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2008



# Building SOA Solutions and Managing the Service Lifecycle

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# Agenda:

- Introduction: SOA and the Service Lifecycle
- Planning and Modeling Services With SOMA
- Managing Service Development and its Assets
- Managing Services in the Operational Environment
- Governance and SOA Quality Management
- Summary and Resources

# SOA Solutions and Service Lifecycle Management

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# SOA Delivers Business Value ... Today

*Flexibility, growth, reuse, decreased cost*

## Businesses need flexibility

- **Market:** Globalization demands flexibility
  - ▶ *Information Access*
  - ▶ *Operational Efficiency*
- **Growth:** at the top of the CEO agenda
  - ▶ *Business processes flexibility*
- **Financial Control:** Market competitiveness
  - ▶ *Reusable assets*
  - ▶ *Improve time-to-Market*



- 97% of customers justified their SOA project on cost
- 100% saw increased business flexibility
- 51% saw revenue growth

*Source: The Business Value of SOA, 2006  
Institute for Business Value Study*

# 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



# Service Oriented Architecture (SOA)

- **SOA is an approach to IT that builds business processes from reusable component modules or "services" that are independent of applications and the computing platforms on which they run.**
  - ▶ Software assets become building blocks that can be reused in developing other applications
  - ▶ Focus is on application assembly rather than implementation details
  - ▶ Can be used internally to create new applications out of existing components
  - ▶ Can be used externally to integrate with applications outside of the enterprise



# Service Oriented Architecture

## *Different Things to Different People*

### Roles

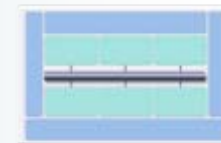
Capabilities that a business wants to expose as a **set of services** to clients and partner organizations

#### Business



An **architectural style** which requires a service provider, requestor and a service description. It addresses characteristics such as loose coupling, reuse and simple and composite implementations

#### Architecture



A **programming model** complete with standards, tools, methods and technologies such as Web services

#### Implementation



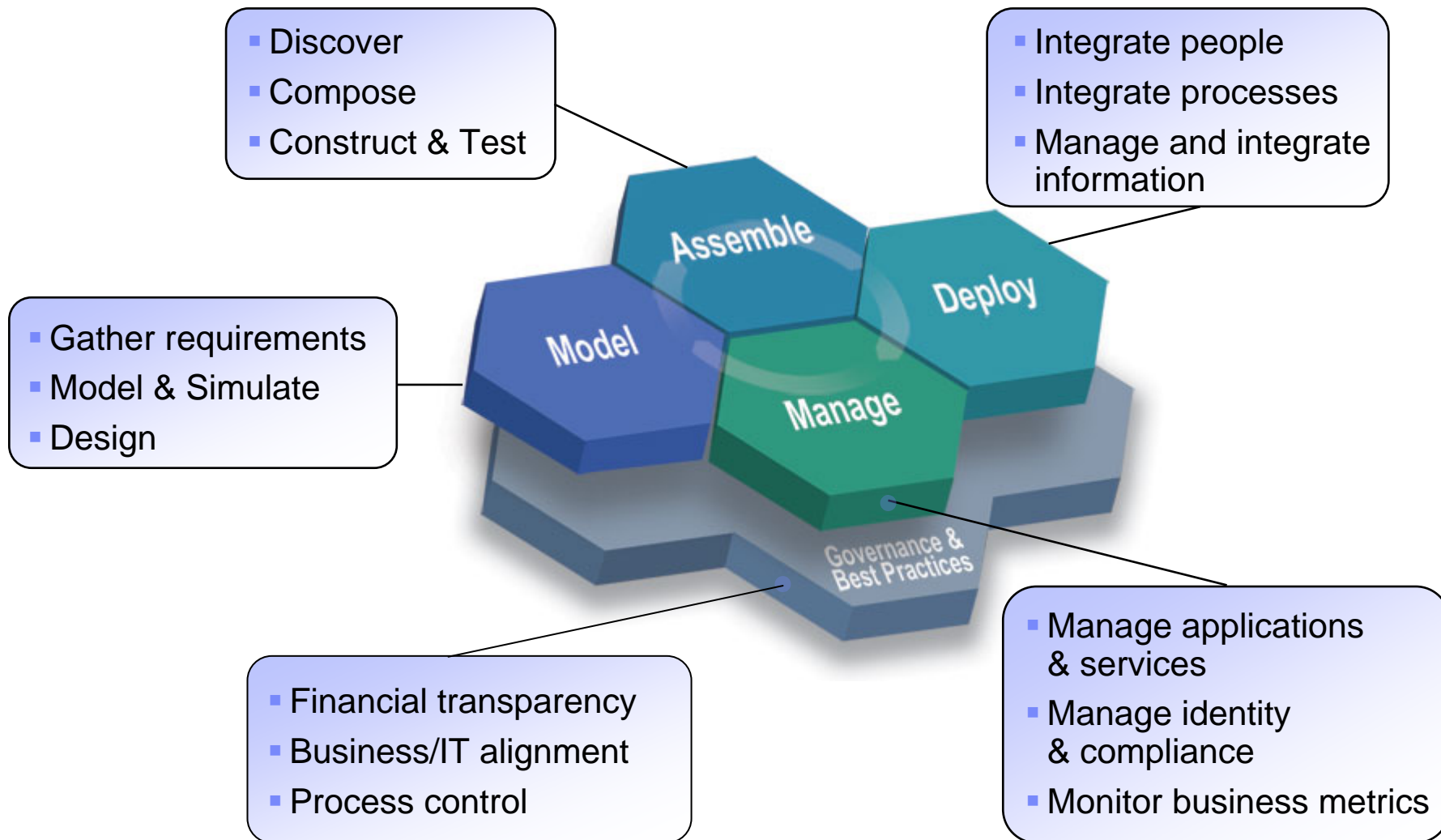
A **set of agreements** among service requestors and service providers that specify the quality of service and identify key business and IT metrics

#### Operations



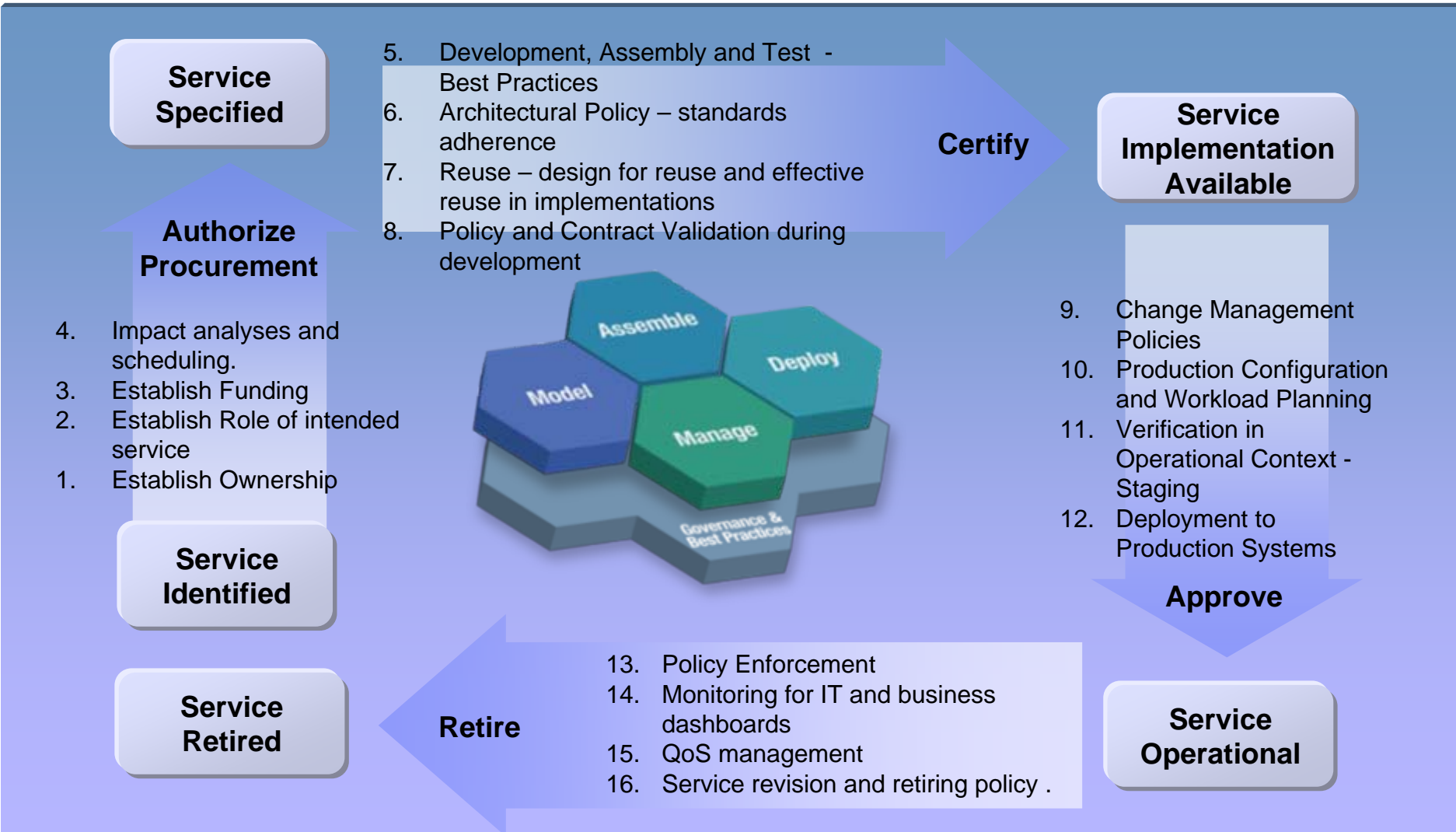


# Innovation through the SOA Lifecycle





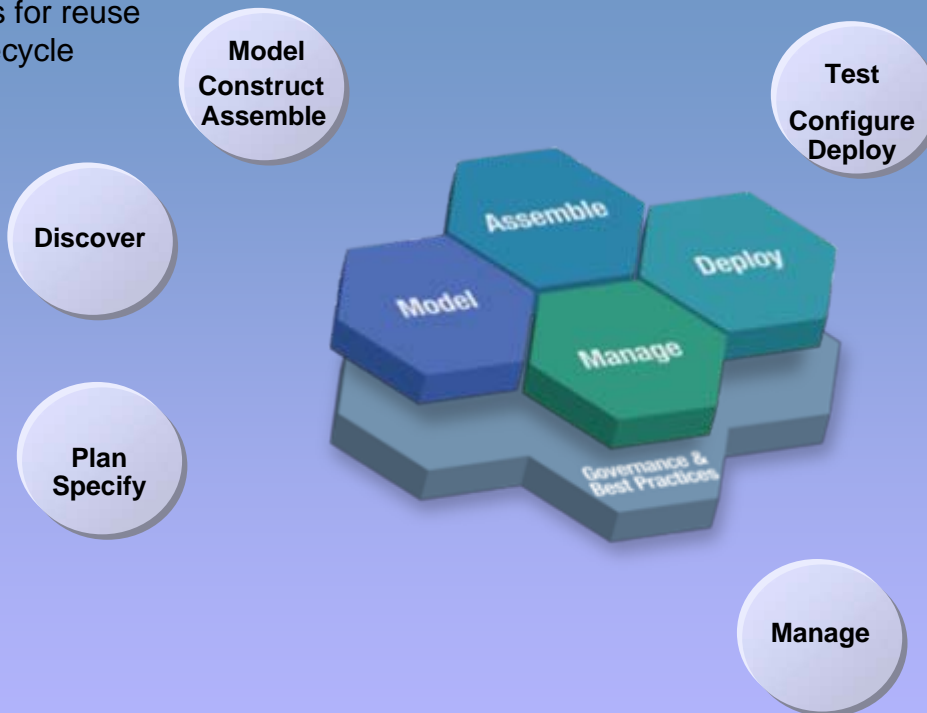
# Activities and Management of the Services Lifecycle



# Service Lifecycle Management Helps Maximize the Business Value of SOA

## Service Development

- Provide visibility of and access to services assets for reuse
- Manage asset lifecycle
- Metadata



## Service Deployment

- Manage promotion of service
- Manage system of record for deployed services
- Manage metadata to support runtimes
- Manage service relationships and interactions
- Enable impact analysis

## Service Management

- Monitor service performance
- Manage and enforce policies

# A Federated Set of Capabilities Enable Service Lifecycle Management

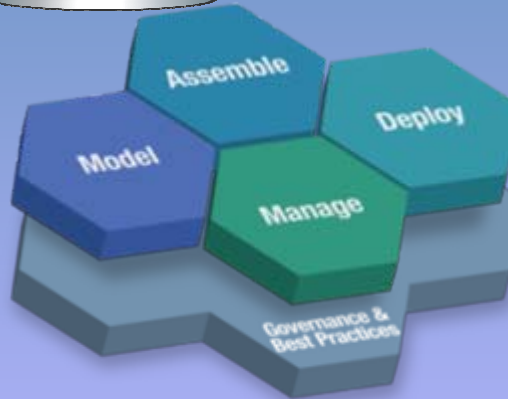
## Service Development

Service Development Lifecycle

## Service Deployment

Runtime Repository  
Change & Release Management

Other Service Endpoint  
Registries / Repositories



## Service Management

Operational Efficiency & Resilience

Metadata Management & Analysis



# Key Roles in the Design and Development of Service-Oriented Applications



## Business Analyst

- **Model the business**
  - ▶ Understand business requirements
  - ▶ Analyze and develop process models
  - ▶ Identify optimum process models to drive services design



## Software Architect

- **Design the services architecture**
  - ▶ Model and refine the services architecture
  - ▶ Identify new services needed and existing assets to re-use
  - ▶ Generate services specifications



## Developer

- **Construct the services**
  - ▶ Implement new services & repurpose existing assets as services
  - ▶ Create UI for access via Web or Portal
  - ▶ Validate and test services



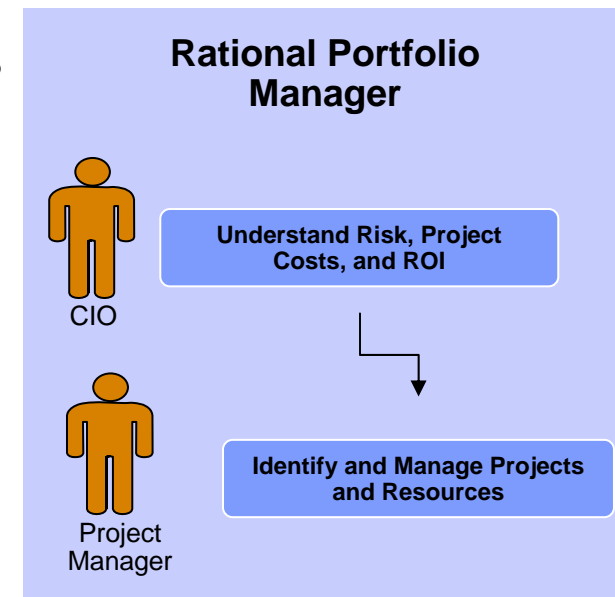
## Integration Specialist

- **Assemble and deploy composite application**
  - ▶ View the process model
  - ▶ Choreograph the services
  - ▶ Assemble and deploy

# Manage Projects and Portfolios



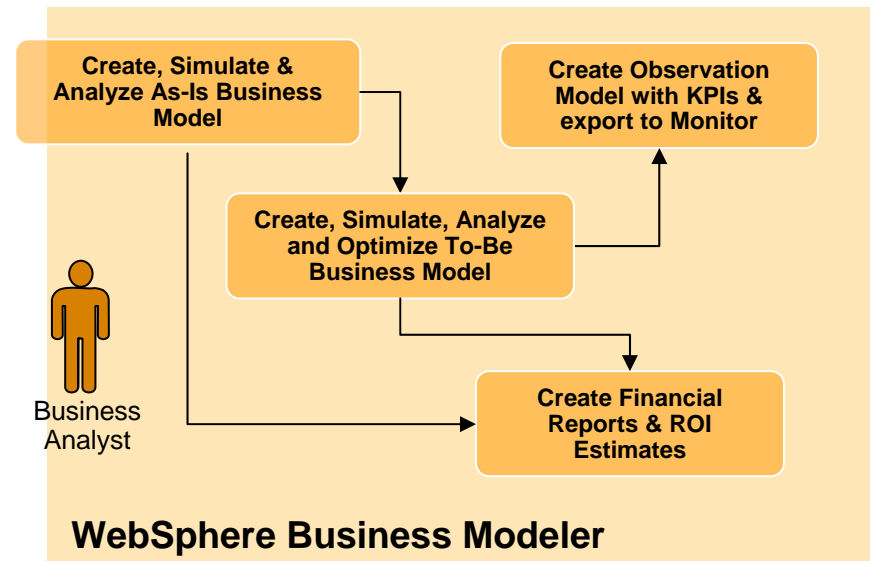
- **Prioritize proposed, existing and under-construction services based on business priority, risk and return**
- **Track service level financials**
- **Provide deep insight into SOA development**
- **Manage SOA project-team dependencies**
- **Forecast demand for service creation and updates**
- **Understand the cost of SOA creation, operations and maintenance**



# Beginning With the Business Model:



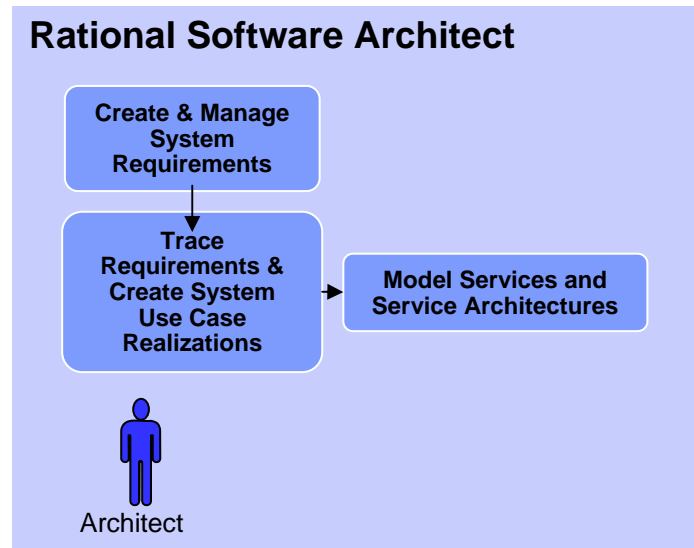
- Discover and design key business processes
- Determine and allocate required resources
- Model the business organization & roles organizational units can play
- Determination of any other process/tasks (services) that must be provided by others



# Identify, Discover, and Design the Services

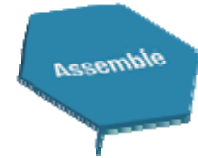


- Trace enterprise requirements to business processes and service implementations
- Define detailed system requirements and service implementations
- Architect and design the service implementations
- Accomplished using a structured method – SOMA
  - ▶ **S**ervice-**O**riented **M**odeling and **A**rchitecture
  - ▶ Method tailored using the Rational Method Composer
  - ▶ Service implementations designed and constructed using UML and the Rational Software Architect

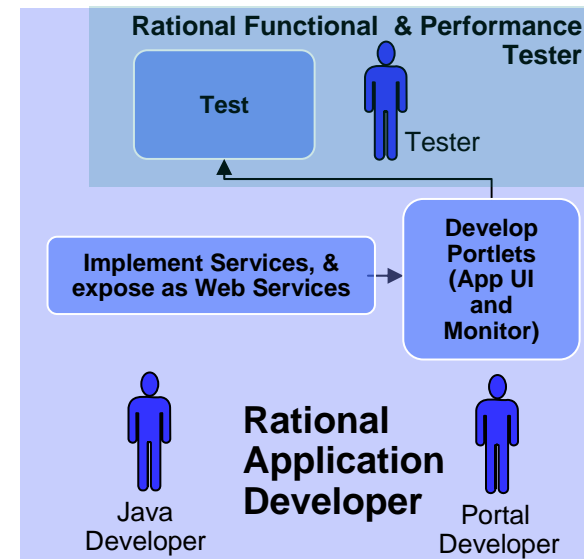




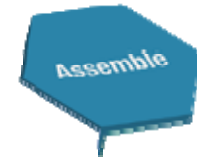
# Construct and Test the Services



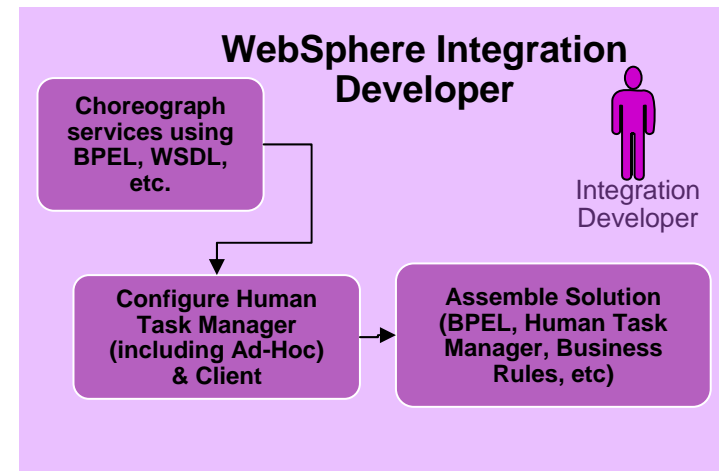
- Discover and consume existing services
- Build new services from scratch or enable existing applications for WS-I compliance
- Test functionality
- Test performance



# Assemble Composite Applications



- **Implement business processes designed by Business Analysts**
  - ▶ Plug in Services
  - ▶ Plug in Human Activities (Staff)
- **Test composite application**



# What is Software Asset Management?

*Asset warehousing is critical to successful reuse*



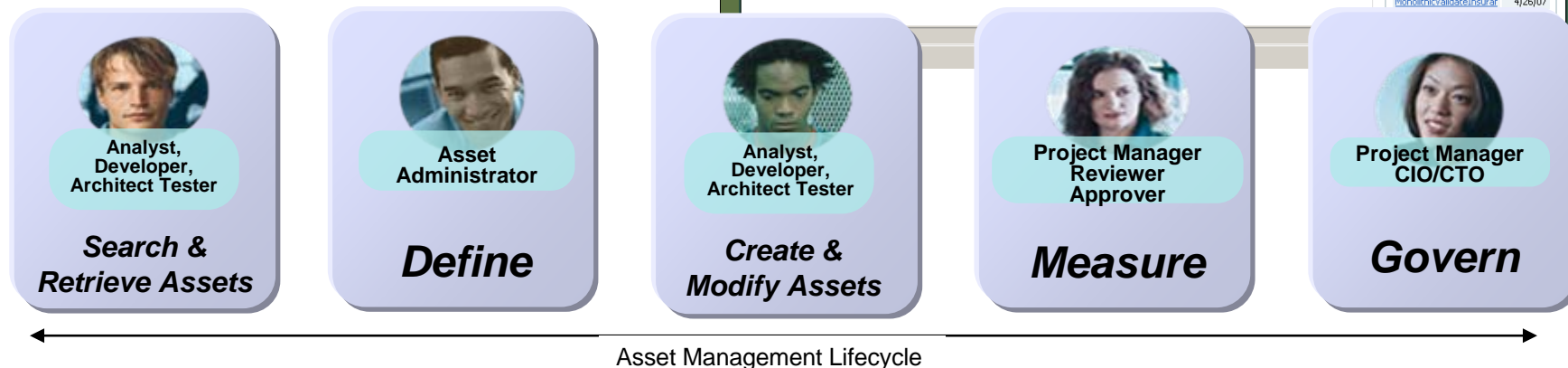
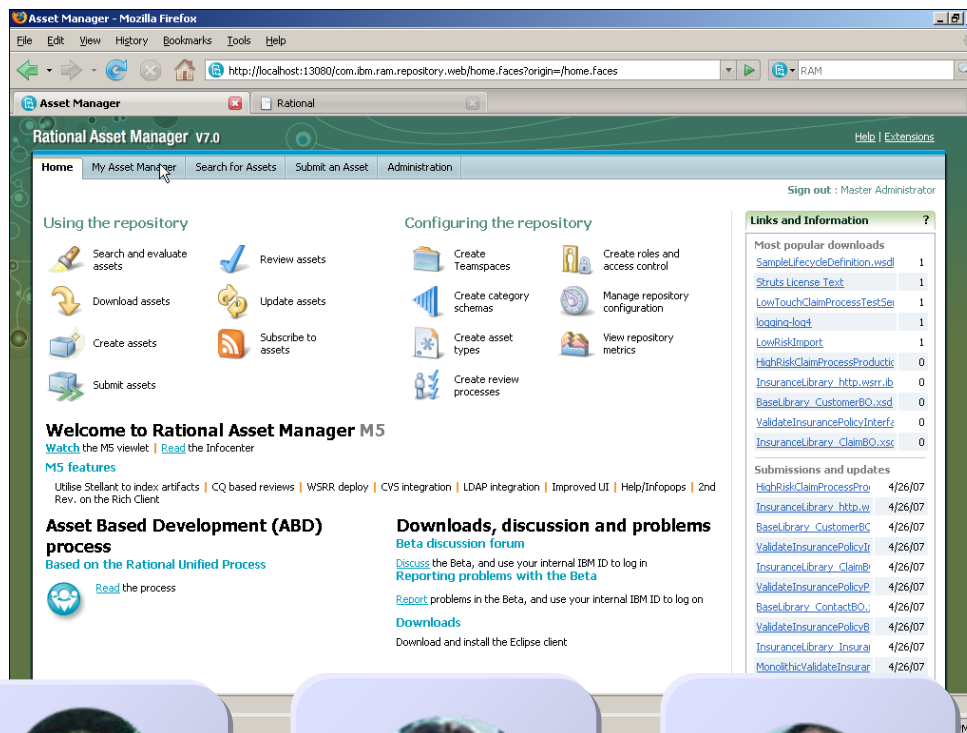
Asset		Name	Desc	State	Ver	Profile
<b>Classification</b>						
Descriptors: Name/Value pairs						
<b>Context</b>						
Domain, Development, Test, Deployment, and so on...						
<b>Solution</b>		Asset Overview				
Artifacts		Requirements				
		Models, Code, Tests				
		Documents				
		...				
<b>Usage</b>						
Usage Instructions & Activities						
Filling Variability Points						
<b>Related Assets</b>						
Association, Aggregation, Dependency, Parent						

Asset meta-data  
Reusable Asset Specification (RAS)

*Software asset management is all of the **infrastructure and processes** necessary for the effective **management, control and protection of the software assets** within an organization, throughout all stages of their lifecycle*

# Introducing IBM Rational Asset Manager

- Collaborative asset management to identify and manage assets & ROI best practices
- Manages assets across their lifecycle from design/creation to consumption/change
- Manages service creation & reuse across service oriented architectures (SOA) projects
- Leverages an extensive library of process best practices for asset creation & reuse in Rational Method Composer (ABS, SOA, GDD, etc.)

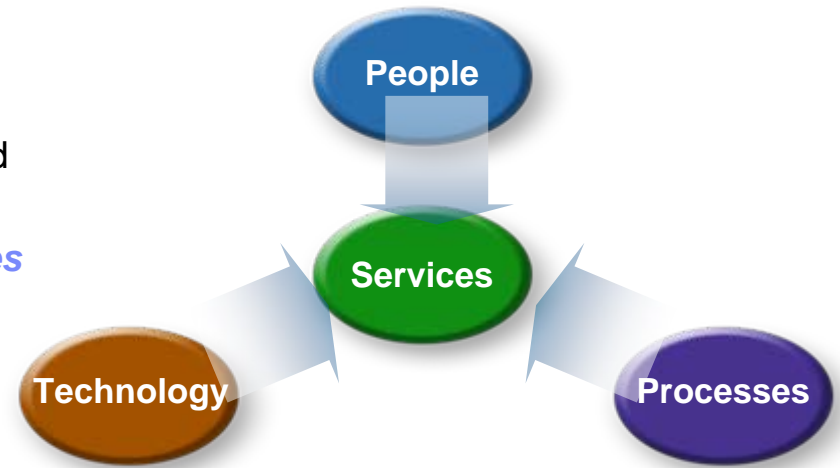


# SOA Governance and Management

**Encompasses the set of services, policies, and best practices which enable IT organizations to gain visibility into their SOA, drive reuse of services, define and enforce policies, and manage the life cycle of services**

The governance model defines:

- ▶ What has to be done? The Service *lifecycle*
- ▶ How is it done? The governance *decision* path based processes
- ▶ Who has the authority to do it? As defined by the *roles and responsibilities* of the Service lifecycle processes
- ▶ How is it measured? The vitality and conformance *checkpoints*



**The focus of SOA is the  
*Services Model***

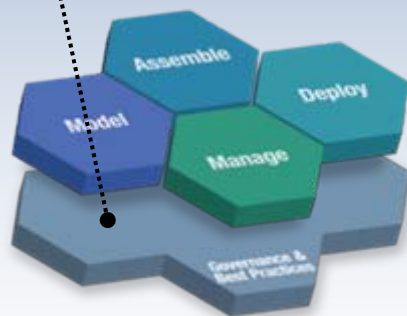
## **Governance is enabled by management**

- ▶ Governance determines who has the authority to make a decisions
- ▶ Management is the process of making and implementing the decisions

# IBM WebSphere Service Registry and Repository



**Govern**



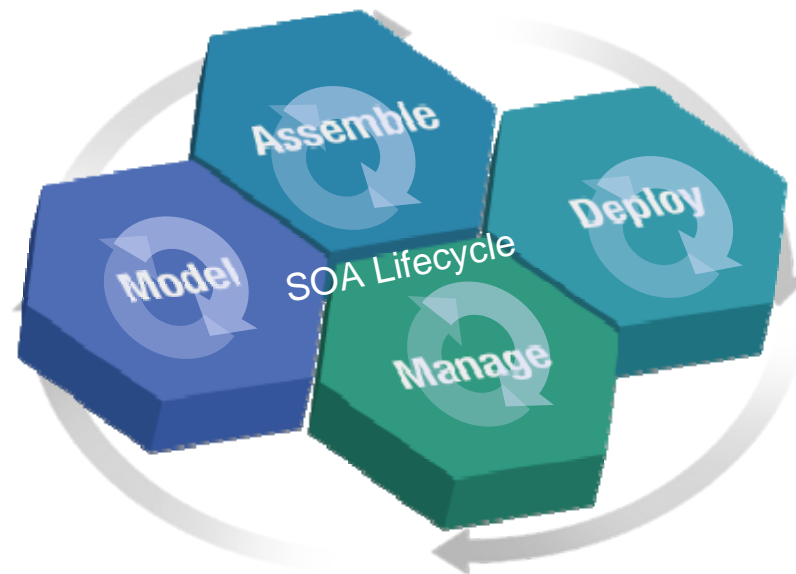
## ***Enable Governance***

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**

# Insuring Business Value Throughout the SOA Lifecycle

**SOA Quality Management** is the process to verify services meet functional and operational business requirements



*SOA Quality Management is continuous and takes place across all phases of the SOA Lifecycle*

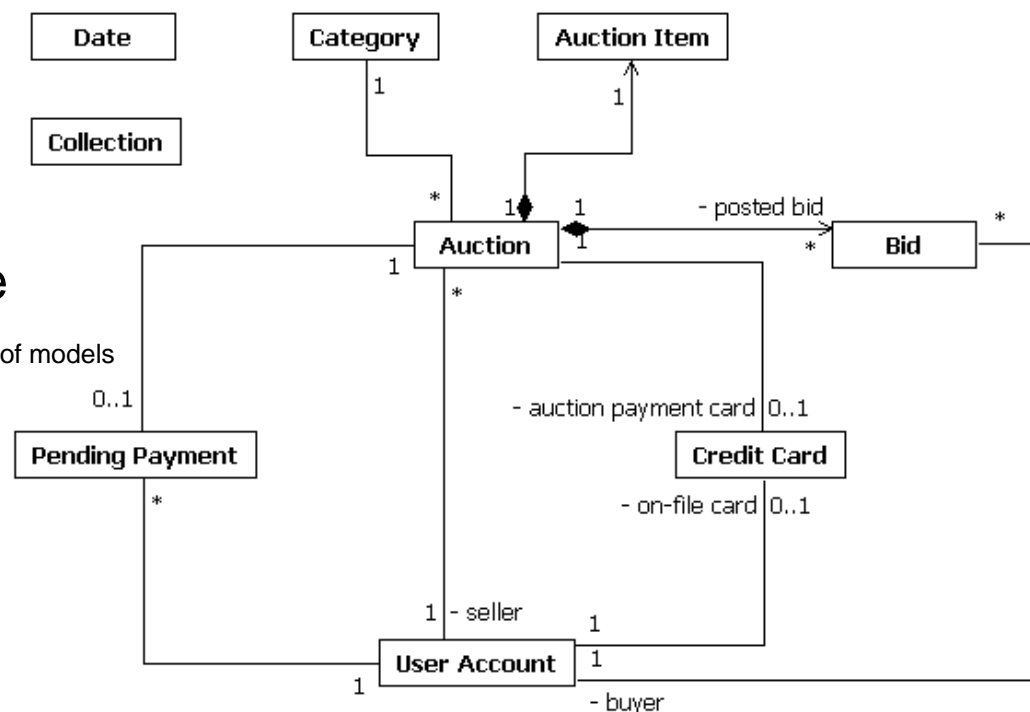


# SOA Solutions and Service Lifecycle Management

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# Models

- Are Abstract Representations of
  - ▶ Business logic
  - ▶ Architecture
  - ▶ Design
  - ▶ Reusable assets
- Allow multiple viewpoints to be expressed independently (diff kind of models  
- component, context, system diagram)
- Enable
  - ▶ Manipulation
  - ▶ Reasoning
  - ▶ Logical consistency checks
  - ▶ Automation
- More cost efficient

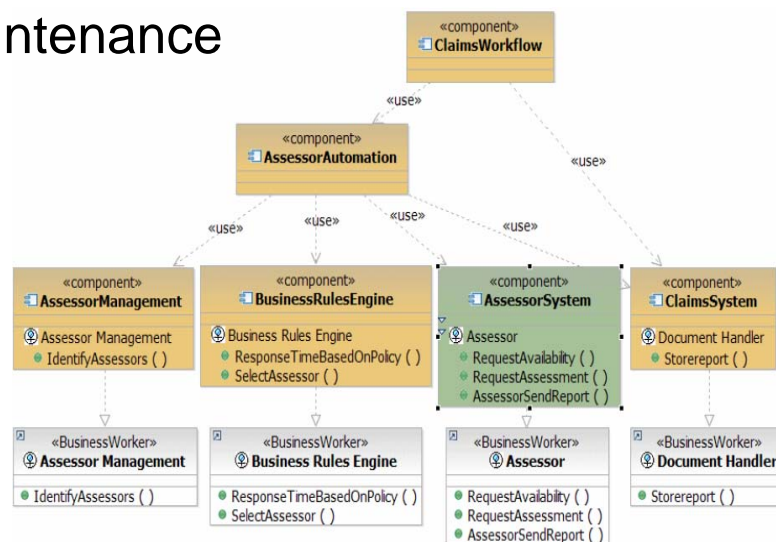
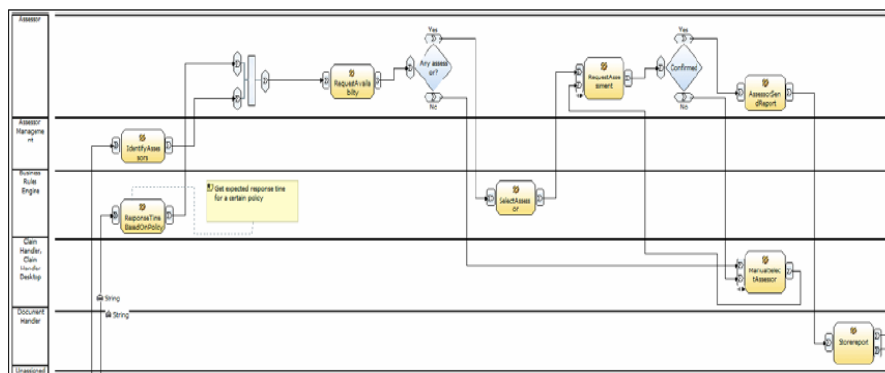


# Different Stakeholders, Different Models

- ▶ Business Model
  - Visualization of business processes
- ▶ Use Case Model
  - Visualization of functional requirements
- ▶ Analysis Model
  - “What” the system must do to realize the functional requirements
- ▶ User Experience Model
  - Visualization of user interaction with the system
- ▶ Design Model
  - “How” the system will realize the functional requirements
- ▶ Data Model
  - Visualization of persistent storage
- ▶ Implementation Model
  - Visualization of the code

# What is Model-Driven Development (MDD)?

- The encapsulation of business logic and industry best practices into models
- The use of these models for application development, code generation, testing, and maintenance



- Modeling helps you work at higher levels of *abstraction*
- Higher levels of abstraction lead to higher *productivity*

# UML – The Language of Model-Driven Development



- Model-driven development is aided by a common *language* across all stakeholders
  - ▶ Unified Modeling Language (UML) is the standard language for visualizing, specifying, constructing, and documenting the artifacts of a software-intensive system
  - ▶ UML allows software architects, designers and developers to specify, visualize, construct, and document all aspects of a software system

# WebSphere Business Modeler

- Graphically design processes and quickly redesign across people, partners and applications
- “What-if” simulation of operations to optimize and project business benefits
- Fast start to deployment—generates code from model

The screenshot shows the IBM BPM Workbench interface. The main window displays a process flow diagram for 'Payment Handling'. The process starts with a 'Customer Order' input, leading to a decision diamond 'Payment Method?'. From this diamond, two paths emerge: one for 'Take Cash or Check' and another for 'Swipe Card & Sign'. Both paths lead to a 'Customer Order' output. The interface includes a 'Project Tree' on the left, a 'Simulation control panel' at the bottom, and a status bar showing simulation results for 'Mar 17, 2004 9:55:37 AM'.

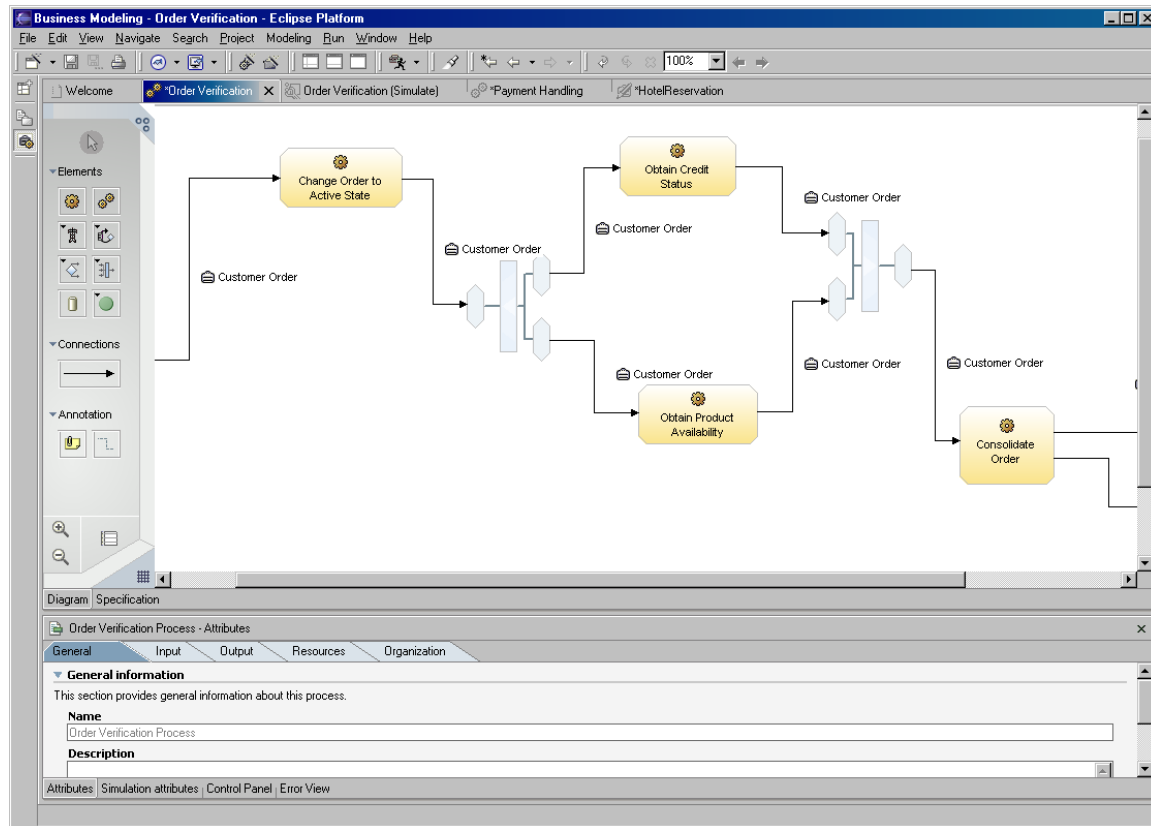
The screenshot shows an 'Activity Costs' chart and table. The chart is a 3D bar chart with 'Activity' on the x-axis and 'Resource Work Std. Cost U.S. Dollar' on the y-axis. The table below the chart lists activities and their costs.

Activity	Cost (U.S. Dollar)
Gather Inventory Information	0.83
Calculate Order Quantities	2.50
Enter Supply Order Data	5.83
Print Supply Order Request	1.66
Submit & Fax Supply Order Request	1.66
Add New Order To Inventory System	1.66
Update Supplies To "Receivable"	0.83
Place Supply Order Into Receivables	0.66
Print "Receivables" Order	0.16
Send Order Notice To Shipping	0.83
Receive Order	3.33
<b>Total</b>	<b>20.00</b>

Below the table is a detailed activity list with columns for activity name, status, resource, and cost.

# WebSphere Business Modeler

- **Easy-to-use** (Designed and tested with business analysts)
- **Multiple User Profiles & Technology Modes** (Business/IT friendly)
- **Detailed Resource, Process and Data Modeling**
- **Robust Analysis** (Static/Dynamic)
- **Powerful Simulation Engine**
- **Multi-User Support**
- **Rational RSA Integration (UML)**
- **WID Integration (BPEL)**





# The Requirements for Modeling the New Architectural Style of SOA Are Different

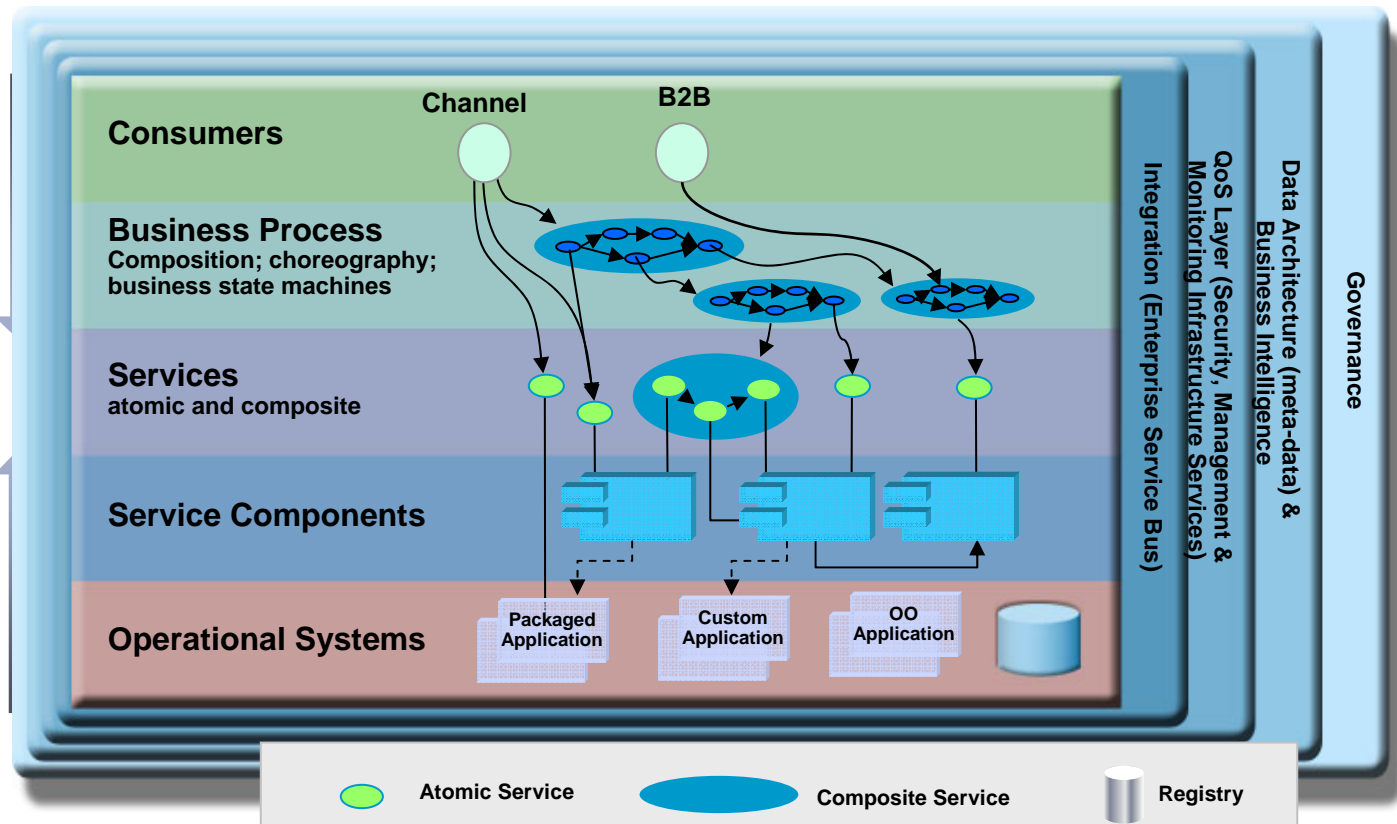
We are raising the level of abstraction by decoupling the Service Provider and Consumers in a partially-layered SOA.

“....there are real opportunities to raise the level of abstraction again” – Grady Booch

Service Oriented Modeling and Design

Component Oriented Modeling and Design

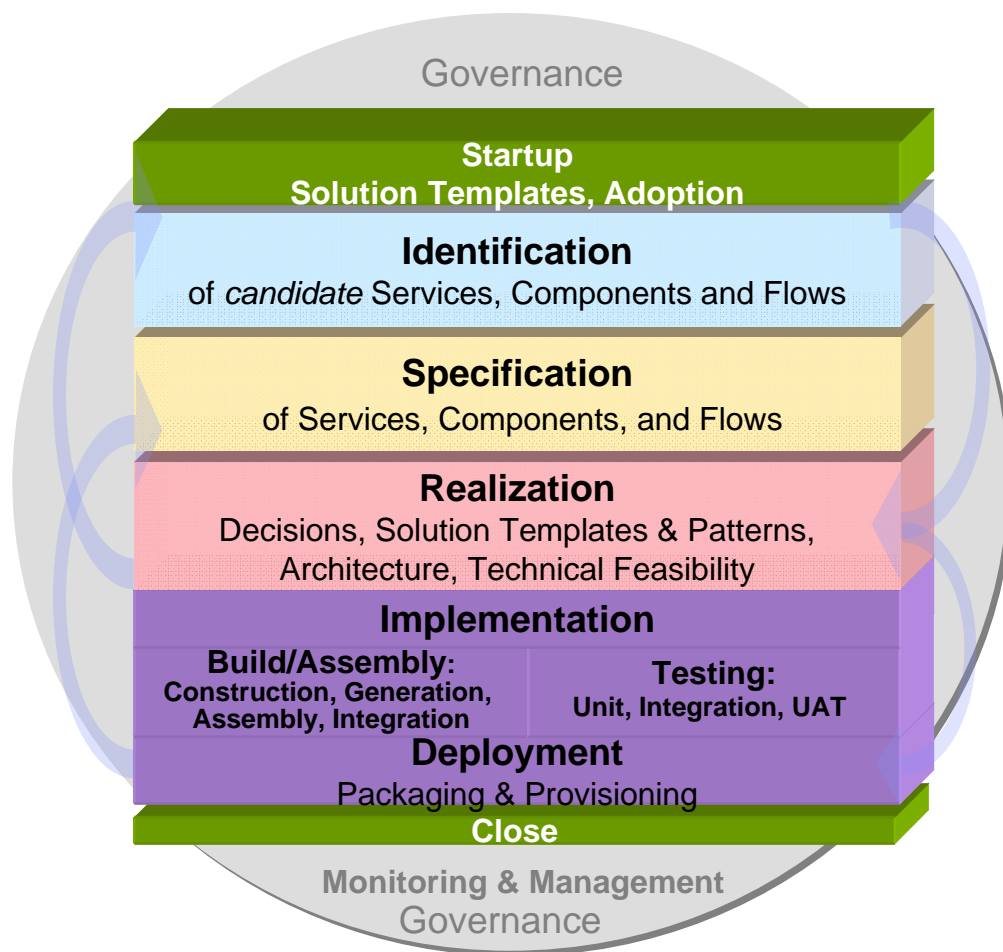
Object Oriented Modeling and Design



# SOMA – Service-Oriented Modeling and Architecture

- It is a **structured method** for enabling target business processes through the identification, specification and realization of business-aligned services that form the SOA foundation.
- It introduces **new and innovative techniques** where gaps exist in existing techniques, to specifically address SOA needs. SOMA enables creation of composable services.
- It creates **continuity between the business intent and IT implementation** by extending business characteristics (e.g. goals and key performance indicators) into the IT analysis and architectural decisions.
- Analysis and modeling performed during SOMA is **technology and product agnostic**, but establishes a context for making technology and product specific decisions in later phases of the lifecycle.
- Its **goal is to provide guidance** in the modeling (analysis and design) of SOA.

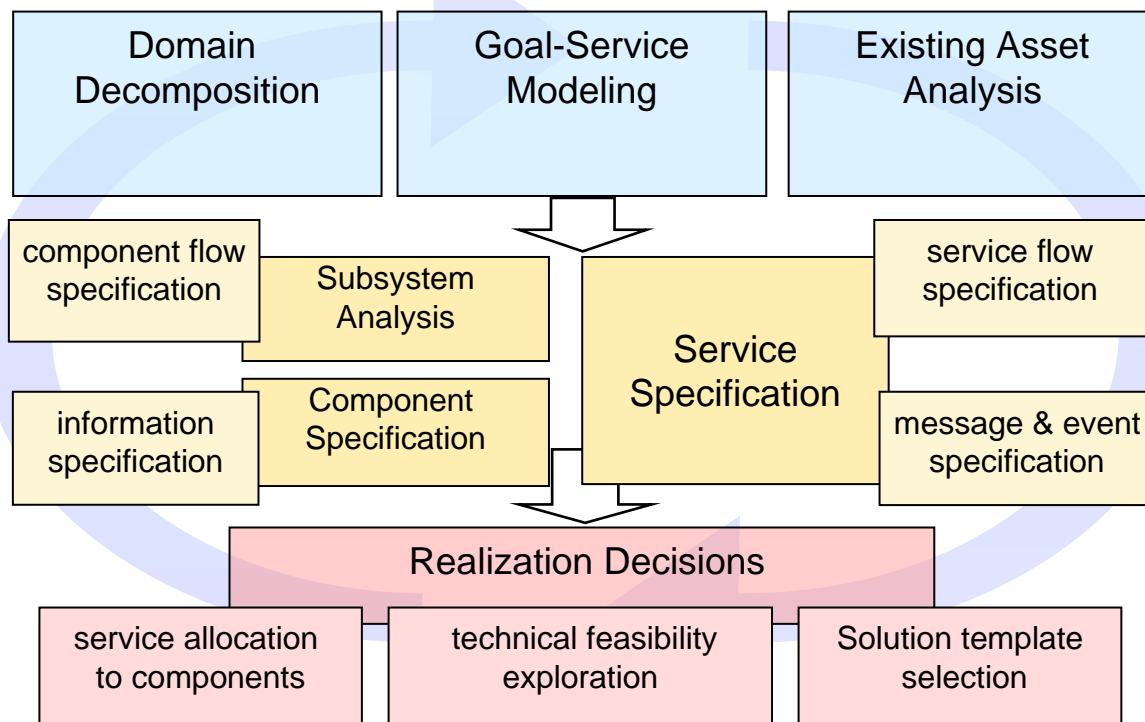
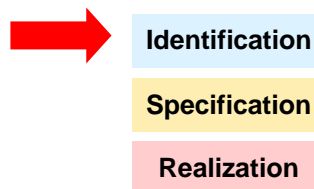
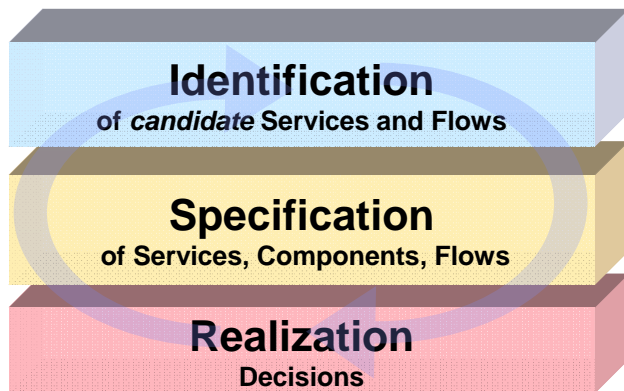
# Three Major Steps of SOMA



SOMA produces outputs that are required by SOA implementation activities

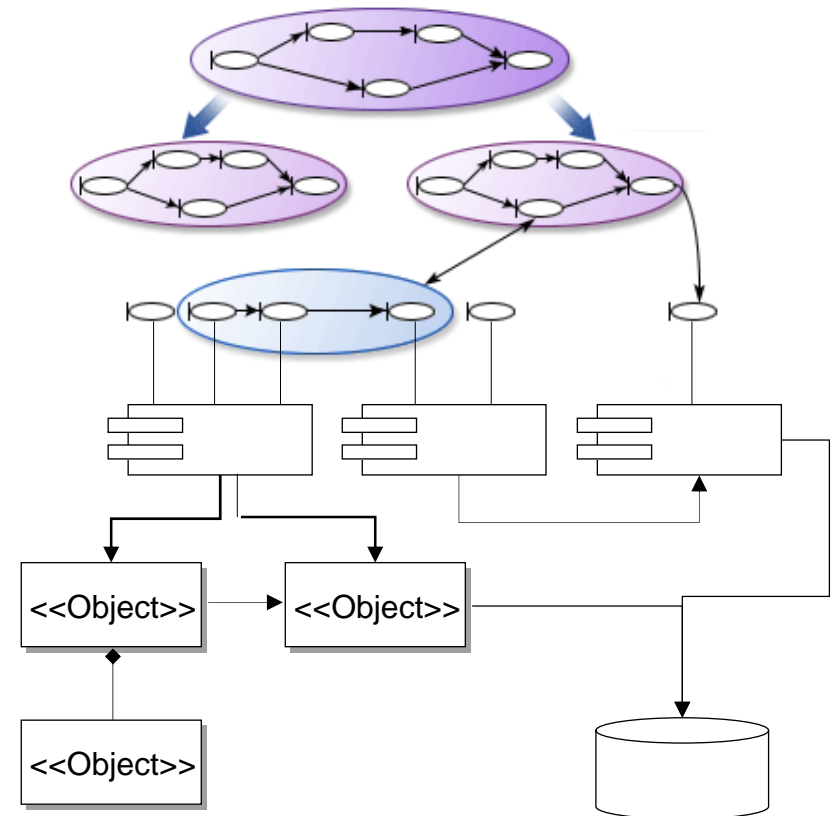
- **The first major step** in the SOMA process identifies candidate services and flows
- **The second major step** selects and specifies the services that will be exposed and service components that will realize them
- **The third major step** captures realization decisions (concurrently with steps one and two)
- **Build/Assembly** construct and assemble service
- **Testing** perform unit, Integration, UAT
- **Deployment** package, Provision, Deploy
- Monitoring and Management of Service

# SOMA – How do You Do It?



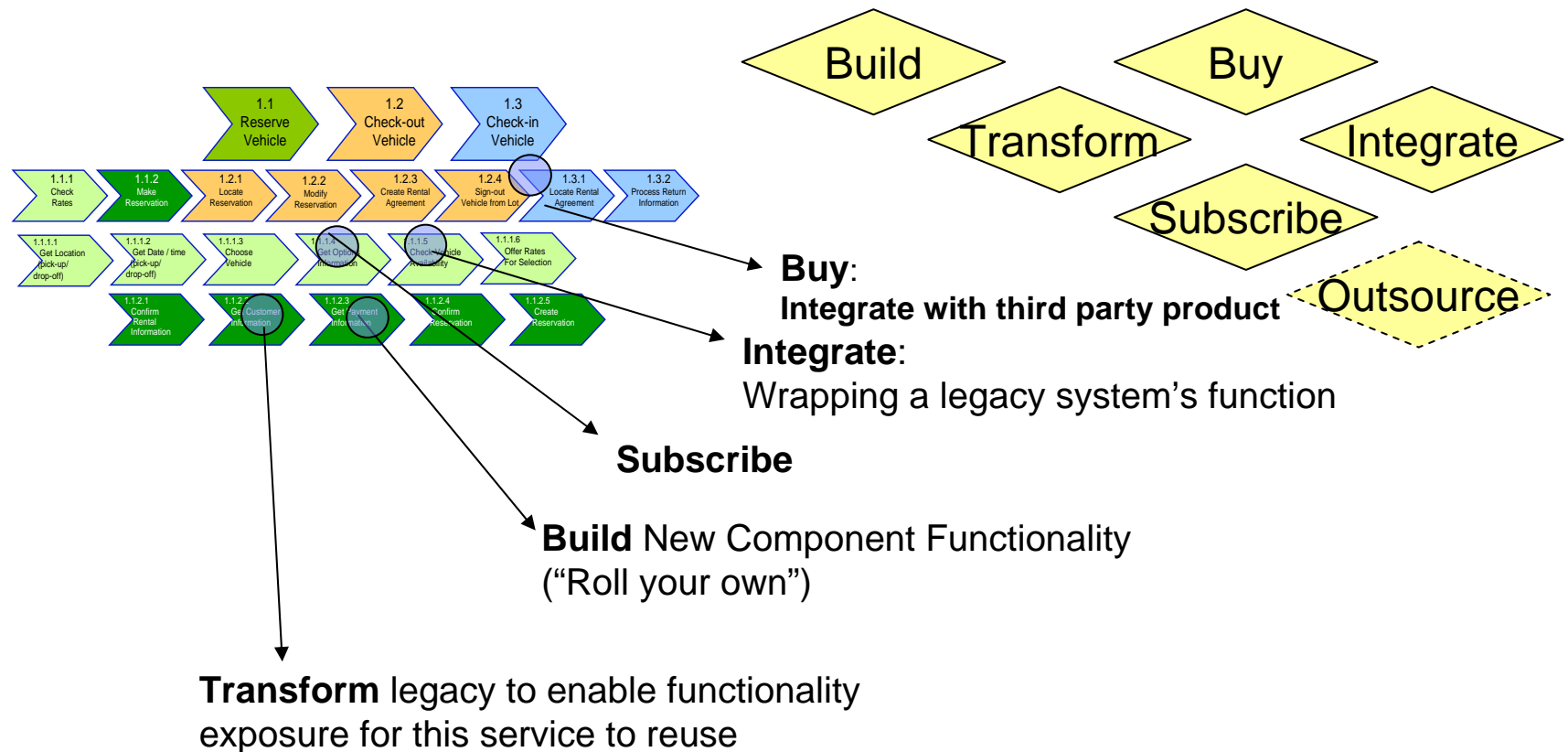
# SOMA Specification Helps Design the Details of the Three First-class Constructs of SOA

- **Services** – Use service litmus tests to decide which services to expose, and to detail their specifications
- **Service Components** – What large-grained components will realize and maintain QoS for the exposed services
- **Flows (Processes)** – Specify messages, choreographies, and information architecture required
- In the context of the above three elements we additionally elaborate the following notions:
  - ▶ *Information*
  - ▶ *Composition*
  - ▶ *Policies*
  - ▶ *Context*
  - ▶ *Events*



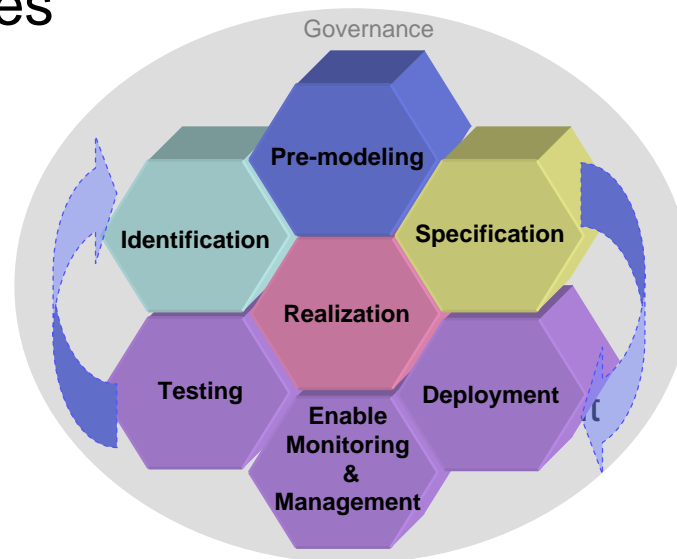
# Now Decide How to Realize the Functionality of Each

It is *not just* a build vs. buy decision... This realization can be achieved in a number of ways.



# Summary

- IBM is breaking new ground in bridging the business-to-IT gap, making measurable progress and delivering value to our clients
- SOMA is one of IBM key solution building offerings in bridging Business and IT
- SOMA is an end-to-end method for identification, specification, realization, and implementation of services to enable target business processes

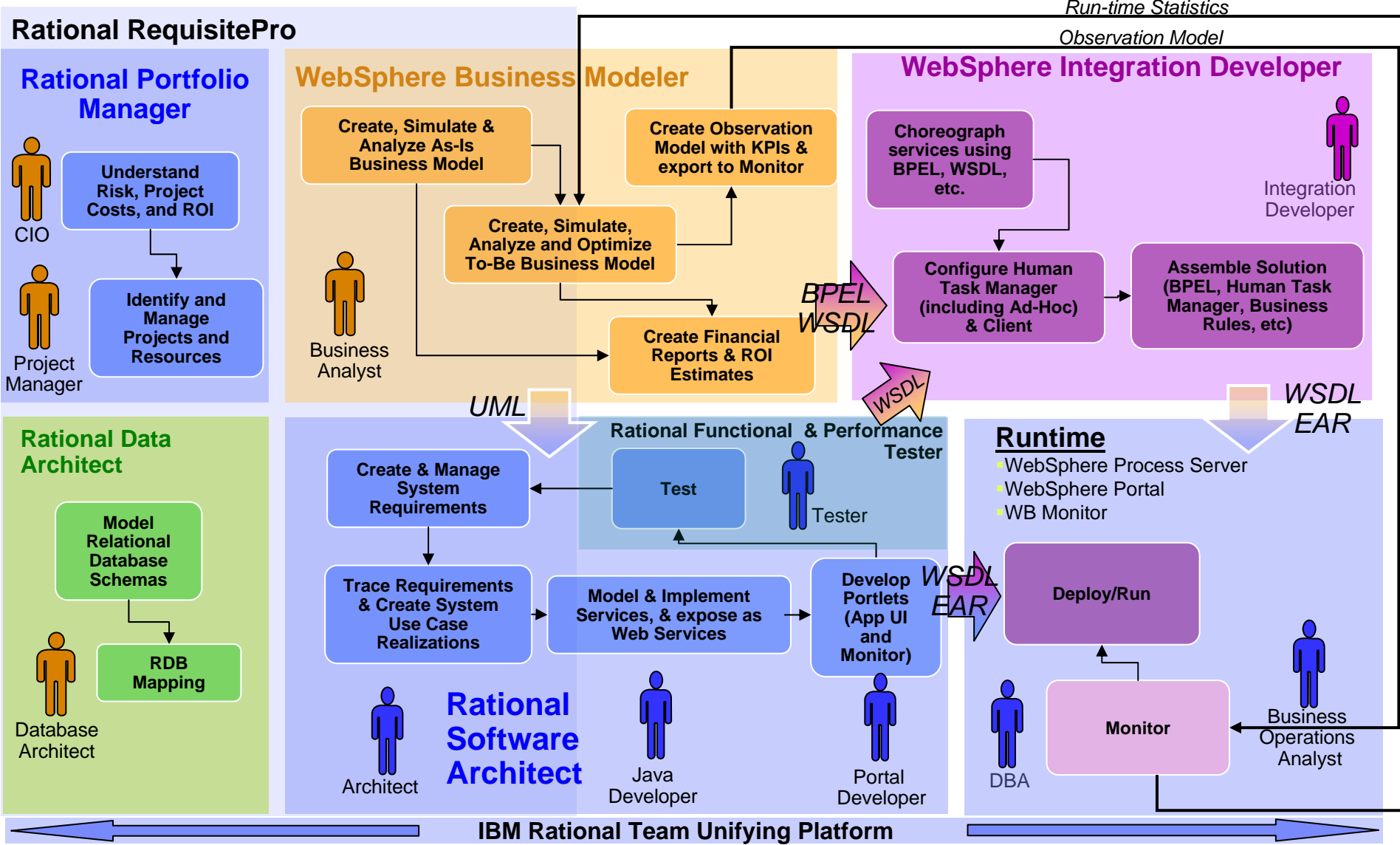




# SOA Solutions and Service Lifecycle Management

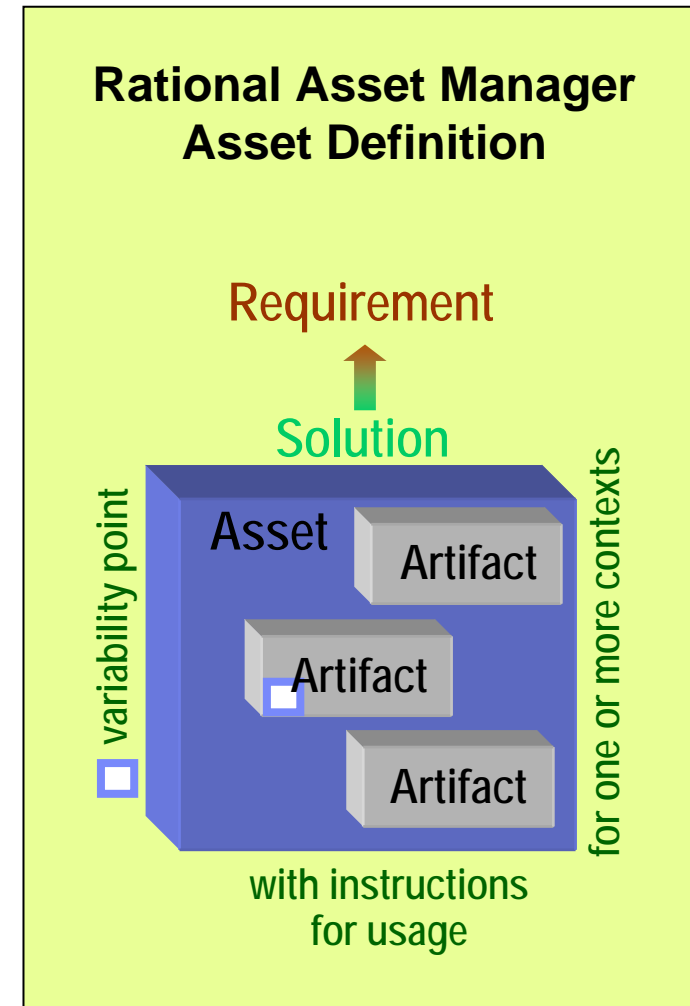
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# Service Development Produces Many Types of Artifacts:



# What is an Asset?

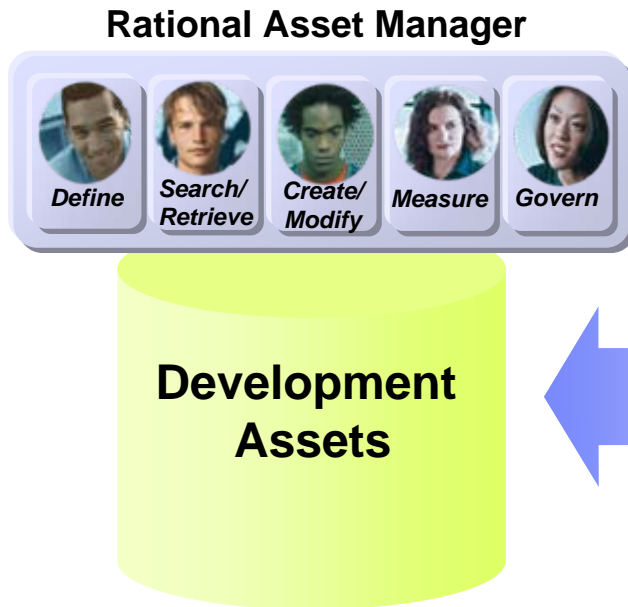
- An Asset is
  - ▶ a collection of Artifacts
  - ▶ which provide a solution to a requirement or business need
    - for one or more contexts
    - with instructions for usage
    - and variability points
- What are Artifacts?
  - ▶ Workproducts from the software process
    - Requirements, Designs, Models, Source code, Data, Tests, User Interfaces, Documentation, Service Interfaces, Estimates and so on...
- Kinds of assets
  - ▶ Applications, components, patterns, services, frameworks, templates, ...



# What is Asset Management?

- Software Asset Management is all of the infrastructure and processes necessary for the effective management, control and protection of the software assets within an organization, throughout all stages of their lifecycle
- (ITIL)

- IT Infrastructure Library



Asset	Name	Desc	State	Ver	Profile
<b>Classification</b>					
Descriptors: Name/Value pairs					
<b>Context</b>					
Domain, Development, Test, Deployment, and so on...					
<b>Solution</b>					
Asset Overview					
Requirements					
Artifacts → Models, Code, Tests					
Documents					
...					
<b>Usage</b>					
Usage Instructions & Activities					
Filling Variability Points					
<b>Related Assets</b>					
Association, Aggregation, Dependency, Parent					

Asset meta-data  
Reusable Asset Specification (RAS)



# Asset Management Challenges

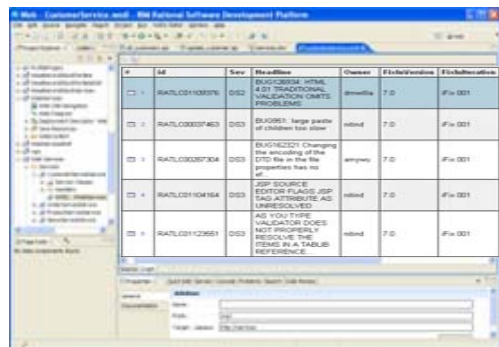
- Software Reuse
  - ▶ How are my software assets being used? What cost savings are there?
  - ▶ How can I make sure that my developers have the right, high quality asset easily available?
- Open Source Management
  - ▶ What open source is in use across my company?
  - ▶ Are the legal approvals in place for all use of it? Is my exposure managed?
- IT Governance
  - ▶ How do I prescribe and enforce the use of certain architectural standards?
  - ▶ How do I link my project portfolio to my software assets and architecture?
- Web Services / SOA transformation
  - ▶ How do I control what projects can create new or access existing service assets?
  - ▶ What assets in my environment use this service?
  - ▶ How do I ensure alignment with architecture, standards and business goals?

# Rational Asset Manager (RAM) Overview

- RAM is a **development** asset management repository
  - ▶ Uses the Reusable Asset Specification to *define, create and modify assets*
  - ▶ Provides asset type specific *search & governance*
  - ▶ *Measures* asset reuse in development
- Handles any kind of asset
  - ▶ Applications, components, patterns, services, frameworks, templates, ...
- Benefits:
  - ▶ Reduce software development and operational costs
  - ▶ Improve quality by facilitating the reuse of approved & proven assets
  - ▶ Integrated with other Rational and other IBM tools

# RAM Integrations With Rational Team Products

*RAM works seamlessly with Rational's class leading team products!*

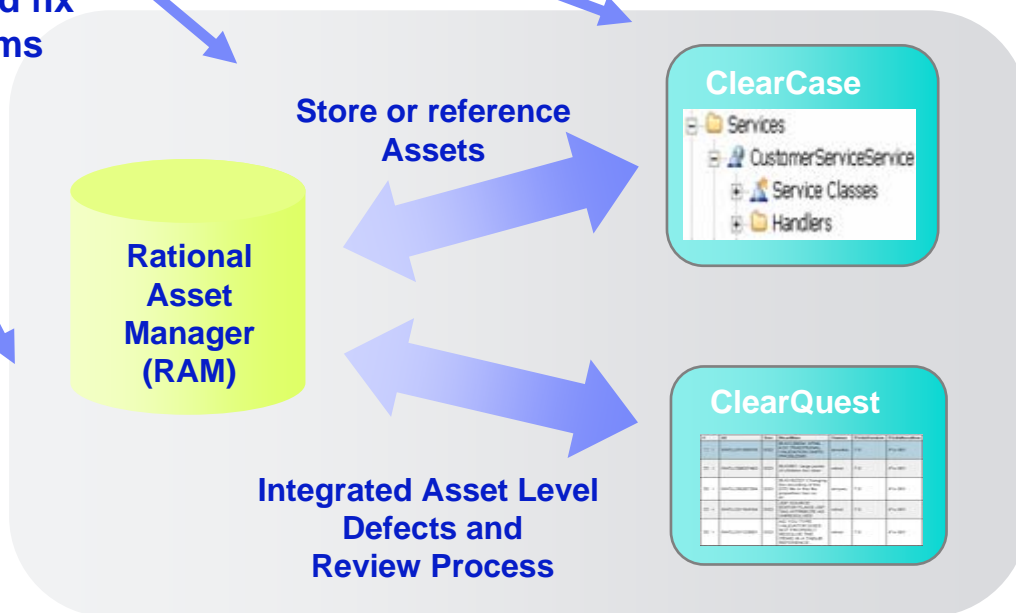


Develop and Share Code

- Develop code in a team environment
  - Create and package assets
  - Search for and reuse assets
  - Track and fix problems
- Seamlessly! All in the same IDE!*

Track and fix problems

Package and Consume Assets

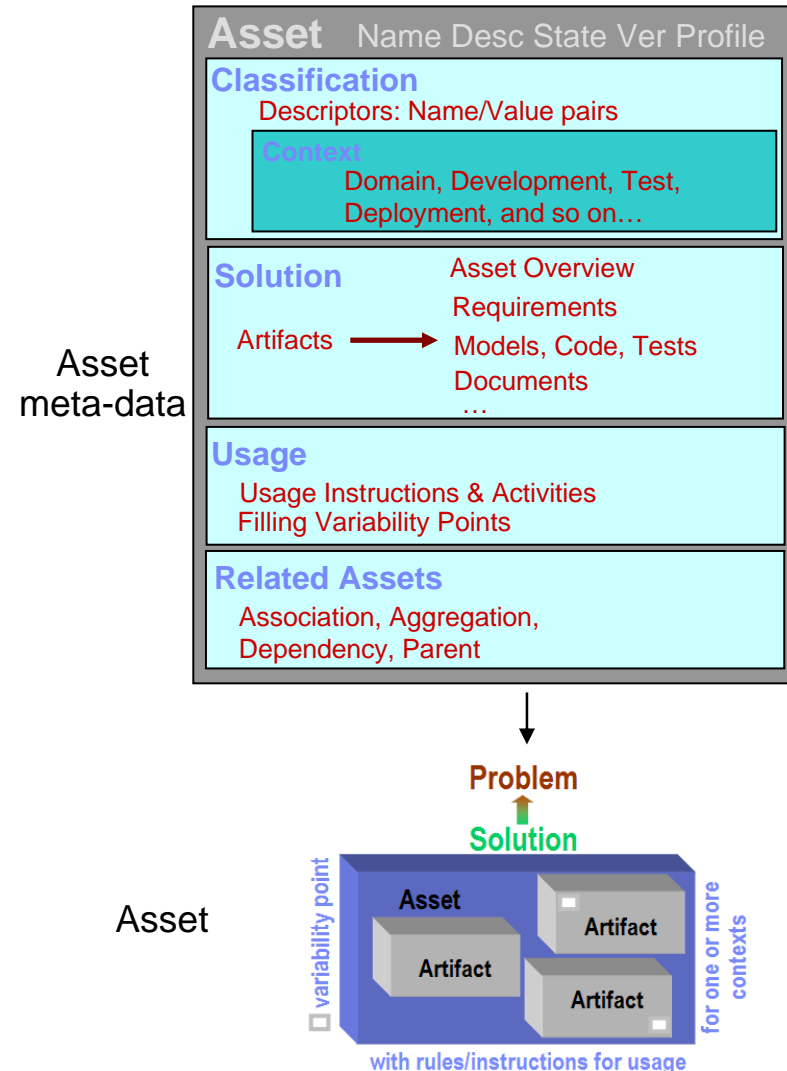


# Reusable Asset Specification (RAS)

RAM uses RAS to specify the meta data for an asset

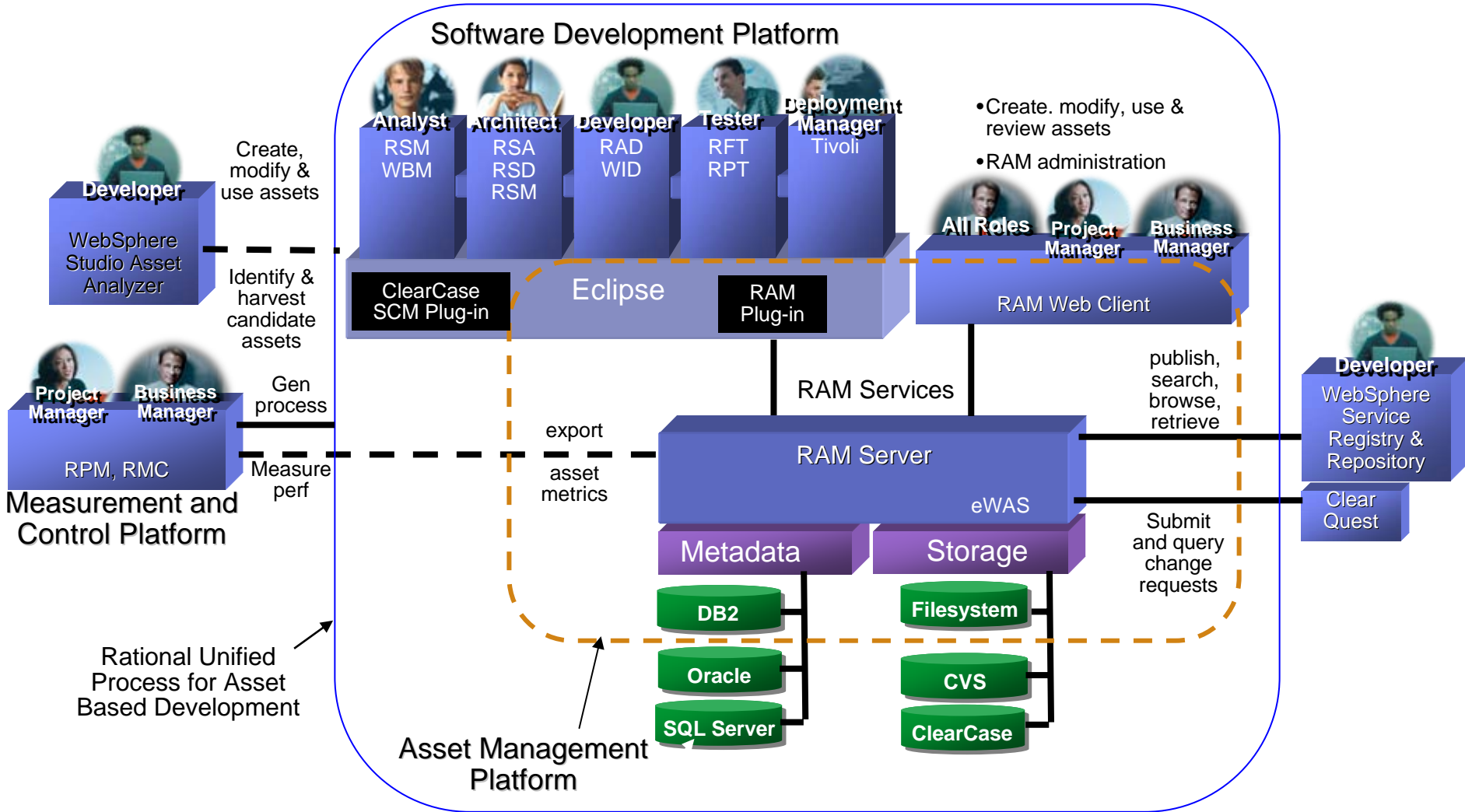
- Provides a standard way to describe and package assets
- Reduces the friction on development transactions
  - ▶ Thru standard, consistent packaging
- RAS provides the organization and structure of information and artifacts for an asset
- RAS enables tooling to automate many asset workflows
- RAS is used to package many kinds of assets including components, services, and pattern implementations, ...

## OMG Standard





# Rational Asset Manager (RAM) Architecture



# Task: Configuring the repository for projects

- Before getting started, the Administrator configures the repository
  - ▶ Create Teamspaces, Roles and Access Control
  - ▶ Create Categories
  - ▶ Create Asset Types
  - ▶ Create Review Processes
  - ▶ Define Your Asset Mgmt Processes
  - ▶ Connect Asset Mgmt Processes To Assets



**Teamspace Admin**

# Create Teamspace, Roles & Access Control



**Business Analyst**

**Analyst Teamspace**

**Access Control:**  
search, read, browse, download, update all assets in Analyst Teamspace



**Asset Owner**

**Service Dev Teamspace**

**Access Control:**  
search, read, browse, download, update all assets in Service Dev Teamspace



**Reviewer**

**Claims Processing Teamspace**



**Architect/ Developer**

**Access Control:**  
search, read, browse, download, update all assets in Claims Processing and Analyst Teamspace



**TeamSpace Admin**

**Access Control:**  
full entitlement across all assets in all Teamspaces



**IT Operations**

**Access Control:**  
search, read, browse, download, update all assets in Service Dev Teamspace



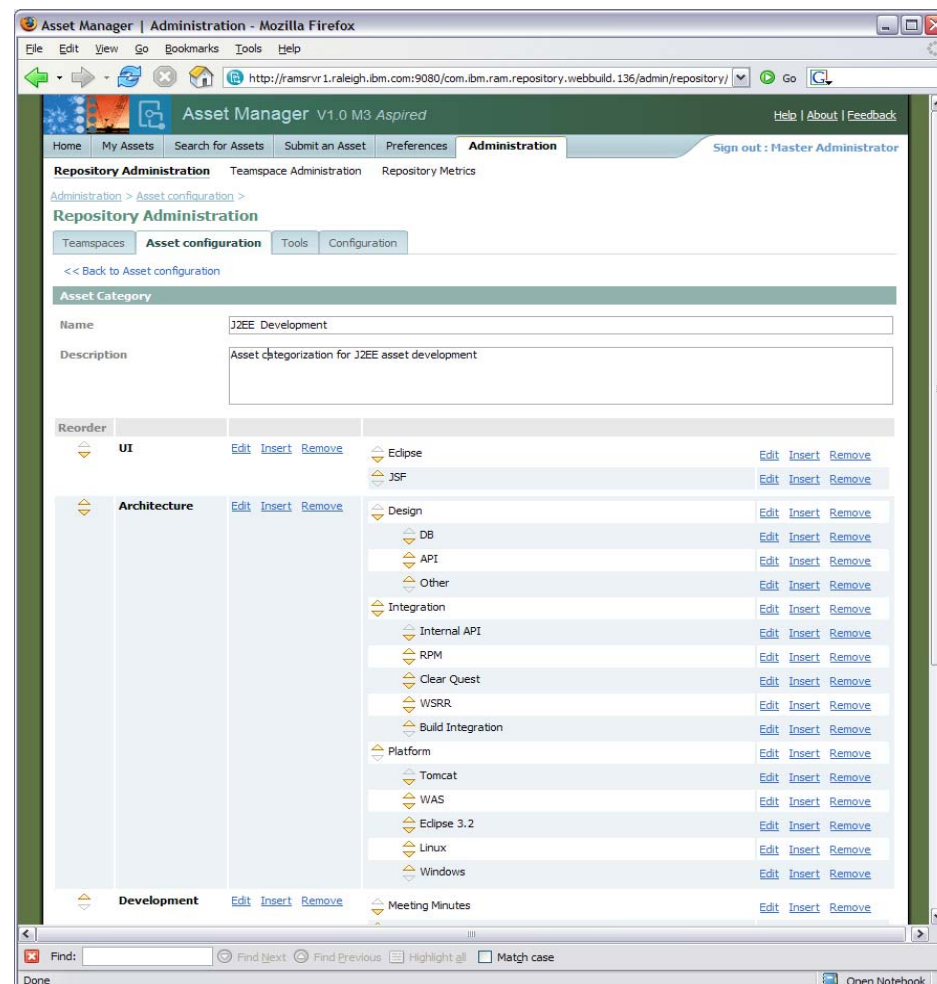
**Review Board**

**Access Control:**  
search, read, browse, review all assets across all Teamspaces

A Teamspace is a collection of users, their roles and entitlements, and their assets and review processes

# Create Categories

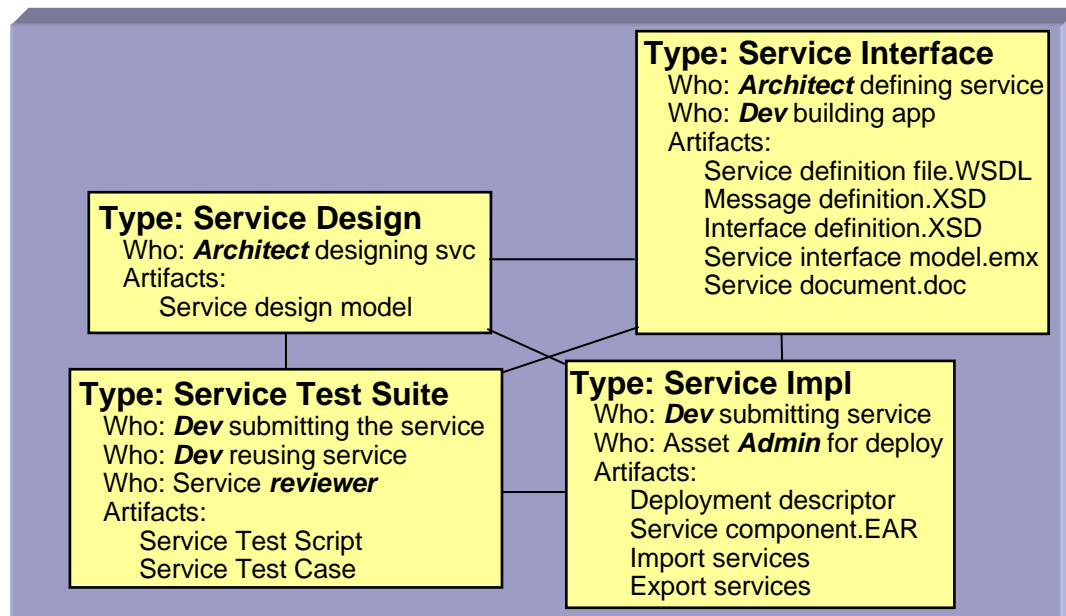
- Categories for Asset classification are configured via the RAM Web UI or an XML file
- Assets can belong to any number of categories
- Categories can be used for faceted search, browsing, and access control



# Asset Types

- Asset Types can be created to handle any asset
- An Asset type specify:
  - ▶ Type name, description
  - ▶ Required artifacts
  - ▶ Required relationships
  - ▶ Attributes (optional or required)
  - ▶ Which categories are allowed
- Validation of asset type constraints will be run on asset submission

## Example Asset Types representing a Service



# Task: Search or evaluate an asset

## ■ Description

- ▶ Analyst/Architect/Developer ... do the following:
  - enters keywords to search for assets
  - navigate the classification schema/facets evaluating the result list

## ■ Customer pain points

- ▶ effort to find asset
  - where to look, context and narrow it down to relevant candidates, inconsistent meta data
- ▶ effort to evaluate asset
  - which assets that apply to the problem they are trying to solve
  - assets that are applicable to their team, role, project or architecture component
  - inconsistent packaging
- ▶ control access to asset

RAM Eclipse  
or Web client



Entitled access

RAM Eclipse  
or Web client



Entitled access

RAM Eclipse  
or Web client



Entitled access



# Search or evaluate an asset – RAM Web UI

The screenshot shows the 'Search for Assets' page. At the top, there is a search bar with a 'Search' button and an 'Advanced search >>' link. Below the search bar, a green bar indicates 'Your search and search results' with '8 assets found'. A table lists the search results with columns for Name, Version, State, Teamspace, and Last modified. On the right side, there is a 'Refine' panel with sections for Type, State, Teamspace, Tags, and Subscriptions.

**Search by keywords**

**Search on specific meta data elements**

**Search using customizable facets such as asset types, state, teamspaces, categorization**

**Search using custom tags you associate with assets**

Name	Version	State	Teamspace	Last modified
<a href="#">CRMService Client</a>	1.0	<a href="#">Approved</a>	Claims IT Project	Oct 10, 2006
<a href="#">CRMService Module</a>	1.0	<a href="#">Approved</a>	Claims IT Project	Oct 10, 2006
<a href="#">ClaimService Client</a>	1.0	<a href="#">Approved</a>	Claims IT Project	Oct 10, 2006
<a href="#">ClaimService Module</a>	1.0	<a href="#">Approved</a>	Claims IT Project	Oct 10, 2006
<a href="#">Customer Data Model</a>	1.0	<a href="#">Approved</a>	Claims IT Project	Oct 10, 2006
<a href="#">Insurance Business Process Model</a>	1.0	<a href="#">Approved</a>	Claims IT Project	Oct 10, 2006
<a href="#">Insurance Individual and Family Web Site Project</a>	1.0	<a href="#">Approved</a>	Claims IT Project	Oct 10, 2006
<a href="#">Policy Data Model</a>	1.0	<a href="#">Approved</a>	Claims IT Project	Oct 10, 2006

8 of 8 assets sorted by name

**Refine**

**Type**  
[Business Process \[1\]](#)  
[Data Model \[2\]](#)  
[Service Client \[2\]](#)  
[Web Site Project \[1\]](#)  
[Service Module \[2\]](#)

**State**  
[Approved \[8\]](#)

**Teamspace**  
[Claims IT Project \[8\]](#)

**Tags**

**Subscriptions**  
[RSS feed](#)  
[Email subscription](#)

# Search or evaluate an asset – RAM Web UI

Search criteria can be combined and are (de)selectable

Aspired [Help](#) | [About](#) | [Feedback](#)

Home My Assets et Preferences Administration Sign out : Master Administrator

Search for Assets > Search

Search for Assets

Search for  Search [Advanced search >>](#)

Your search and search results 1 assets found

Filters:  Type > Service Client  
 Teamspace > Claims IT Project

Name	Version	State	Teamspace	Last modified	Relevance
<a href="#">ClaimService Client</a>	1.0	<a href="#">Approved</a>	Claims IT Project	Oct 10, 2006	

1 of 1 assets sorted by relevance

Refine your search

State  
[Approved \[1\]](#)

Tags

Subscriptions

- [RSS feed](#)
- [Email subscription](#)



# Task: Retrieve and use an asset

## ■ Description

### ▶ Analyst/Architect/Developer do the following:

- indicate the intended use of the asset (further evaluation, or actual use)
- add the asset to their product/project
- import the asset into their IDE workspace

## ■ Pain points

- ▶ don't know how to get started to use the asset
- ▶ how and where asset is putting artifacts in my workspace
- ▶ difficult to determine who is using the asset and where it is being used
- ▶ Inability to plan or implement fix or feature - lack of notification when a new asset is available or has changed
- ▶ difficult to get support - who is responsible for maintaining the asset or where to get help
- ▶ determine which projects, products and assets are impacted by changes to software and non-software related artifacts

RAM Eclipse  
or Web client



RAM Eclipse  
or Web client



RAM Eclipse  
or Web client



# Retrieve and use an asset – RAM Web UI

The screenshot shows the Asset Manager V1.0 M3 Aspired interface. The main content area displays details for an asset named 'ClaimService Client'. A yellow callout bubble points to the 'Download Now!' button with the text: "Select the location for the asset contents to be stored". A Firefox file dialog box is open over the button, titled "Opening ClaimService Client.zip". The dialog shows the file name "ClaimService Client.zip" and its type as "WinZip File". It asks "What should Firefox do with this file?" and has three options: "Open with WinZip (default)", "Save to Disk" (which is selected), and "Do this automatically for files like this from now on." The dialog also includes "OK" and "Cancel" buttons.

**Asset Manager V1.0 M3 Aspired**

Home | My Assets | Search for Assets | Submit an Asset

Help | About | Feedback

Sign out : Master Administrator

Search for Assets >

**ClaimService Client**

General details | Content

**Asset information**

**Name:** ClaimService Client

**My rating:** ★★★★★

**Average rating:** ★★★★★ (0)

**Type:** Service Client

**Version:** 1.0

**Short description:** This service interface

**Description:** This asset contains the

**State:** [Approved ?](#)

**Teamspace:** Claims IT Project

**Owner(s):** [John Walker](#)

**Categories**

**Related assets**

**Depends on**  
[ClaimService Module - 1.0](#)

**Activity**

**Last Update:** Oct 10, 2006

**Downloads:** 0

**Asset Detail Tools**

[Download it](#)

[Update it](#)

[Duplicate it](#)

[Download Now!](#)

**Opening ClaimService Client.zip**

You have chosen to open

**ClaimService Client.zip**

which is a: WinZip File  
from: http://127.0.0.1:8080

What should Firefox do with this file?

Open with WinZip (default)

Save to Disk

Do this automatically for files like this from now on.

[OK](#) [Cancel](#)

[Add](#)

# Task: Create and package asset

- Description
  - ▶ {Precondition} Analyst/Architect/Developer... recurring problem & solution
  - ▶ Analyst/Architect/Developer... do the following:
    - create artifacts for the asset in RAM
    - select the artifacts to be included in the asset
    - enter meta data & classification information
- Pain points
  - ▶ Create
    - Identifying candidate assets
    - Harvesting asset artifacts
    - Without understanding context for reuse
  - ▶ Package
    - inconsistent organization for assets, the information captured, their classification, and entitlements so that they can be used by others.
    - Time consuming to package
    - Don't know how to package assets
    - Different packaging needs differ depending on product.

RAM Eclipse  
or Web client

**Analyst**



Entitled access

RAM Eclipse  
or Web client

**Architect**



Entitled access

RAM Eclipse  
or Web client

**Developer**



Entitled access

# Create and package asset – RAM Web UI

Asset Manager V1.0 M3 Aspired [Help](#) | [About](#)

Home My Assets Search for Assets **Submit an Asset** Preferences Administration Sign out : Master Adm

### Submit an asset

Describe Categorize Associate Attach Confirm

\* Asset name

\* Version

\* Teamspace  ▼

\* Short description

Description

Tags

\* Type  ▼

Creation time   ▼

Usage time   ▼

Next **Save as draft** Submit Cancel

Fill out asset meta data, select artifacts and "Save as draft"

# Task: Submit asset

- Description
  - ▶ [Precondition] Analyst/Architect/Developer... have developed artifacts
  - ▶ Analyst/Architect/Developer... do the following:
    - create an entry for the asset in RAM
    - refine meta-data & define asset entitlement
- Pain points
  - ▶ inconsistent organization for assets, the information captured, their classification, and entitlements so that they can be used by others.
  - ▶ Manually storing and manages assets
  - ▶ Inconsistent registering of assets
  - ▶ Different packaging needs differ depending on product.
  - ▶ Team members don't know when there are new assets or updates
  - ▶ Difficult to understand asset technical context, inter-relationships and dependencies because it isn't defined or communicated

RAM Eclipse  
or Web client

**Analyst**



Entitled access

RAM Eclipse  
or Web client

**Architect**



Entitled access

RAM Eclipse  
or Web client

**Developer**



Entitled access



# Submit asset – RAM Web UI

Asset Manager V1.0 M3 Aspired
Help | About | Feedback

Home My Assets **Search for Assets** Submit an Asset Preferences Administration
Sign out: Master Administrator

Search for Assets >

## Tax Calc Service Client

**General details**

Content

Rate and discuss

Statistics

**Asset information**

**Name:** Tax Calc Service Client Download Now!

**My rating:** ★★★★★

**Average rating:** ★★★★★ (0 ratings)

**Type:** Service Client

**Version:** 1.0

**Short description:** Calculates tax implications on claims

**Description:**

**State:** [Draft ?](#)

**Teamspace:** Claims IT Project

**Owner(s):** [Master Administrator](#)

**Categories**

**Business Solutions**

- [Sector](#)
- [Financial Services](#)
- [Sector](#)
- [Financial Services](#)
- [Tax](#)

**Asset Detail Tools**

[Download it](#)

---

[Update it](#)

[Duplicate it](#)

[Delete it](#)

---

[Email it](#)

[Rate it](#)

**Review Actions**

[Review status](#)

[AS-IS Provide AS-IS](#)

[Submit for approval](#)

**Tags**

[Add](#)

**Subscriptions**

[RSS feed](#)

[Email subscription](#)

**Review Process Information**

[Service Client Review](#)

[Service Client](#)

[Individual Reviewers \[1\]](#)

**Related assets**

Activity	Last Update:	
	Downloads:	0
		Oct 19, 2006

Select "Submit for approval" to submit the asset

# Task: Review & approve asset

- Description
  - ▶ [Precondition] Analyst/Architect/Developer... have submitted an asset
  - ▶ Review
    - Asset Manager or review board does the following:
      - determines and notifies asset reviewers
    - Asset Reviewer does the following:
      - reviews the asset
      - submit asset review
    - Asset Manager or review board approve
      - evaluates the submitted reviews
      - approves or rejects the asset for publishing
    - System notifies the submitter/author/producer/owner/reviewers
- Pain points
  - ▶ Needs assets which have been validated and verified for a specified context and scope of reuse
  - ▶ Needs assets which have met enterprise rules, policies and governance
  - ▶ Lack of awareness of where the asset is in the workflow
- This offering will provide the ability to ...
  - ▶ Out of the box default workflow
  - ▶ Capture review process information
  - ▶ Send workflow email notification



# Asset Review Process

- Teamspace administrator can set up review processes per asset type and category

## TeamSpace Administration

Users Roles **Review processes**

TeamSpace Enterprise Architects

**Review Processes**

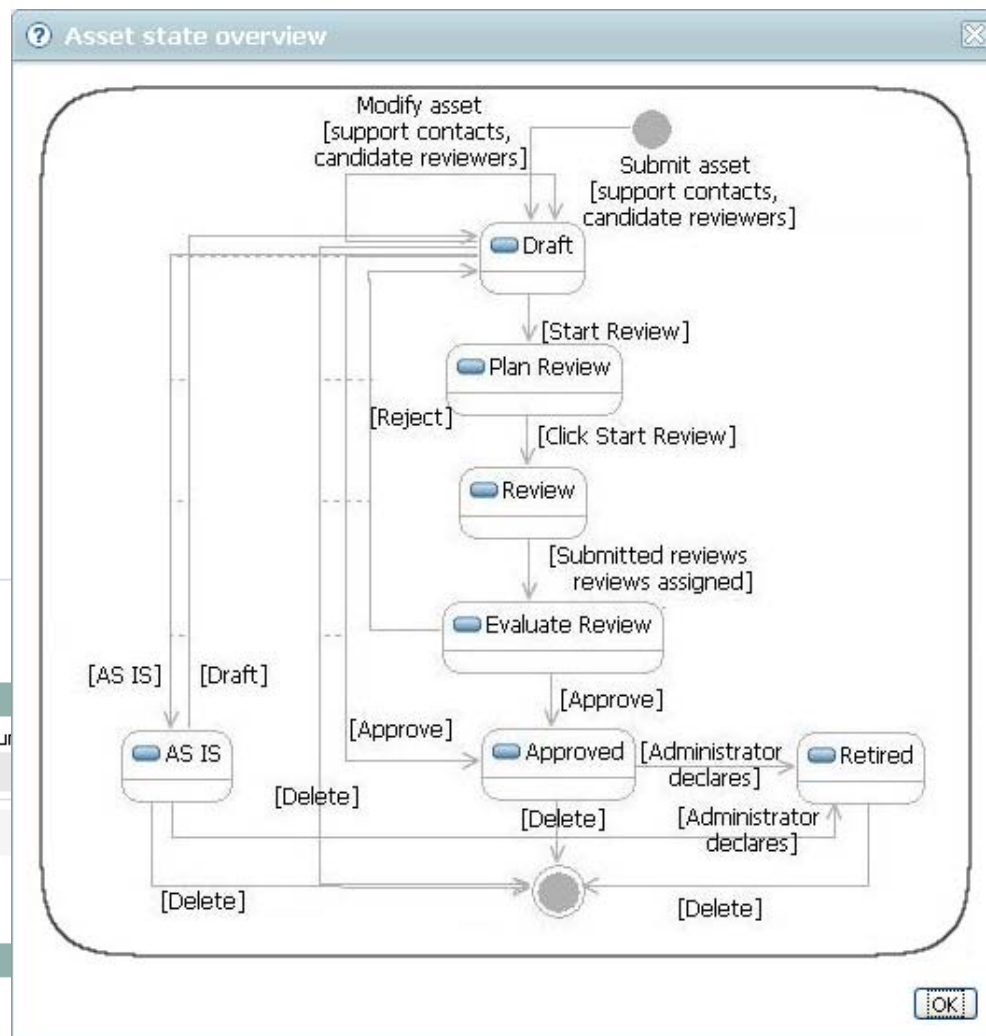
Order review processes in decreasing priority, where the first review process to match the minimum

<input checked="" type="checkbox"/>	<input type="checkbox"/>	Review process	Conditions
Move up	Move down	Delete	Create new review process

**AS-IS configuration**

Administrator approval required to provide asset AS-IS

Save Cancel





# Review & approve asset – RAM Web UI

The screenshot shows the 'Asset Manager V1.0 M3 Aspired' interface. At the top, there is a navigation bar with 'Home', 'My Assets', 'Search for Assets', 'Submit an Asset', 'Preferences', and 'Administration'. Below this, a 'Summary' section shows 'Submitted a' and a breadcrumb 'My Assets > Summary'. A table titled 'Assets to review' contains one entry: 'Tax Calc Service Client' with version '1.0', type 'Service Client', and teamspace 'Claims IT Project'. A yellow callout bubble points to this entry with the text: 'The reviewer selects the asset to review from the My Assets page'. Below the table, the 'Tax Calc Service Client' details are shown under the 'General details' tab. The details include 'Name: Tax Calc Service Client', 'My rating: ★★★★★', 'Average rating: ★★★★★ (0 ratings)', 'Type: Service Client', 'Version: 1.0', and 'Short description: Calculates tax implications on claims'. A 'Download Now!' button is visible. On the right side, there is a 'Review Actions' menu with options like 'Update it', 'Duplicate it', 'Delete it', 'Email it', 'Rate it', and 'Review it'. A yellow callout bubble points to the 'Review it' option with the text: 'The reviewer selects "Review it" from the asset details screen'.

# Review & approve asset – RAM Web UI

The screenshot shows the 'Asset Manager V1.0 M3 Aspired' web interface. At the top, there are navigation tabs: Home, My Assets, Search for Assets, Submit an Asset, Preferences, and Administration. Below these are sub-tabs: Summary, Submitted assets, Downloaded assets, Subscriptions, and Tags. The main content area displays asset details for 'The Tax Calc Service Client'. A 'Review' section is highlighted, showing 'Review as role:' set to 'Individual Reviewers [1]'. A 'Claim Review' link is visible below the role selection. A yellow callout bubble points to this link with the text: 'The reviewer claims the review, reducing the number of reviews that need to be completed on the asset'.

The screenshot shows a dialog box for reviewing the asset 'The Tax Calc Service Client'. It includes a 'Comments:' text area and a 'File:' field containing 'Review\_TaxCalcService'. At the bottom, there are three buttons: 'Save as draft', 'Accept', and 'Reject'. The 'Accept' button is highlighted with a yellow callout bubble that says: 'The reviewer conducts the review and Accepts or Rejects the asset'. A mouse cursor is shown clicking the 'Accept' button.

# Task: Measure asset activity

- Description
  - ▶ [Precondition] Asset submitted & may have activity
  - ▶ Administrator does the following:
    - Generate metrics reports
- Pain points
  - ▶ Management needs to quantify activity level, benefits realized, return on investment & quality
- This offering will provide the ability to ...
  - ▶ Capture asset production effort
  - ▶ Capture expected reuse & actual consumption effort)
  - ▶ Capture downloads, submissions, approvals,
  - ▶ Generate derived metrics ( ROI, productivity, cost savings...)
  - ▶ Reporting and charting metrics
  - ▶ To report on asset defects stored in ClearQuest

RAM Eclipse  
or Web client

**TeamSpace  
Administrator**



Entitled access

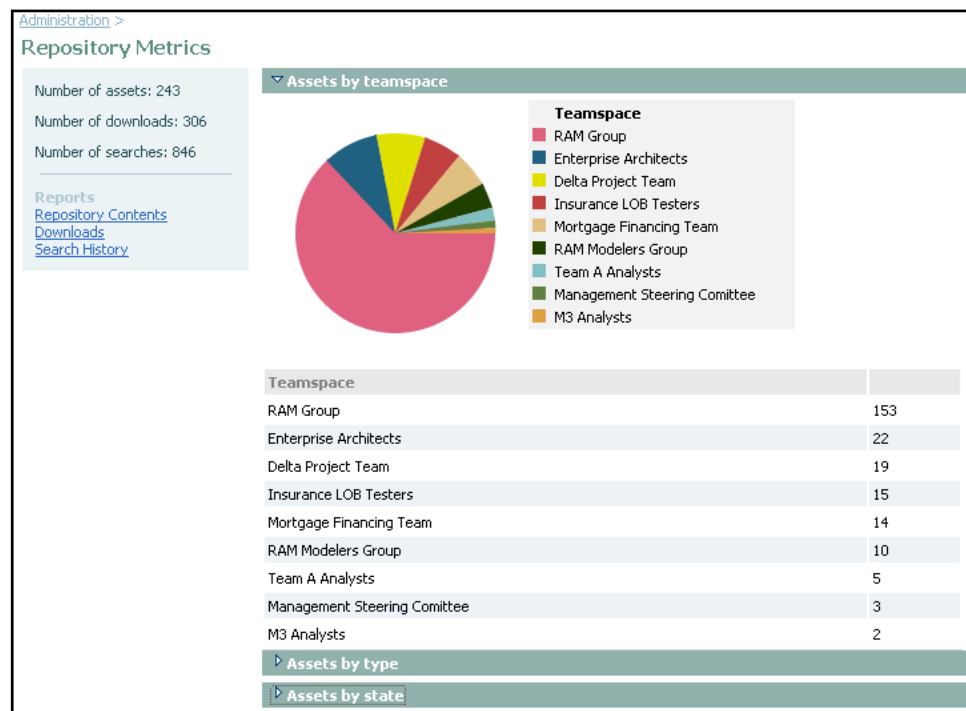
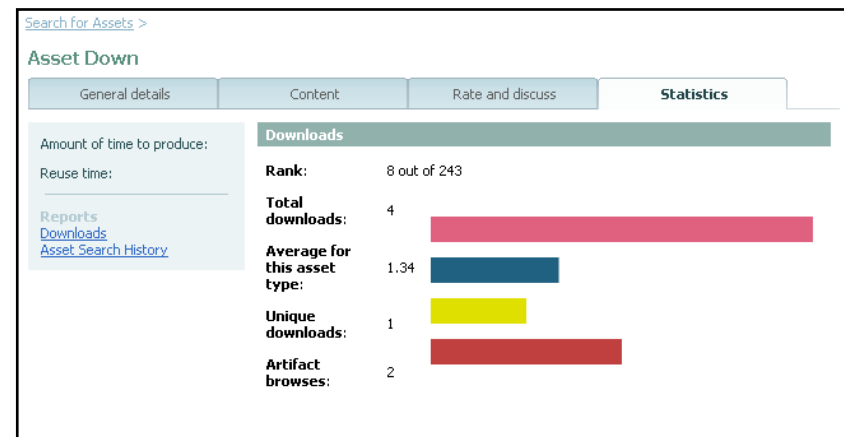
RAM Web  
client  
**Business  
Manager**



Entitled access

# Measure Asset Activity

- Metrics and reporting are supported in RAM
  - ▶ Asset Level Reports
    - Downloads, browses, feedback and ratings
  - ▶ Repository Level Reports
    - Assets by teamspace, type, and state
    - Search History
    - Downloads



# Task: Modify and create new asset version

- Description
  - ▶ [Precondition] Analyst/Architect/Developer... existing asset.
  - ▶ Analyst/Architect/Developer... do the following:
    - selects existing asset in RAM
    - modifies asset properties and saves changes
    - indicates if a new version is required
- Customer pain points
  - ▶ Lack of notification when a new version of an asset is available
  - ▶ Difficulty tracking multiple versions of an asset
  - ▶ Difficulty tracking usage of different asset versions
  - ▶ Difficult to understand when and how assets changed and what artifacts were changed
  - ▶ Time wasted to setup a workspace to fix or enhance asset
- This offering will provide the ability to ...
  - ▶ Get email notification RSS feed of when there are new asset versions.
  - ▶ Update asset contents, descriptions, metadata and other properties
  - ▶ Version assets in ClearCase or CC Multisite
  - ▶ Create a CQ change request from RAM asset details
  - ▶ Have assets refer to artifacts by reference in ClearCase or CVS
  - ▶ Invoke an asset meta data diff between 2 versions of an asset
  - ▶ Recreate and populate a workspace with asset contents from ClearCase by reference or RAM.
- Key technology or integration components
  - ▶ Optionally ClearCase, ClearQuest, CVS

RAM Eclipse  
or Web client

**Analyst**



provided access

RAM Eclipse  
or Web client

**Architect**



provided access

RAM Eclipse  
or Web client

**Developer**



provided access

# Modify and create new asset version – RAM Web UI

Asset Manager V1.0 M3 Aspired

Home My Assets Search for Assets Submit an Asset Preferences Administration

Search for Assets >

### Tax Calc Service Client

General details Content Rate and discuss Statistics

**Asset information**

**Name:** Tax Calc Service Client [Download Now!](#)

**My rating:** ★★★★★

**Average rating:** ★★★★★ (0 ratings)

**Type:** Service Client

**Version:** 1.0

**Short description:** Calculates tax implications on claims

**Asset Detail Tools**

- Download it
- Update it**
- Duplicate it
- Delete it
- Email it
- Rate it

**Review Actions**

- Review status
- Retire it

Enter the new asset version #, update the asset content and other meta data and submit

Asset Manager V1.0 M3 Aspired

Home My Assets Search for Assets Submit an Asset Preferences Administration

Search for Assets > General details >

### Update "Tax Calc Service Client"

Describe Categorize Associate

Asset name: Tax Calc Service Client

\* Version: 2.0

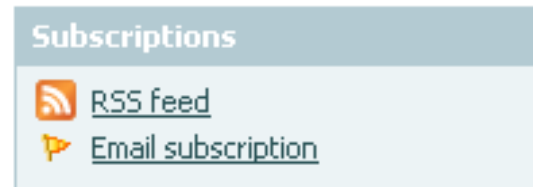
\* Teamspace: Claims IT Project

\* Short description: Calculates tax implications on claims



# Notifications

- Email and RSS Notification are supported
- Notifications can optionally occur when:
  - ▶ An asset is submitted / updated
  - ▶ Review state of an asset is changed
- Search subscriptions are also supported
  - ▶ Notified periodically of search results
  - ▶ Discussions group

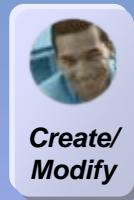


# Define, Create, Modify & Review Asset Interactions

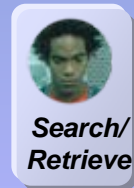
## Service Development



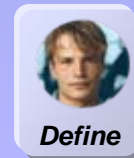
(4) Manager reviews and approves asset using a customizable development workflow ClearQuest. RAM enforces asset types and relationships.



(3) Developer creates, modifies or learns about assets in Eclipse workspace using RAM with ClearCase & ClearQuest



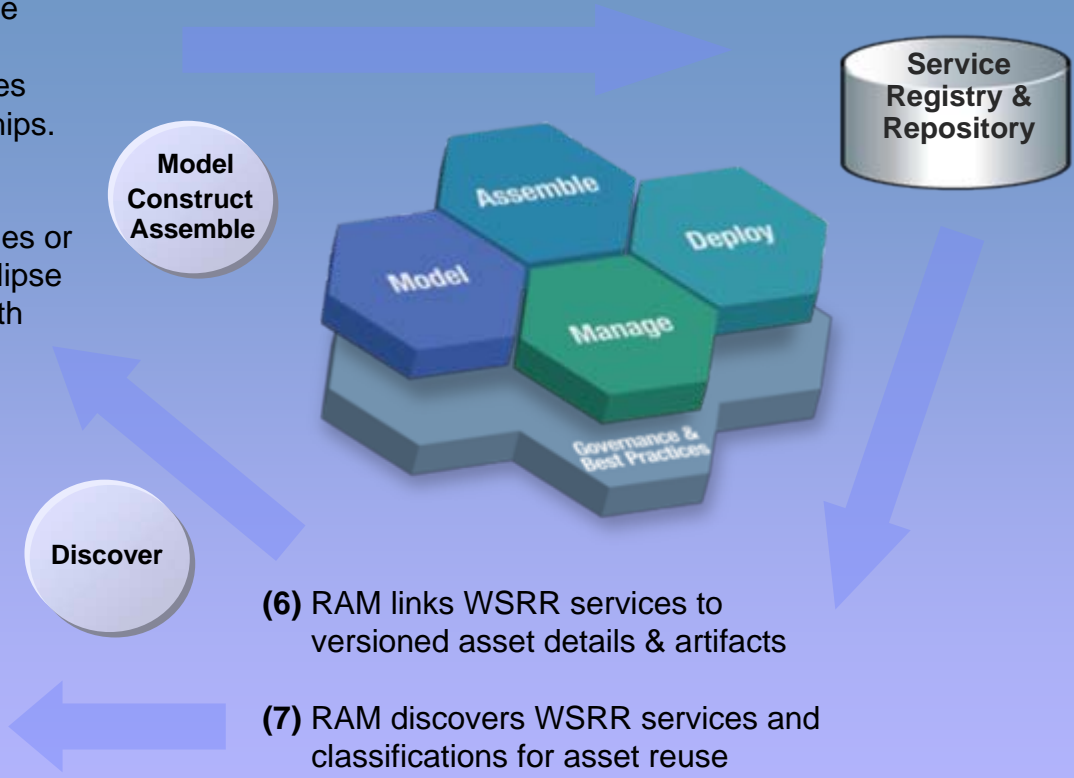
(2) Developer searches RAM for assets to reuse



(1) Architect defines asset types, categorizations and review boards in RAM for asset reuse

(5) Technical manager publishes service asset interface from RAM to WSRR

## Service Deployment

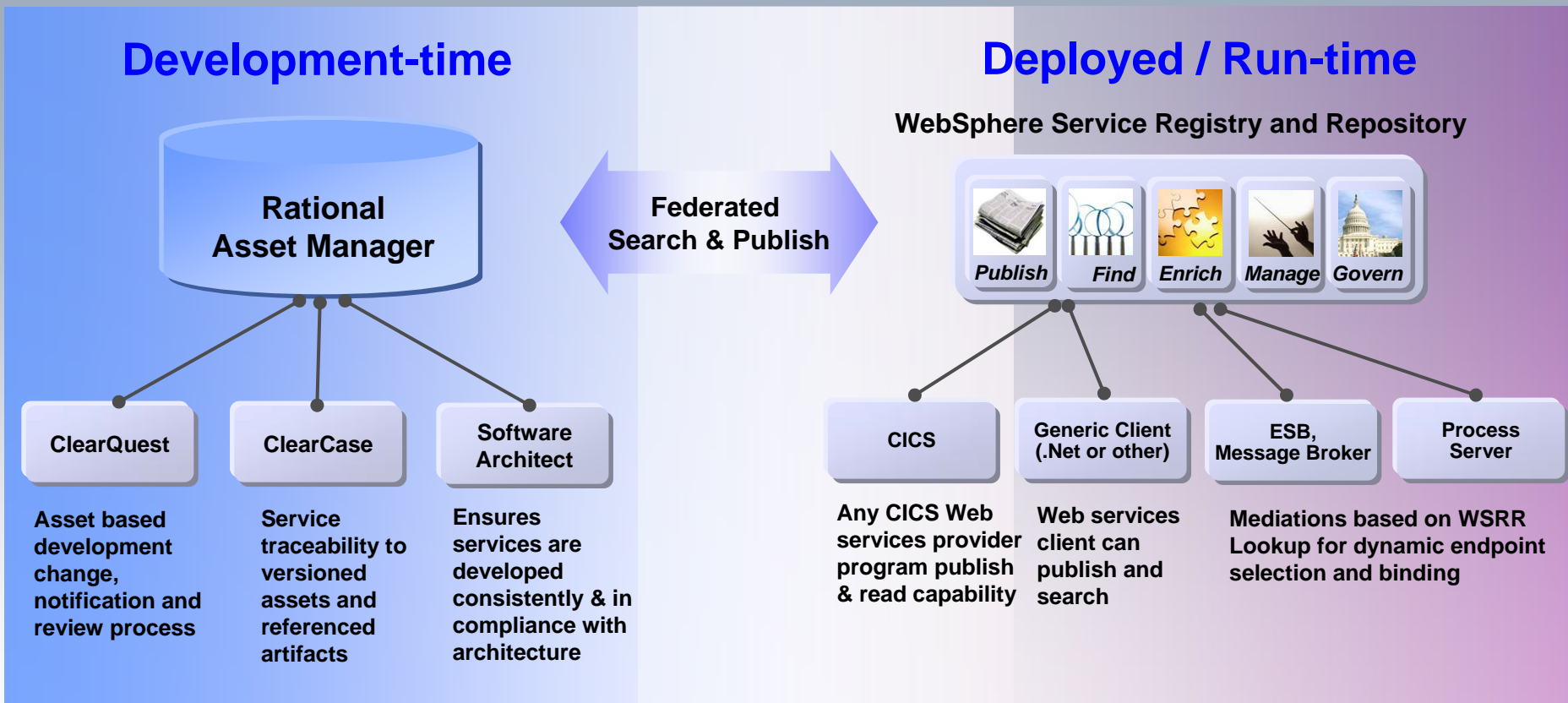


(6) RAM links WSRR services to versioned asset details & artifacts

(7) RAM discovers WSRR services and classifications for asset reuse



# Bridging Development and Runtime Services with RAM & WSRR



- Not every deployed service is a reusable asset and not every reusable asset is a deployed service
- Managing development of assets vs. operational metadata for services
- A service is one of many types of assets managed by Rational Asset Manager

# Summary

- Asset reuse is becoming critical
  - ▶ Reduce software development costs
  - ▶ Improve quality by facilitating the reuse
  - ▶ Enable Globally Distribute Development
  
- Rational Asset Manager provides the tools integrated with industry leading processes required for successful asset reuse!

# Agenda:

- Introduction: SOA and the Service Lifecycle
- Planning and Modeling Services With SOMA
- Managing Service Development and its Assets
- Managing Services in the Operational Environment
- Governance and SOA Quality Management
- Summary and Resources

# 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**

# 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

# A Registry Repository Answers Questions Customers 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?**

# WebSphere Service Registry and Repository (WSRR)

## What is it?



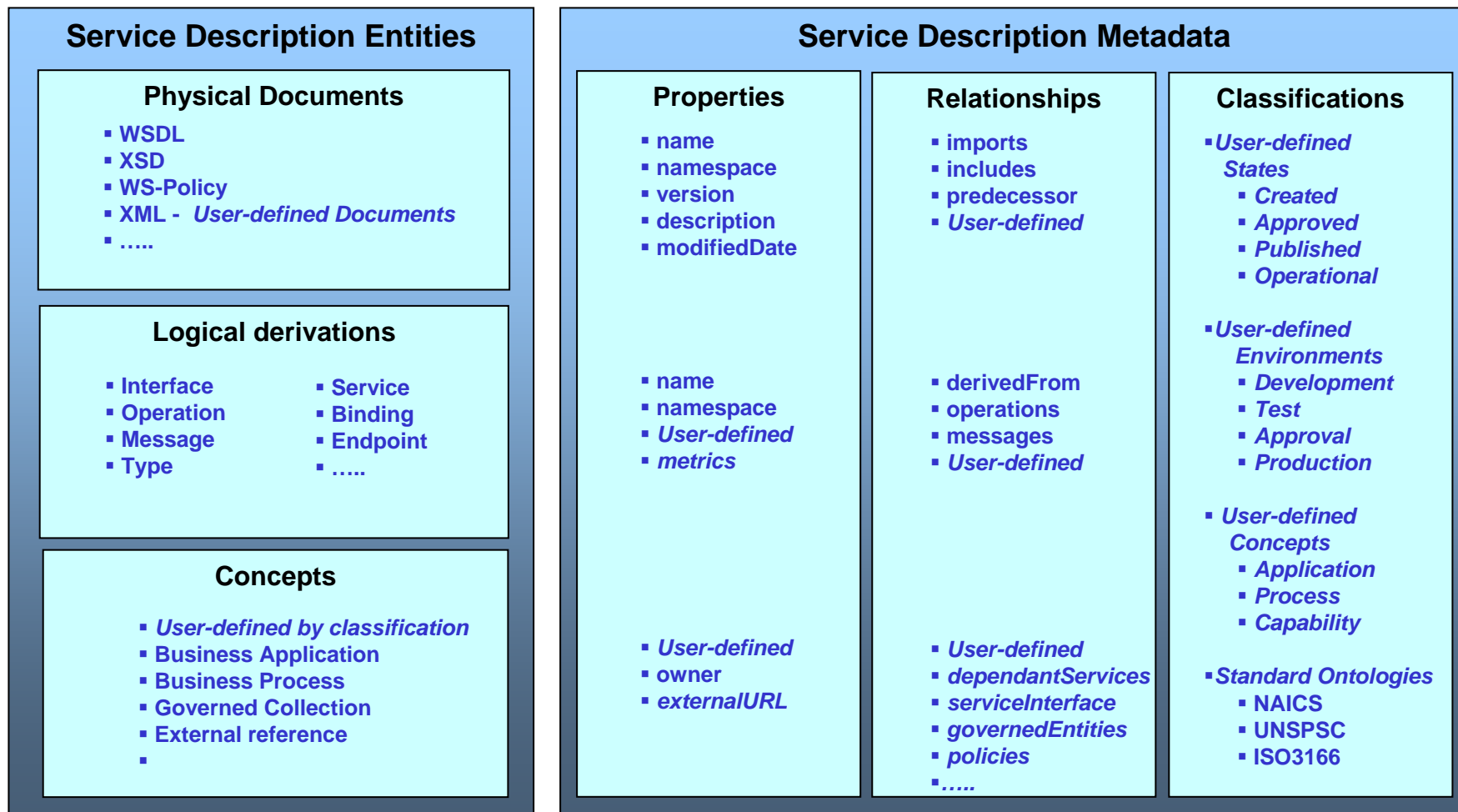
- A solution to securely register business services for finding, publishing and notifying changes to SOA infrastructure components.
- House the metadata about business services in managing the lifecycle of a service in SOA

## 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 Sorts of Meta-data?



# WSRR Capabilities



## ***Encourage Greater Reuse***

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

### ***Publish and find...***

- **Services descriptions and capabilities**
- **Service interactions, dependencies and redundancies**
- **Service lifecycle stage**
- **Policies for service usage**

# How it's Used: Greater Reuse of Services

Business need for a service is initiated



**"Find" for availability**

## WebSphere Service Registry and Repository



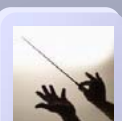
**Publish**



**Find**



**Enrich**



**Manage**



**Govern**

### If the service exists...

- 1) Service owner contacted
- 2) Owner performs impact analysis
- 3) WSRR updated
- 4) Service is reused

### If the service exists but requires modification...

- 1) Service owner agrees to modify the service
- 2) Performs impact analysis
- 3) Service is altered and a new version is published  
*(owner may also trigger a custody transfer)*
- 4) Services asset is reused

### If the service does not exist...

- 1) Governance process initiates new service development
- 2) "In-progress" service is recorded in the WSRR
- 3) Community is notified to eliminate redundant service development

# How it Works: Publish and Find Interactions



(1) Search is performed for a service or mediation or policy to (re)use

(3) Service metadata artifact is published to the WSRR

(4) WSRR performs validation and enforces policies

(5) Search is performed for a service or mediation or policy to use

(7) The assembled service is (re) published using the Service Explorer during deployment.



(2) Development tools are used to create a new service metadata artifact

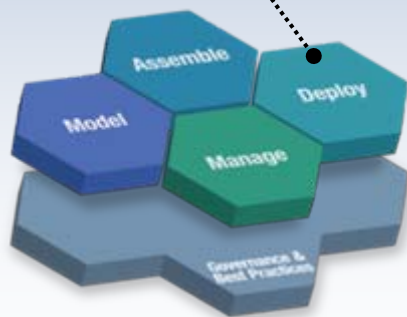


(6) The service is configured/wired and policy relationships are established.

# WSRR Capabilities



**Enrich**

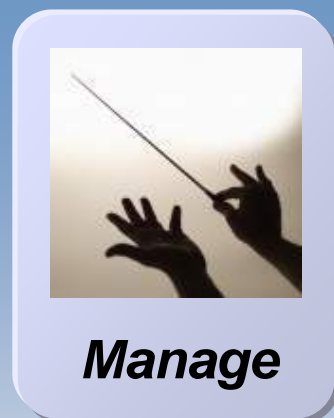


## ***Enhance Connectivity***

Enable dynamic and efficient interactions among services at runtime.

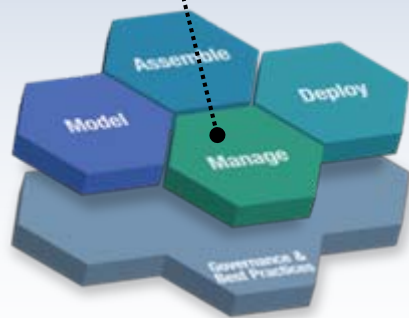
- **Manage dynamic and efficient access to services information by runtimes**
  - **Service endpoint selection**
  - **Service availability management**
  - **Policy enforcement**
- **Identify users of metadata**
- **Notify users of changes**
- **Securely transmit service information**

# IBM WebSphere Service Registry and Repository



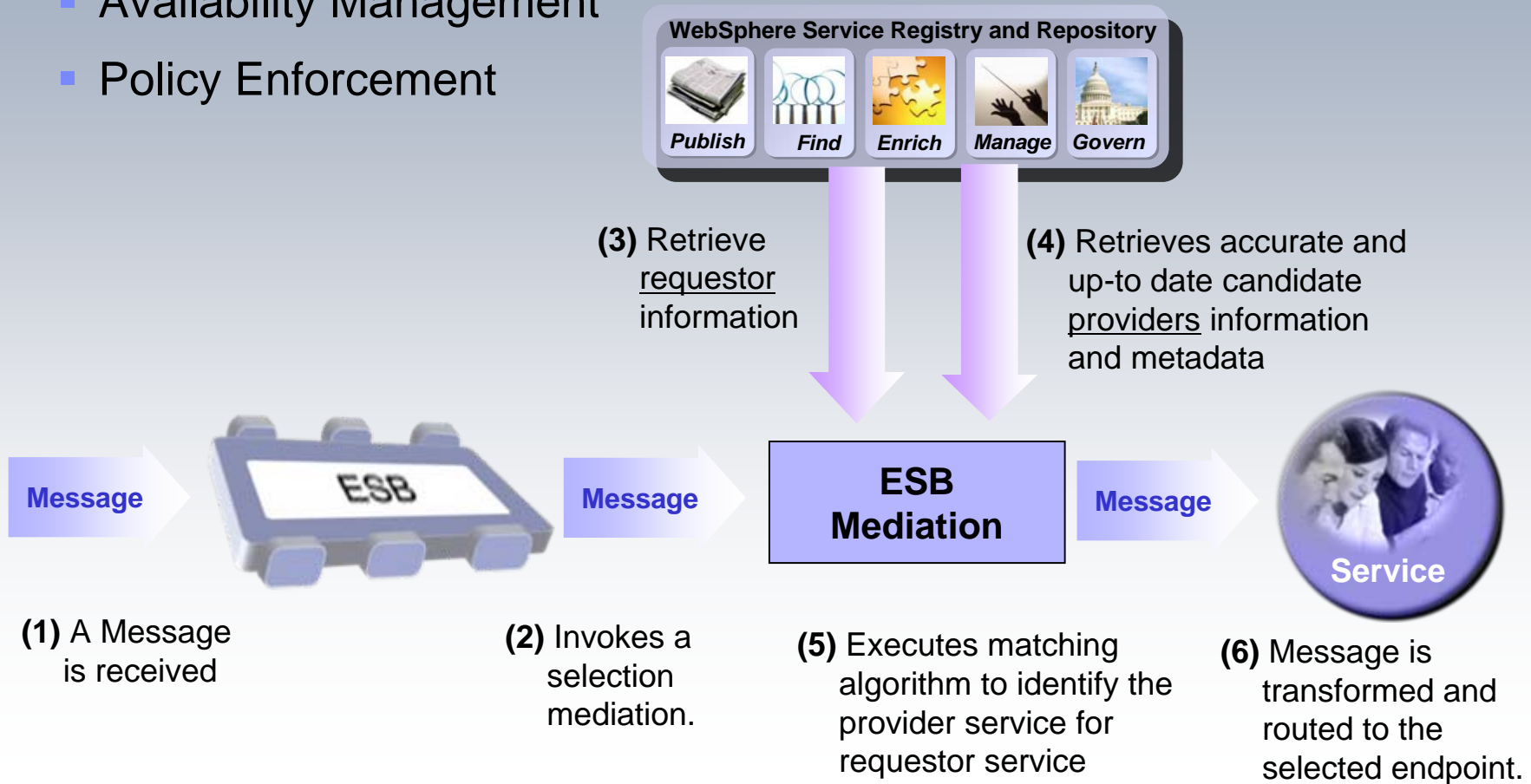
## Help optimize service usage and performance

- Manage service interactions, dependencies, relationships and redundancies
- Classify services into meaningful groupings based on business objectives
- Manage policies for service usage and governance
- Manage change and versioning of services
- Analyze services usage, history and business impact
- Promote and encourage optimal services usage



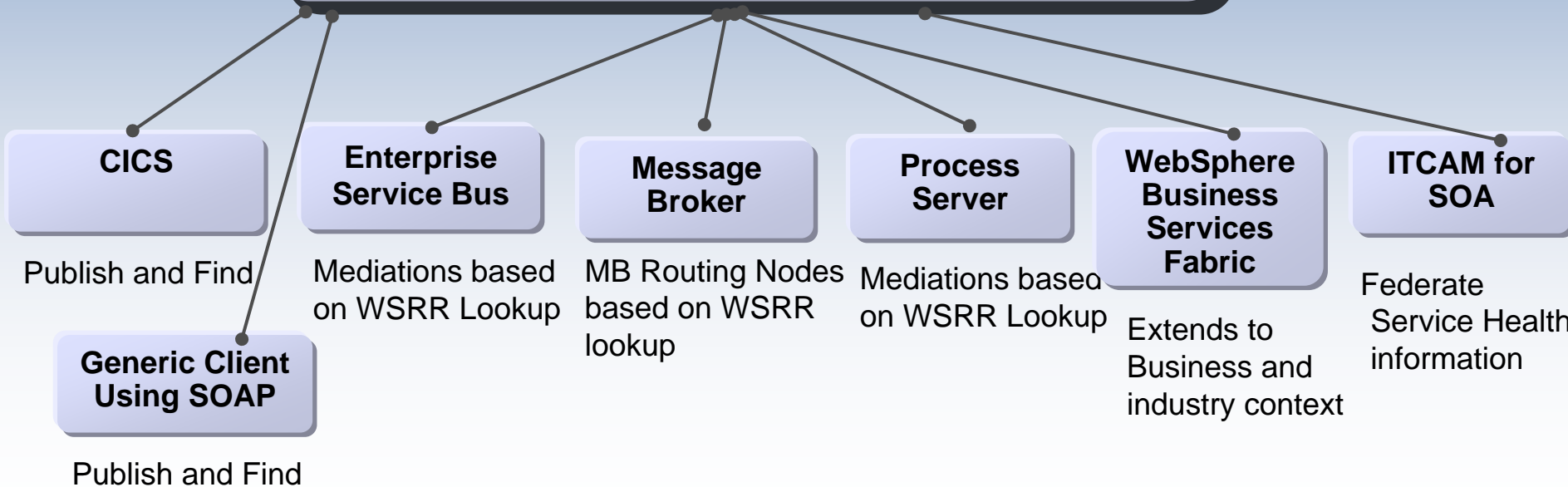
# How it works: Runtime selection and invocation interactions

- Dynamic Selection
- Availability Management
- Policy Enforcement





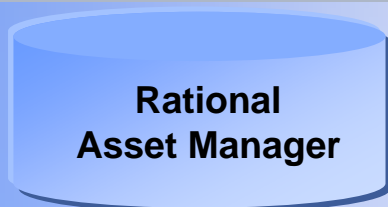
# WSRR Integration with IBM SOA Products



# RAM and WSRR Functionality

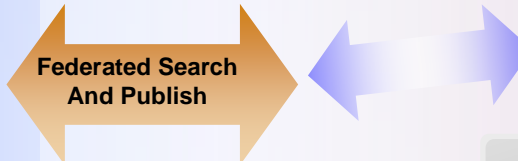
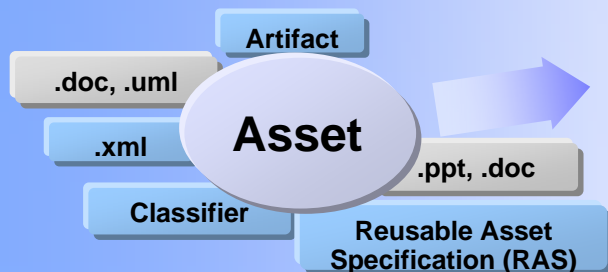
## Development-time

### ➤ Design / Architecture Governance



Manages information that is useful for developing, re-using and managing all types of reusable assets

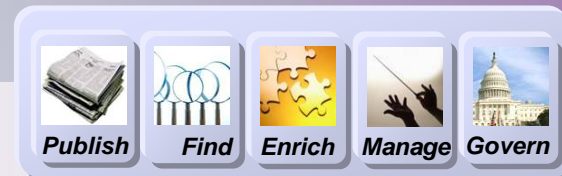
- ✓ Define asset types
- ✓ Create and manage all types of assets
- ✓ Provide asset traceability and details
- ✓ Collaborate on asset development



## Deployed / Run-time

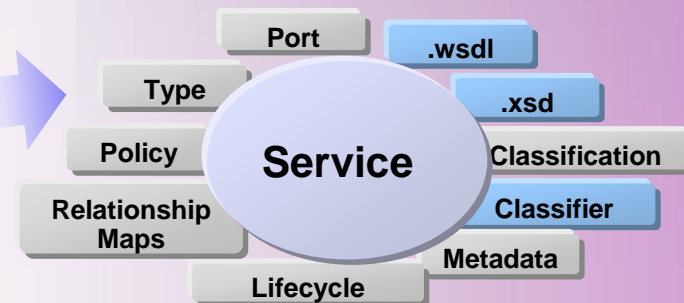
### ➤ Service Lifecycle Governance

WebSphere Service Registry and Repository



Manages information that is useful for the runtime operation, management and development use of services

- ✓ Select service endpoints dynamically in a SOA runtime
- ✓ Govern runtime changes to service metadata
- ✓ Set and get runtime policies for service execution
- ✓ Get deployed service details like endpoints, relationships and service definitions



# Features Summary of WSRR

- User role based browser perspectives
- Standards based service metadata documents support
- “Shredding” documents into meaningful and optimized organization
- Query
  - ▶ Canned and user wizard based search
- Classification
  - ▶ OWL based ontologies
  - ▶ Customization enabling governance capabilities, state transitions, lifecycle actions
- Eclipse based toolset integrating into eclipse 3.x based IDEs
- Java and Web services API
- Command line utilities
- Subscription and Notification support
- Impact Analysis
  - ▶ Service Relationships



# Service Lifecycle Management

[WSRR in a nutshell](#)

# SOA Solutions and Service Lifecycle Management

- Introduction: SOA and the Service Lifecycle
- Planning and Modeling Services With SOMA
- Managing Service Development and its Assets
- Managing Services in the Operational Environment
- Governance and SOA Quality Management
- Summary and Resources

# 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





# What is Governance?

It's all part of Corporate Governance

## 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



***SOA Governance  
is a catalyst  
for improving  
overall IT  
governance***



# Existing IT Governance Standards

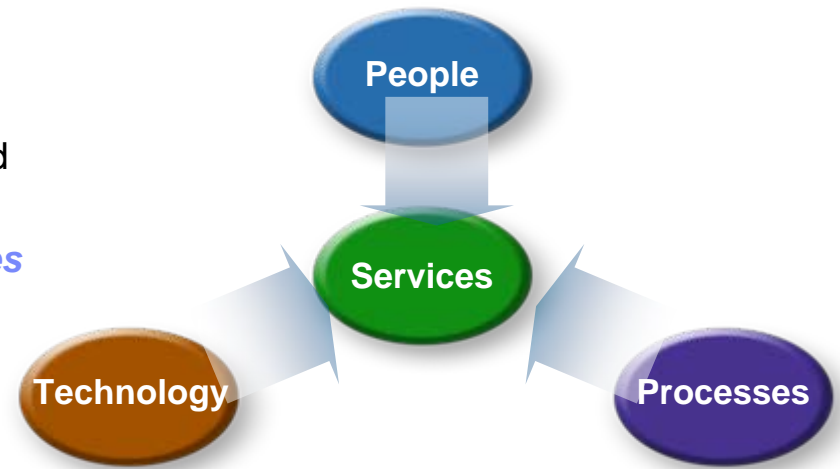
- COSO – Committee of Sponsoring Organizations
  - ▶ Primarily financial, accounting and auditing related professional organizations
  - ▶ Developed integrated control framework to in response to financial scandals in the late seventies framework was released in the early eighties
  - ▶ Have recently developed Enterprise Risk Managed framework; released in September 2005
- CoBIT – Control Objectives for Information and Related Technology
  - ▶ From IT Governance Institute – professional organization of Information Technology professional
  - ▶ Developed framework designed to provide guidance for governance of an IT organization in the mid eighties

# SOA Governance and Management

**Encompasses the set of services, policies, and best practices which enable IT organizations to gain visibility into their SOA, drive reuse of services, define and enforce policies, and manage the life cycle of services**

The governance model defines:

- ▶ What has to be done? The Service *lifecycle*
- ▶ How is it done? The governance *decision* path based processes
- ▶ Who has the authority to do it? As defined by the *roles and responsibilities* of the Service lifecycle processes
- ▶ How is it measured? The vitality and conformance *checkpoints*



**The focus of SOA is the  
*Services Model***

## **Governance is enabled by management**

- ▶ Governance determines who has the authority to make a decisions
- ▶ Management is the process of making and implementing the decisions



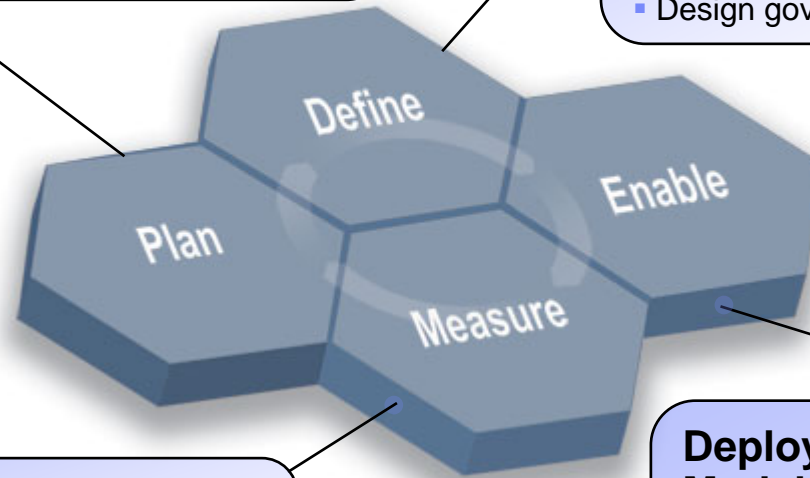
# SOA Governance Lifecycle

## Establish 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

## Deploy the Governance Model Incrementally

- Deploy governance mechanisms
- Deploy governance IT infrastructure
- Educate and deploy on expected behaviors and practices
- Deploy policies

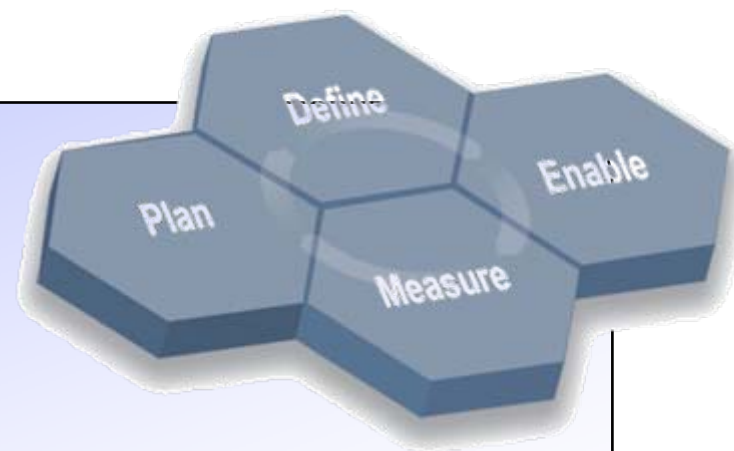
# Why SOA Governance matters

- 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



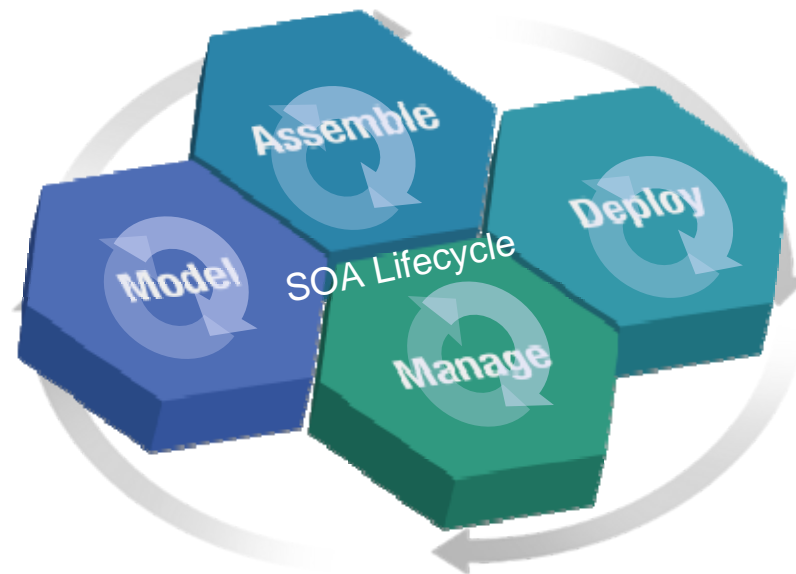
# Summary: How IBM enables SOA Governance

- Methods, process, tools and technology for:
  - Defining/refining governance approach
  - Identifying high value business services and instantiating policy and standards
  - Managing the lifecycle of services and other assets
  - Gaining visibility to performance against goals
- Services and expertise to assist across the entire service lifecycle



# Insuring Business Value Throughout the SOA Lifecycle

**SOA Quality Management** is the process to verify services meet functional and operational business requirements



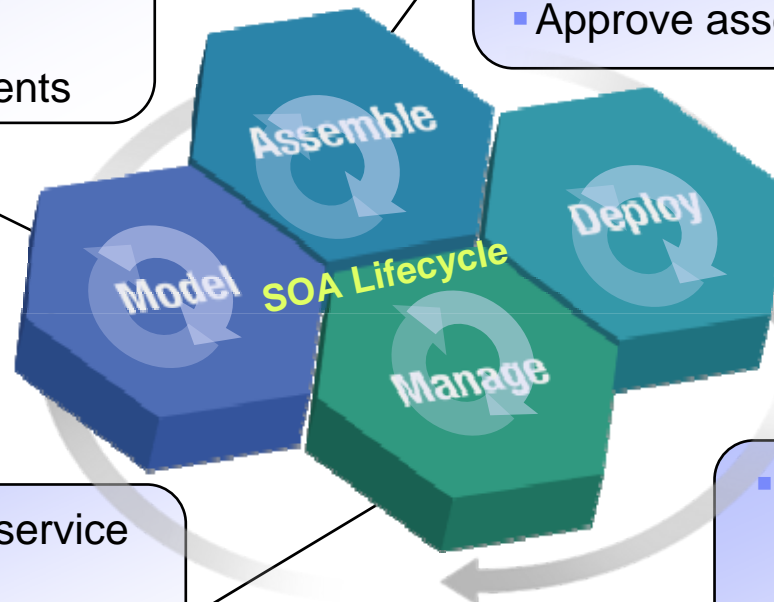
*SOA Quality Management is continuous and takes place across all phases of the SOA Lifecycle*



# When Creating SOA Services, Companies Need to Focus on End-to-End Quality Management Actions

- Validate the functional requirements w/ business
- Discover and assess against current services
- Model functional and performance requirements

- Create service update plan
- Create/Modify the service to meet all the requirements
- Assess service against governance policies
- Approve assembly completion



- Manage & monitor the service through its lifecycle
- Track the service in the registry
- Report on the Service against SLAs



- Quality assure the services
  - Function testing
  - Performance testing
  - Compliance testing
- Approve service deployment



# Multiple Product and Service Organizations Supply SOA Quality Management Support and Functionality

## New and enhanced capability

### *Requirements driven testing*

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

### *Service Quality Analysis*

- Tivoli Composite Application Manager (ITCAM)

### *Getting started assistance*

- GTS Quality Management Services 

### **Change & Release Management**

- Effectively manage the change and deployment of your SOA environment

### **Quality Management**

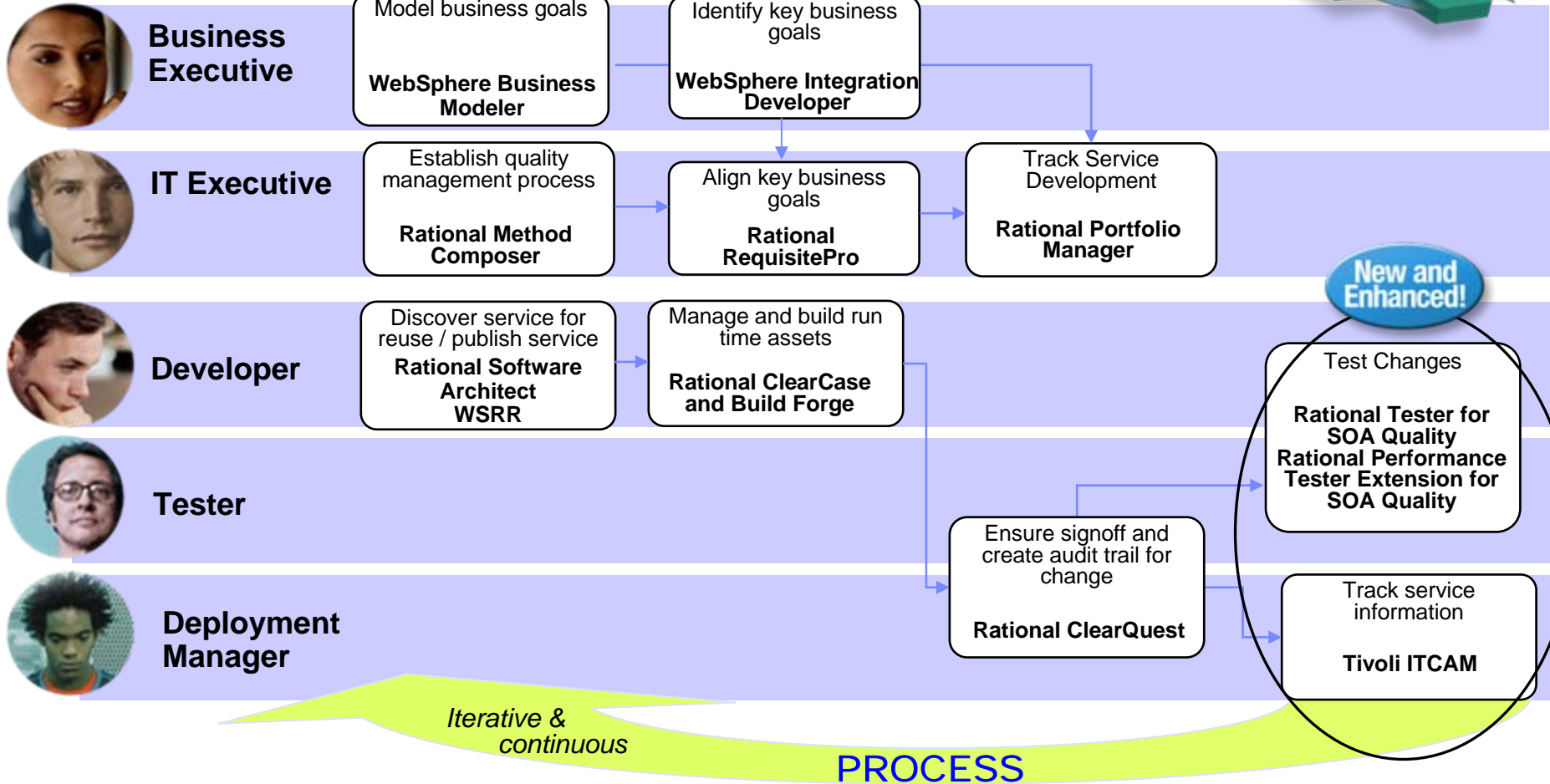
- Clarify IT alignment with business requirements and assure functional and performance compliance

### **Architecture Management**

- Ensure adherence to sound design and development principles

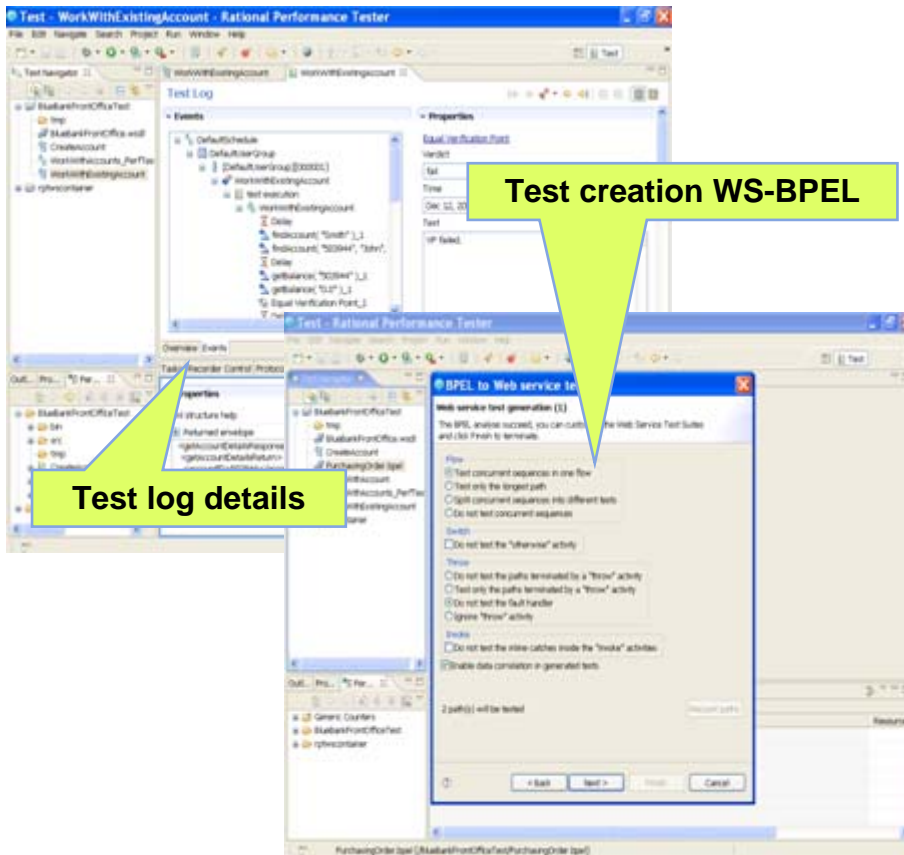


# SOA Quality Management Enabling Tools Enhance Each Team Member's Ability to be Successful



# IBM Rational Tester for SOA Quality

## Code Free Test of GUI-less Web Services



- **Simplify testing of GUI-less service**
  - ▶ Automated generation of web service test client
- **Eliminate need for manual coding**
  - ▶ Automated data correlation and data driven testing through a code-free test environment
  - ▶ Supporting wide variety of users on a broad range of platforms
- **Simplify service integration testing**
  - ▶ Automated test creation from WebSphere BPEL resources
- **Create, comprehend, modify, and execute a functional or performance test**
  - ▶ Graphical test editor enables both high-level and deeper detail views
  - ▶ Supports Web services standards (e.g. SOAP, HTTP(S), JMS, WS-Security, UDDI)
  - ▶ Supports testing secure web services by means of using XML Signatures.

Targeted at developers and the QA Team

**New!**

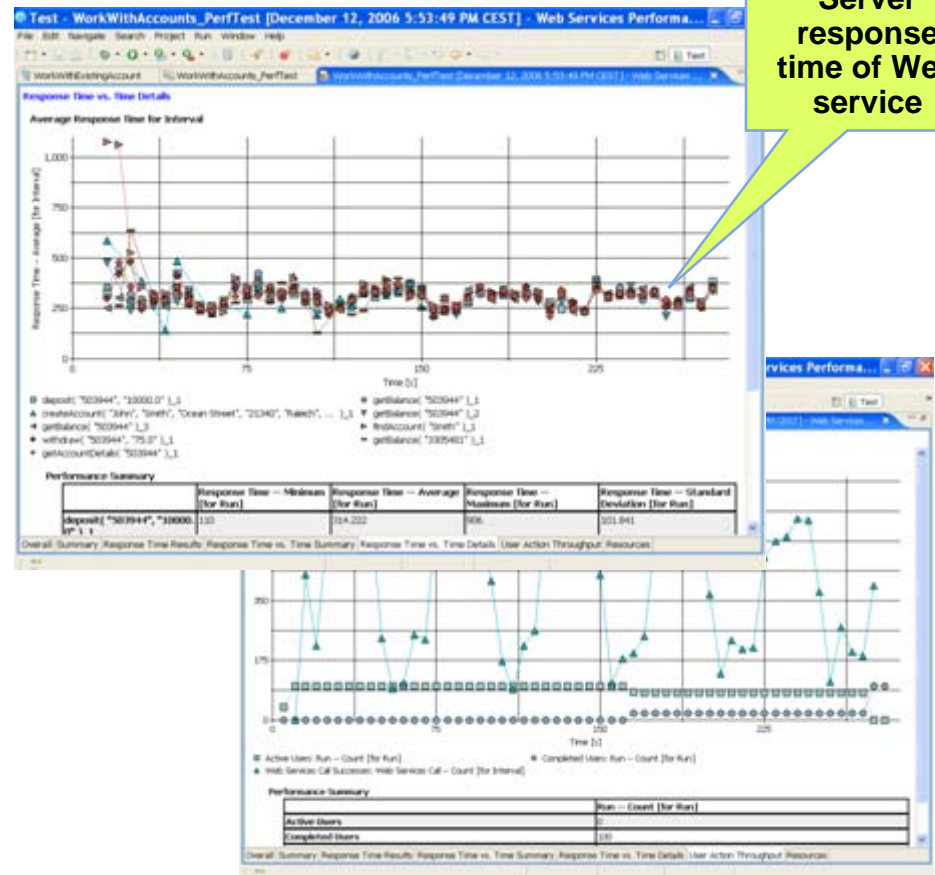
Server response time of Web service

# IBM Rational Performance Tester Extension for SOA Quality

## Web Service Performance Testing and Problem Analysis

All the capabilities of Rational Tester for SOA Quality plus:

- **Validate system scalability**
  - ▶ Flexible workload modeling enables automated generation of web service test client
  - ▶ Automated generation of web service performance tests
  - ▶ Real-time reporting of server response time and throughput



Targeted at performance engineers



# Operationally Manage Service Quality With New Features of Tivoli Composite Application Management (ITCAM)

## ■ Performance Monitoring and Transaction Management

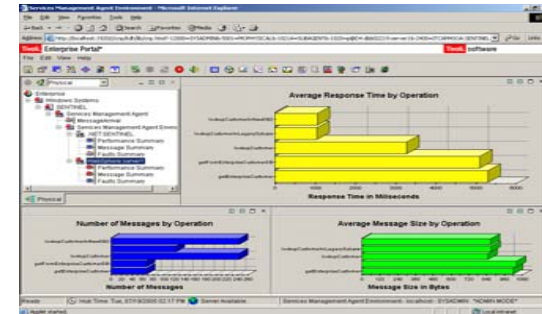
- ▶ Populate WSRR with live service performance data
- ▶ Real time integration with Rational testing tools
- ▶ **NEW!** Response Time dashboards

## ■ Change and Configuration management

- ▶ DataPower configuration support
- ▶ Reroute **services** by making changes and upgrades while staying in full production mode
- ▶ Auto-discover services for populating WSRR with services information

## ■ Health Monitoring of SOA components – ESB, Process Server, DataPower

- ▶ **NEW!** Application Management dashboards for IT and business reporting supports Web Services, ESB and Process Server

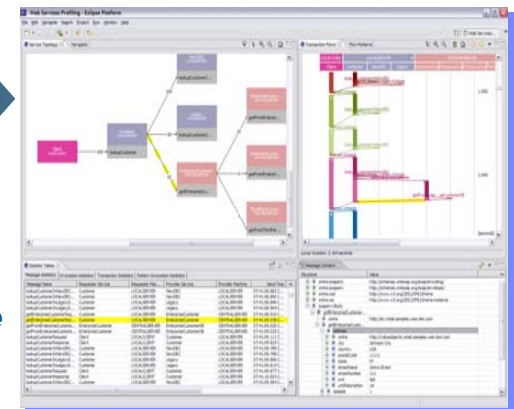


*ITCAM supports production and development needs with a unified console!*



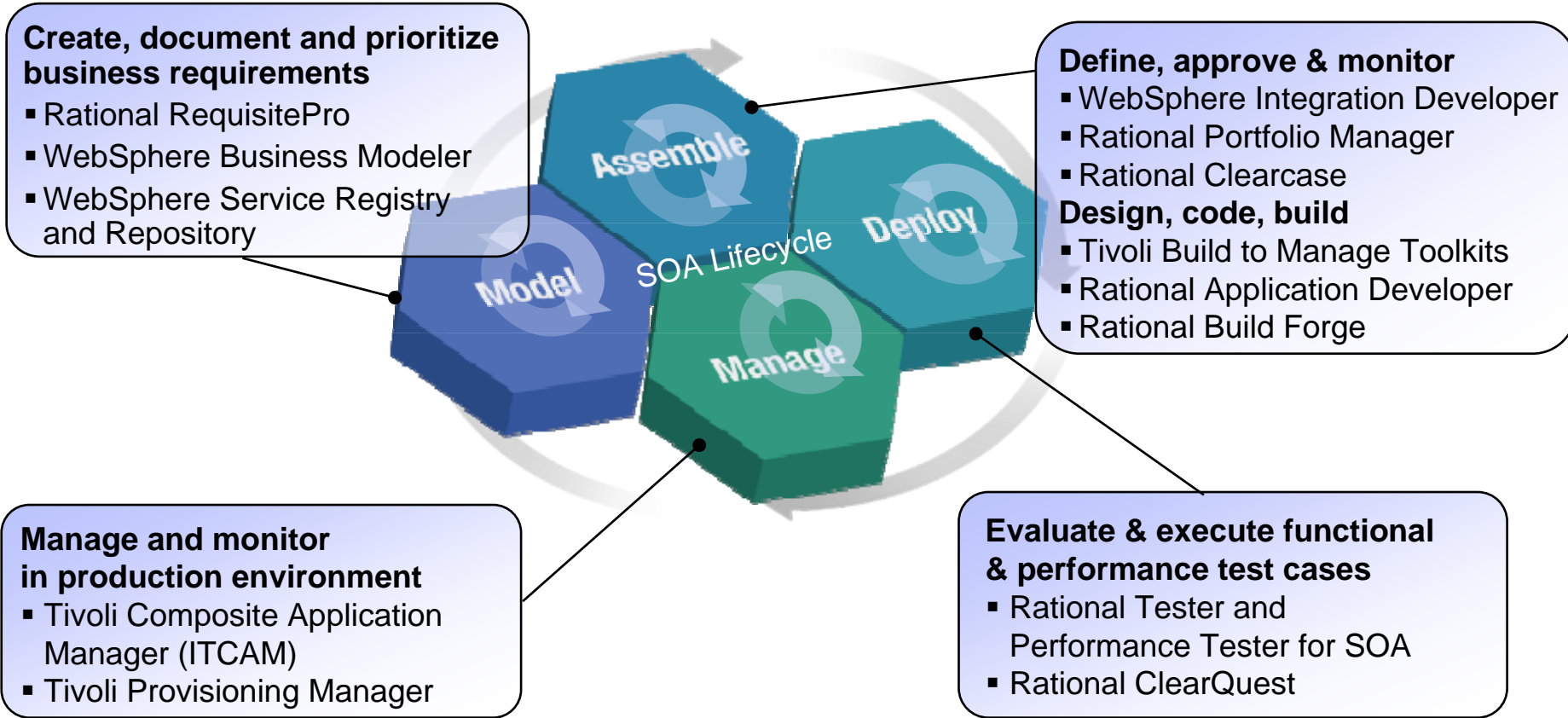
Web Services Expert

*“Show me the flow details in my service development tool!”*



# IBM Supplies SOA Quality Management Enabling Tools Across the SOA Lifecycle

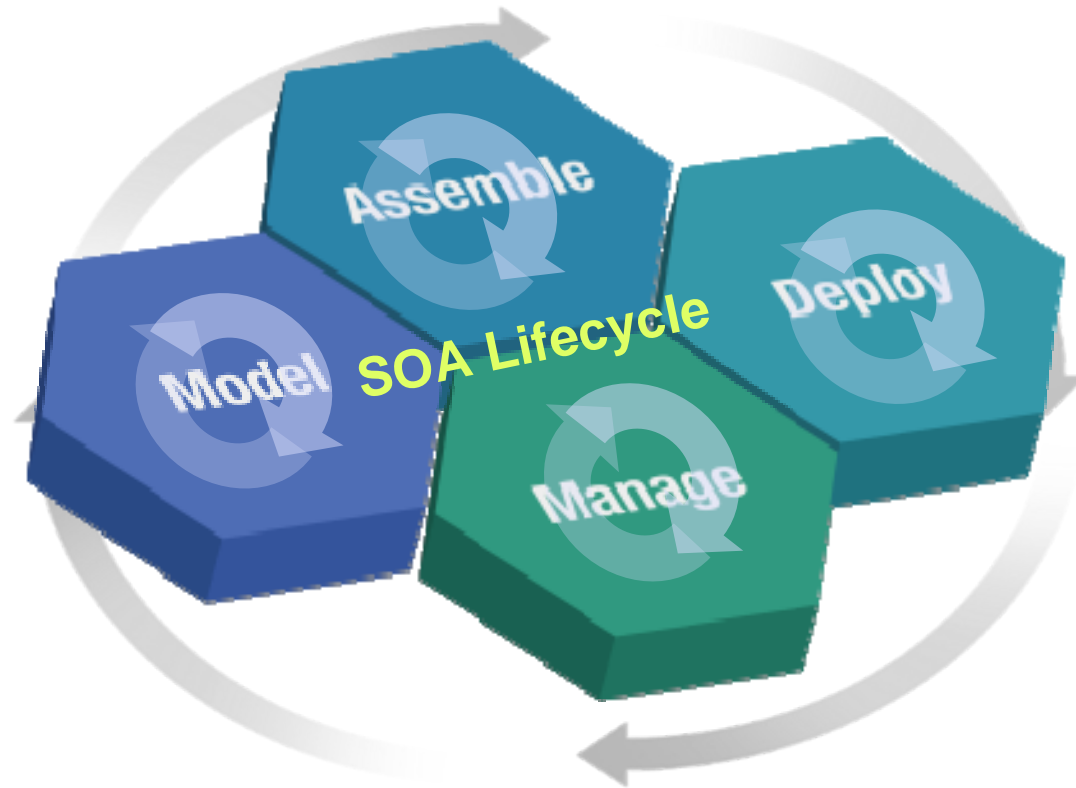
- Connecting Software results to business objectives
- Proactive response to quality issues earlier in the lifecycle



# SUMMARY: SOA Quality Management Helps Mitigate Risks and Lowers Costs Focused on Improving Business Flexibility

Within SOA Governance and Service Lifecycle Management

*SOA Quality Management is continuous and takes place within all phases of the SOA Lifecycle*



[SOA Quality Management](#)

[SOA Governance and Service Lifecycle Management](#)



# Rational Performance Tester Extension for SOA Quality

**Demo:** [RPT for SOA Quality](#)

# SOA Solutions and Service Lifecycle Management

- Introduction: SOA and the Service Lifecycle
- Planning and Modeling Services With SOMA
- Managing Service Development and its Assets
- Managing Services in the Operational Environment
- Governance and SOA Quality Management
- Summary and Resources

# Next Steps

- Learn more about SOA
  - ▶ [ibm.com/soa/](http://ibm.com/soa/)
- Download SOA whitepapers
  - ▶ [ibm.com/developerworks/webservices](http://ibm.com/developerworks/webservices)
- Learn more about the IBM SOMA Method
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- Download the SOMA RMC Plug-in
  - ▶ [ibm.com/developerworks/webservices/library/ws-soa-govern](http://ibm.com/developerworks/webservices/library/ws-soa-govern)
- Learn more about Rational Asset Manager
  - ▶ <http://www.ibm.com/software/awdtools/ram/>
- Conduct an SOA Workshop



# Rational Method Composer SOA Governance & Management Model Plug-In

The screenshot shows a web browser window titled "Rational Unified Process - Microsoft Internet Explorer". The page content includes a navigation menu on the left, a main heading "Getting Started with SOA Governance and Management", a "Contents" section with a link to "SOA Governance and Management Overview", and a "Main Description" section featuring a diagram of the "SOA Governance Lifecycle".

**SOA Governance Lifecycle Diagram:**

- Plan:** Establish 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:** 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
- Measure:** Monitor and Manage the Governance Processes
  - Monitor compliance with policies
  - Monitor compliance with governance arrangements
  - Monitor IT effectiveness metrics
- Enable:** Deploy the Governance Model Incrementally
  - Deploy governance mechanisms
  - Deploy governance IT infrastructure
  - Educate and deploy on expected behaviors and practices
  - Deploy policies

**Navigating the Web site Contents:**

- Introduction
- SOA Governance and Management Method Tab
  - Role Nodes
  - Task Nodes
  - Work Product Nodes
- SOA Governance and Management WBS Tab

- “How To” Guide for SOA Governance Implementation
- Free at:  
[www.ibm.com/soa/gov](http://www.ibm.com/soa/gov)

# WSRR 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 on DeveloperWorks:**

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

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

# developerWorks

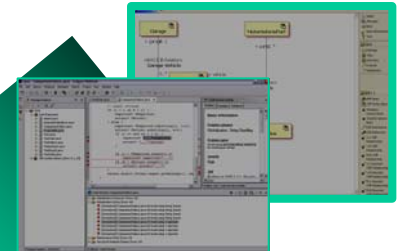
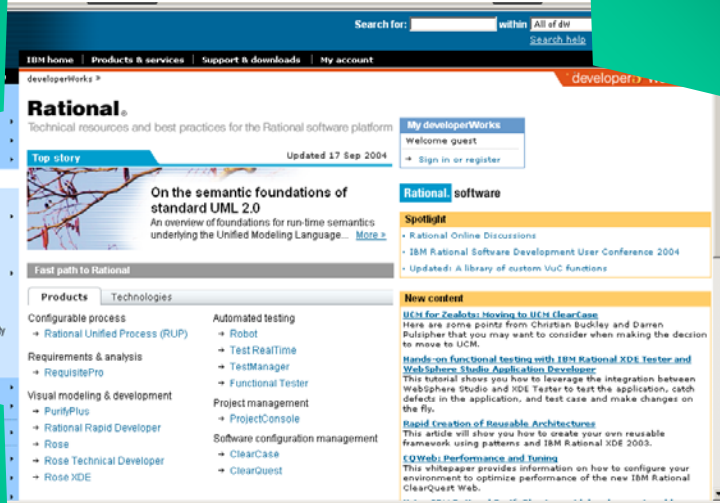
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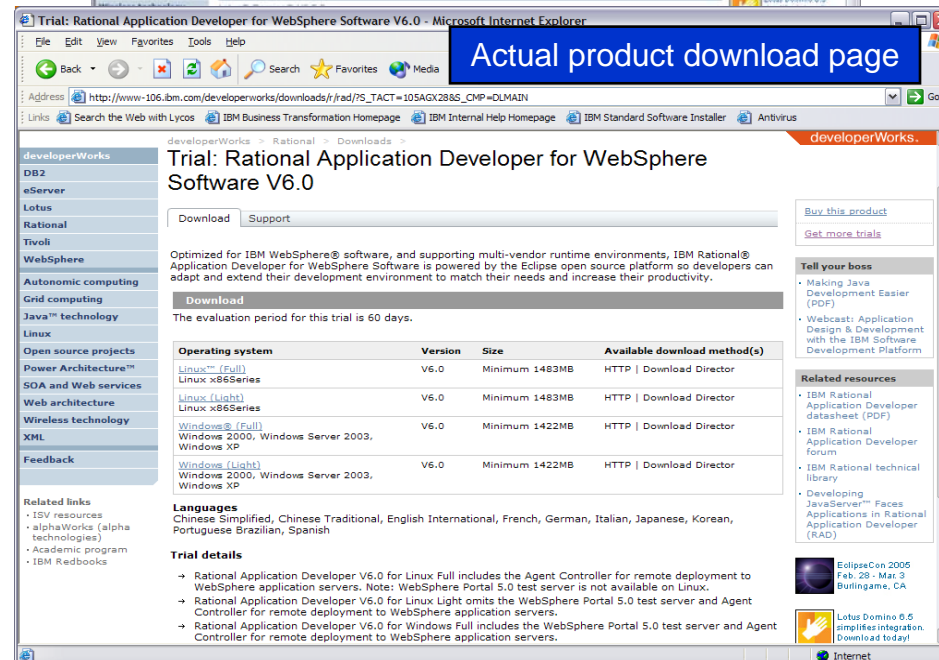
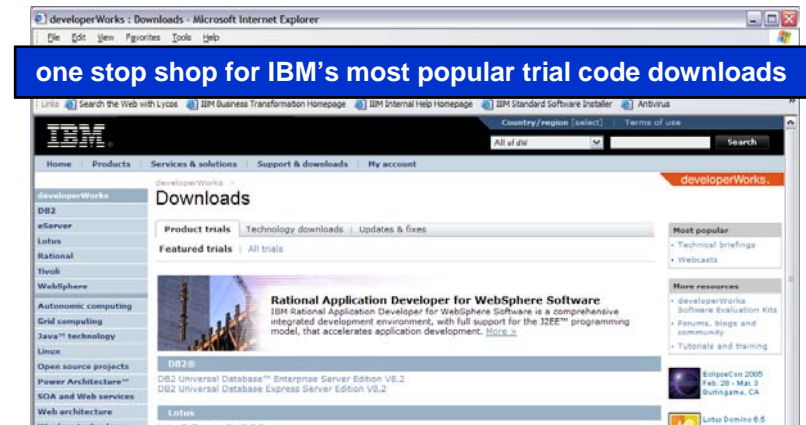
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- Use these trials to build an SOA.
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  - ▶ **Development tools from Rational including Rational Software Architect & Rational Application Developer.**
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## 2008 Briefings (page 1 of 3)



- **Achieving Enterprise Application Security:** This briefing covers application security end-to-end. It covers the goals of application security with a review of basic security concepts and shows how the basics are applied to building of security stacks, to add additional layers of defense, using Java / J2EE as the programming language and environment to illustrate technologies and techniques. – ½ day
- **Architecture, Design, and Construction using the IBM Rational Software Delivery Platform:** This briefing will demonstrate the latest version of the IBM Rational Software Development tools, their broad range of functionality and their use throughout the entire software development process, focusing on application modeling, design, development, coding, and testing. – ½ day
- **Eclipse: Empowering the Universal Platform:** This briefing takes a deep dive into some of the most important and feature rich projects that the Eclipse community is developing. From multi-language support to plug-in development, it shows how Eclipse has evolved into a universal platform complete software development.– ½ day
- **Effective Software Testing:** Focus on variety and thoroughness of IBM Rational's Software Quality solutions and best practices and demonstrates the framework and tools needed in software testing as a strategic business advantage. – ½ day

## 2008 Briefings (page 2 of 3)



- **IBM Middleware On Linux:** This briefing includes an overview of Linux as the premier open computing platform and the value it brings to any business. It introduces key IBM middleware products that run on Linux with a focus of products in the development space. – ½ day
- **Information on Demand Live! - Building the Next Generation of Database Applications:** A demonstration of IBM Information Management tools & services available to support rapid development of integrated solutions for managing expanding volumes of data by efficiently handling XML and relational data with ease to build agile applications faster. – 1 day
- **Open Community Tools: An Open Stack Development Platform:** This briefing explores the innovation of Open Source solutions available from IBM and illustrate the power and flexibility of IBM's Open Community development tools.– ½ day
- **Open Source Development: Tools and Open Standards:** Focus on IBM's role in "Open" source tools and Open standards – ½ day briefing/workshop

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# 2008 Briefings (page 3 of 3)



- **Building SOA Solutions and Managing the Service Lifecycle:**

Provides an in-depth look at the Service Lifecycle, from service planning and definition, analysis and modeling, development, deployment, and versioning through service retirement, along with the tools for managing development assets and services in the runtime. – ½ day

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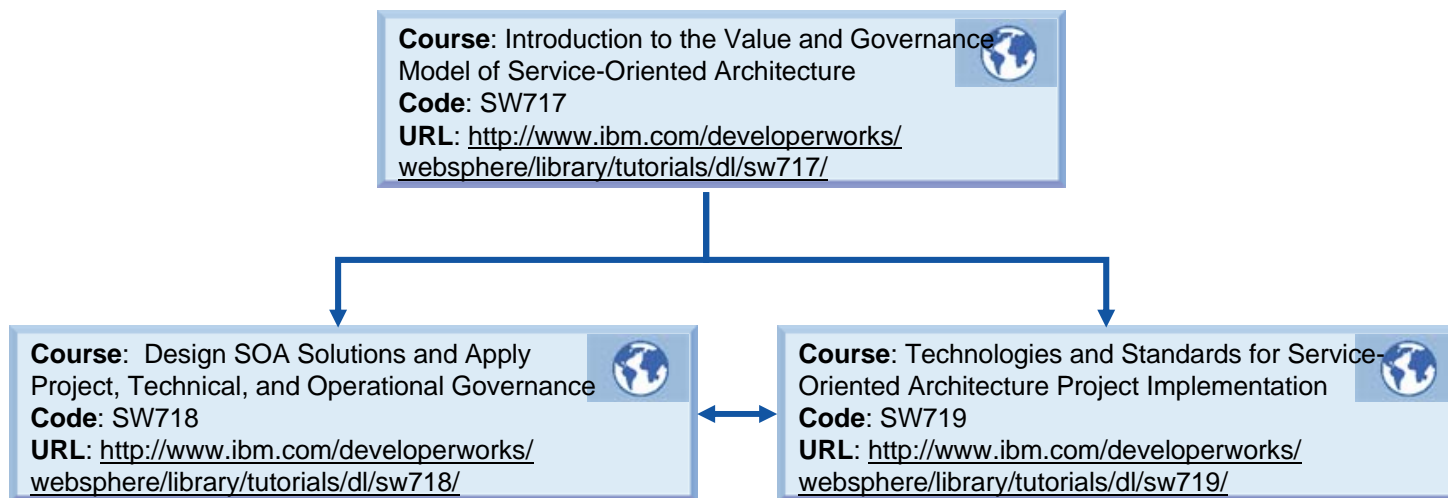
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- [Autonomic computing tutorials](#):

<http://www.ibm.com/developerworks/training/>

# SOA Skills Development – SOA Architect Role

## SOA Architecture and Governance



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	CD-ROM
	Certification
	Classroom
	Instructor Led Online
	Prerequisite
	Publication
	Teleconference
	Web-based



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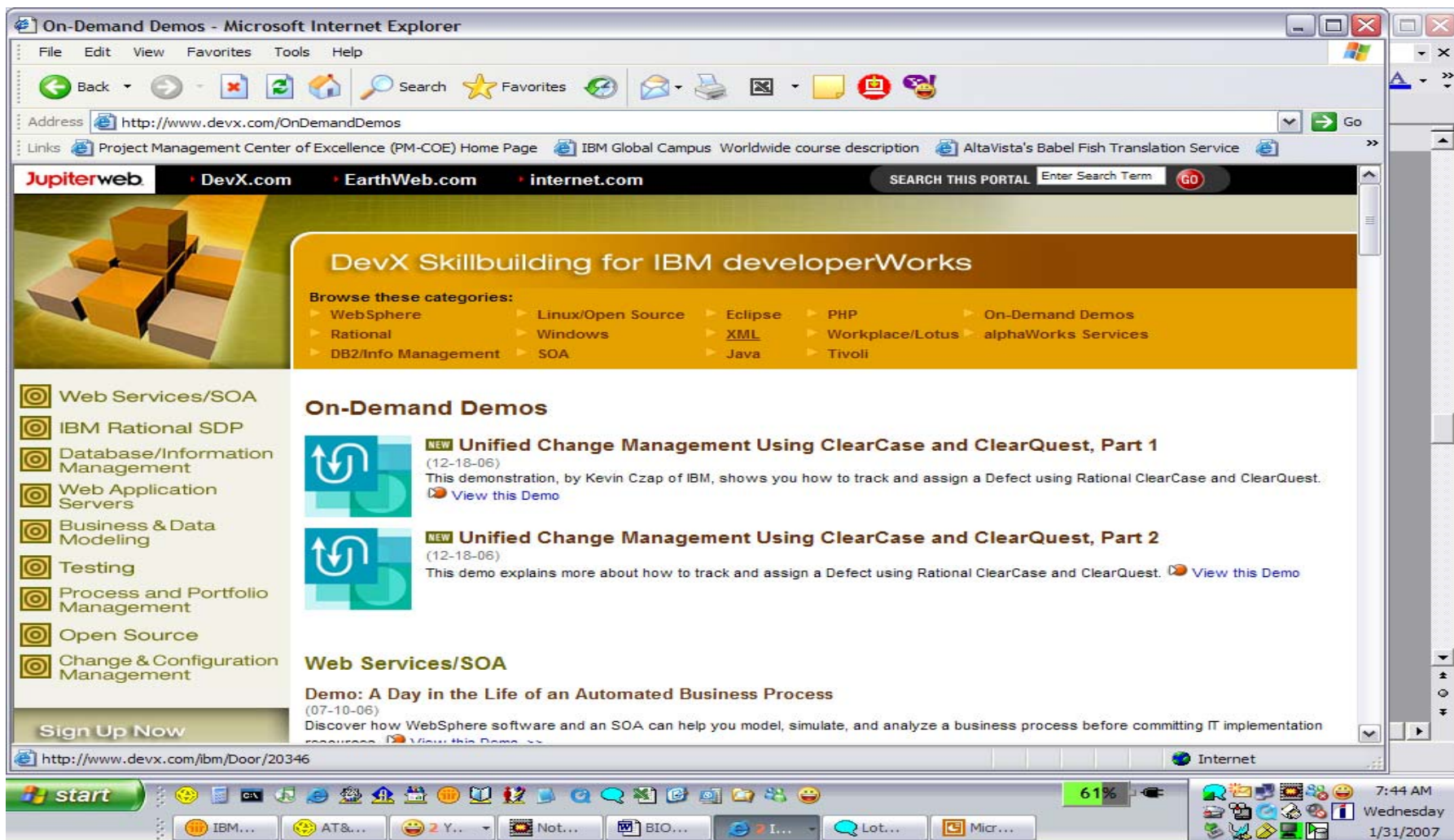
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- [Technical and business briefings](#)

### Product events

<ul style="list-style-type: none"> <li>→ <a href="#">Information Management</a></li> <li>→ <a href="#">eServer</a></li> <li>→ <a href="#">Lotus</a></li> </ul>	<ul style="list-style-type: none"> <li>→ <a href="#">Rational software</a></li> <li>→ <a href="#">Tivoli</a></li> <li>→ <a href="#">WebSphere</a></li> </ul>
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#### Document options

- [Print this page](#)
- [E-mail this page](#)

#### Spotlight

- WebSphere Everyplace Access: Chicago IL, 15-19 May
- DB2 Content Manager API: Paris France, 16-19 May
- Webcast: Getting Started, Portfolio Management Best Practices, Tips and Techniques: 17 May, 11:00am EST

#### Resources

- [developerWorks community](#)
- [On demand demos](#)
- [IBM technical conferences](#)
- [User groups](#)

developerWorks
AIX and UNIX
eServer
Information Mgmt
Lotus
Rational
Tivoli
WebSphere
Workplace

Architecture
Autonomic computing
Grid computing
Java™ technology
Linux
Open source
Power Architecture™
SOA and Web services
Web architecture
Wireless technology
XML
Feedback



<http://www-128.ibm.com/developerWorks/offers/techbriefings/events.html>

# dW Podcasts

- We offer Podcasts as well. Podcasts are downloadable MP3 recordings on various technical subjects, particularly useful on long airplane rides!
- Currently available Podcasts include:
  - ▶ “Governing Development and the IBM Rational Vision ”
  - ▶ “Special episode: Service orientation on Linux”
  - ▶ “Making SOA real with WebSphere: Optimizing reuse and connectivity”
- Visit:  
<http://www-128.ibm.com/developerworks/podcast/websphere/>  
to download SOA related (and other) podcasts.



# Global Rational User Group Community

Global Rational User Group Community

<b>User Groups</b>	<p><b>WELCOME</b></p> <p>Are you an IBM Rational software user, looking to get the most out of your software development tools?</p> <p>Rational User Groups are independent, user-run organizations that provide an open forum to promote information exchange between customers and Rational staff. They bring together bright minds and bright ideas. Designed as live meetings where you can share experiences and advice with fellow users, Rational User Groups put you in direct touch with key members the Rational staff, as well as the Rational user community and partner organizations. So whether you are a power user of a Rational tool, or a new user looking for insight from others, get involved and get connected!</p> <p><b>NEW</b> <b>RUG Vendor Zone</b> Check out the new <b>RUG Vendor Zone</b>. This is a resource for Community members to easily access information on Rational based products, solutions and services offered by vendors.</p> <hr/> <p><b>Take our July Poll</b> <small>NEW!</small></p> <p>Which of the following types of open source tools do members of your development organization use on a regular basis?</p> <p><input type="radio"/> Integrated Development Environment (e.g. Eclipse, emacs, Mono, NetBeans, SunOne, etc.)</p> <p><input type="radio"/> Modeling (e.g. ArgoUML, Napkin, Omondo, Poseidon, Violet, UMLet, etc.)</p> <p><input type="radio"/> Performance Testing (e.g. JMeter, OpenSTA, MS Appl. Center Test, etc.)</p>	<p><b>Sponsors</b></p> <div style="border: 1px solid #f4a460; padding: 5px; margin-bottom: 5px;"> <p><b>Rational</b> software</p> <p style="color: #f4a460;">Become a sponsor</p> </div> <p><b>Rational Member Survey</b></p> <p><b>Rational Software Spotlight</b></p> <p><b>Featured Spotlight</b></p> <p><small>Application Name:</small> Exaltec b+ J2EE-SOA Competitive Migrator  <small>Description:</small> b+ is a developer productivity tool for the automated migration of legacy applications such as Oracle Forms, Informix 4GL etc to an n tier J2EE SOA solution. b+ migrates the application NOT the database.  <small>Member Name:</small> Julian Carter, Exaltec Software Ltd</p> <p style="text-align: right; color: #f4a460;"><a href="#">Details &gt;&gt;</a></p>
<b>News and Events</b>	<ul style="list-style-type: none"> <li><input type="radio"/> Find a User Group</li> <li><input type="radio"/> Join a User Group</li> <li><input type="radio"/> Attend a User Group Meeting</li> <li><input type="radio"/> Start a User Group</li> <li><input type="radio"/> Leader's area</li> </ul> <ul style="list-style-type: none"> <li><input type="radio"/> News</li> <li><input type="radio"/> Events</li> <li><input type="radio"/> Newsletters                             <ul style="list-style-type: none"> <li>&gt;&gt; Latest issue</li> <li>&gt;&gt; Subscribe</li> </ul> </li> </ul>	
<b>User Group Resources</b>	<ul style="list-style-type: none"> <li><input type="radio"/> References</li> <li><input type="radio"/> Useful Links</li> <li><input type="radio"/> Vendor Zone</li> <li><input type="radio"/> Presentations                             <ul style="list-style-type: none"> <li>&gt;&gt; Public</li> <li>&gt;&gt; Private - Login required</li> </ul> </li> <li><input type="radio"/> Speaker Bureau</li> <li><input type="radio"/> Downloads</li> <li><input type="radio"/> ListSrvs &amp; Newsgroups</li> </ul>	

<http://www.rational-ug.org/>

# eclipse.org

- At the Eclipse site, you can download:
  - ▶ The Eclipse environment
  - ▶ Sample plug-ins
  - ▶ Articles and tutorials
  - ▶ Courseware to help you learn about Eclipse (or teach other people)
  - ▶ Links to Eclipse communities worldwide

# ibm.com/redbooks

- Redbooks are written by IBM product support teams to help you get up and running with our tools and technologies. They focus on real-world environments.
- You can download PDFs for free, or order a hardcopy book from the dW bookstore.



# SOA Solutions Development

The image shows the cover of a Redbooks document. At the top left, it says 'Rational software' and 'Draft Document for Review January 5, 2007 6:57 am'. At the top right is the IBM logo and 'SG24-7356-00'. The main title is 'Building SOA Solutions Using the Rational SDP'. Below the title, there are three bullet points: 'Service identification, specification, realization, and implementation', 'From modeling to implementation to testing', and 'Service-oriented architecture in practice'. The central graphic features two overlapping globes with a thick black ribbon looping around them. At the bottom left, a red box contains the text 'This is the first draft' and 'ibm.com/redbooks'. At the bottom right, the authors' names are listed: Ueli Wahli, Lee Ackerman, Alessandro Di Bari, Gregory Hodgkinson, Anthony Kesterton, Laura Olson, and Bertrand Portier. The Redbooks logo is at the bottom center.

Rational software

Draft Document for Review January 5, 2007 6:57 am

IBM

SG24-7356-00

## Building SOA Solutions Using the Rational SDP

- Service identification, specification, realization, and implementation
- From modeling to implementation to testing
- Service-oriented architecture in practice

Ueli Wahli  
Lee Ackerman  
Alessandro Di Bari  
Gregory Hodgkinson  
Anthony Kesterton  
Laura Olson  
Bertrand Portier

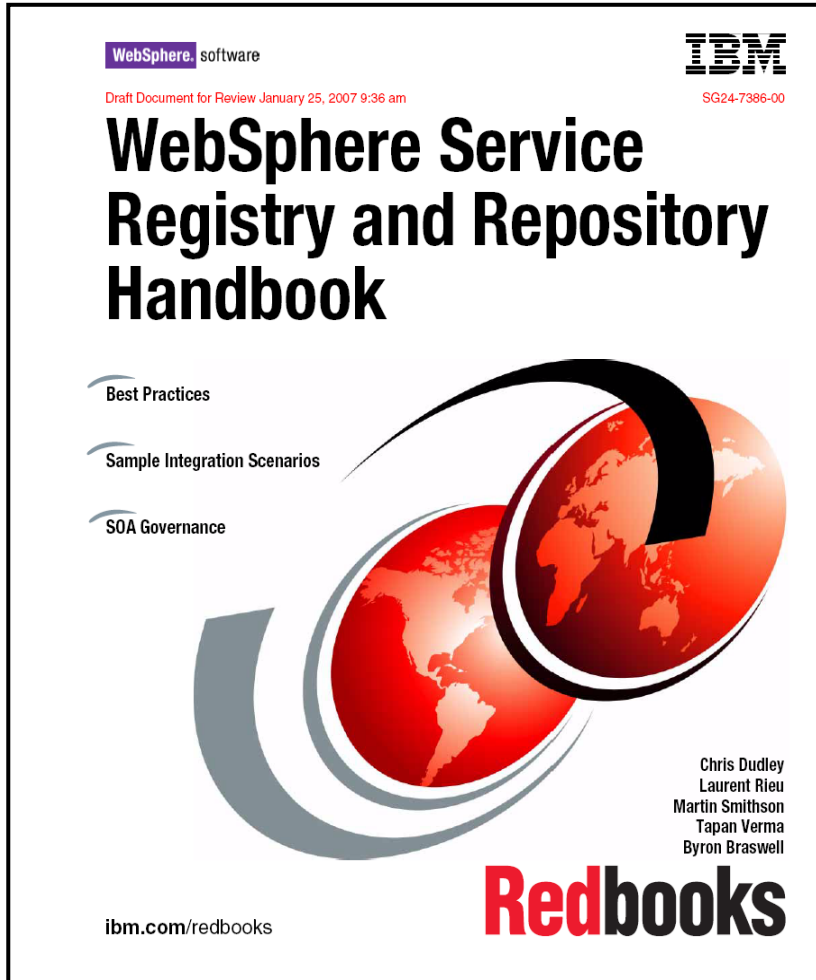
This is the first draft

ibm.com/redbooks

**Redbooks**

- Using the Rational SDP throughout the Service Lifecycle
- Covers Service identification, development, implementation, governance, and more

# WSRR Handbook

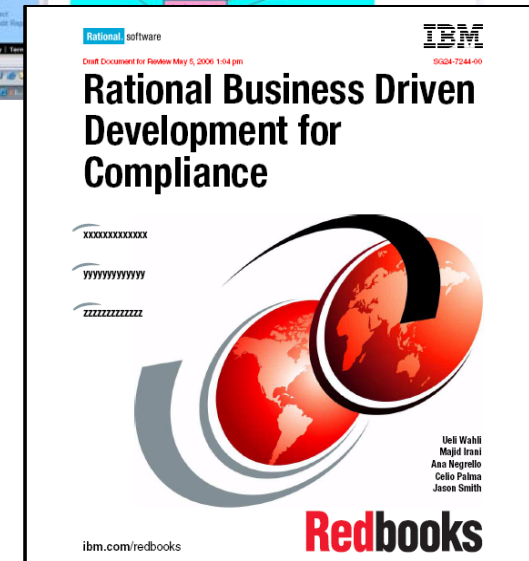
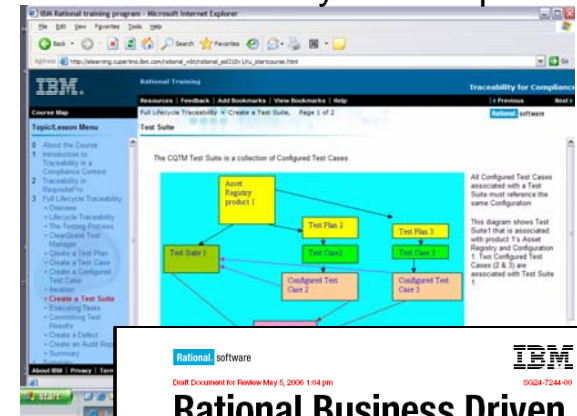


- Comprehensive overview of WSRR concepts, architecture, integration, and governance
- Over 11MB

# Improved Compliance Management for Distributed Teams

- Rational Redbook for Compliance
  - ▶ “Rational Business Driven Development for Compliance” -- Best practices for implementing a compliant development infrastructure
- Web-based Training for Compliance
  - ▶ SOL 310: Traceability for Compliance
  - ▶ SOL 510: Using ClearQuest for Compliance
- RMC Plug-in for Compliance Management
  - ▶ Guidance to help customers implement a compliant development infrastructure with separation of duties, quality gates, approval checkpoints, and audit reports

## WBT: “Traceability for Compliance”



# More Information on IT Governance Standards

- COSO – Committee of Sponsoring Organizations
  - ▶ Home: <http://www.coso.org/>
  - ▶ Overview: [http://www.sox-online.com/coso\\_cobit\\_coso\\_framework.html](http://www.sox-online.com/coso_cobit_coso_framework.html)
  - ▶ Updated Draft Document on Risk Management Framework:
    - [http://www.sox-online.com/coso\\_cobit\\_coso.html](http://www.sox-online.com/coso_cobit_coso.html)
  
- CoBIT – Control Objectives for Information and Related Technology
  - ▶ ISACA Custodians of COBIT - <http://www.isaca.org/>
  - ▶ COBIT User Forum The main COBIT User Group - <http://www.controlit.org/>
  - ▶ COBIT Wiki - Dedicated wiki - <http://it.safemode.org/>

# User Group Communities

The screenshot shows the IBM developerWorks community page for user groups. The page is titled "developerWorks community" and features a navigation menu with categories like "AIX and UNIX", "IBM Systems", "Information Mgmt", "Lotus", "Rational", "Tivoli", "WebSphere", "Workplace", "Architecture", "Autonomic computing", "Grid computing", "Java™ technology", "Linux", "Open source", "Power Architecture™", "SOA and Web services", "Web development", and "XML".

The main content area is divided into sections for different user groups:

- Grid computing user groups:** These groups foster the collaboration among individual researchers and practitioners working on distributed computing. A link to "Find a user group" is provided.
- Information Management (IDUG):** The International DB2 Users Group (IDUG®) is an independent, not-for-profit, user-run organization whose mission is to support and strengthen the information services community by providing the highest quality education and services designed to promote the effective utilization of the DB2 family of products. A link to "More details" is provided.
- U2UG:** The U2 user group is an independent, non-profit organization that provides users of the IBM U2 product line (UniVerse, UniData, RedBack, wIntegrate and SystemBuilder) with information to assist them in the implementation of U2 software solutions. Through the group, members are able to share information and learn from other users' knowledge and experience of using U2 and related product and services. A link to "More details" is provided.
- IIUG:** Founded in 1995, IIUG is the most influential user group representing the users of Informix products. Thousands of IIUG members around the world network, share knowledge and influence IBM and other vendors through IIUG. If you are just now discovering us and are interested in Informix technology, we encourage you to join IIUG now at no charge. A link to "More details" is provided.
- Java technology user groups:** These user groups provide an opportunity for you to learn more about Java technology, discuss new technologies and share innovative ideas with other developers. A link to "Find a user group" is provided.

On the right side of the page, there are several utility and promotional sections:

- Document options:** Includes "Print this page" and "E-mail this page".
- Product support:** Lists "Product documentation", "Software support", and "eServer support".
- Meet the experts:** Lists "Info Mgmt" and "WebSphere".
- Events:** Lists "Technical briefings" and "Webcasts".
- Emerging technologies:** Lists "alphaWorks" and "alphaWorks forums".
- Special offers:** Includes "Webcast: Integrate open source into your business", "On demand demos: An easy way to watch and learn", and "Announcing DB2 Records Manager Version 4.1.1".

[ibm.com/developerworks/usergroups](http://ibm.com/developerworks/usergroups)

# IBM Software User Group Community

## Tivoli

- ▶ Tivoli software user communities:  
[ibm.com/software/tivoli/tivoli\\_user\\_groups/community.html](http://ibm.com/software/tivoli/tivoli_user_groups/community.html)
- ▶ Global Software User Group community: [tivoli-ug.org](http://tivoli-ug.org)

## WebSphere

- ▶ Global WebSphere User Group community: [websphere.org](http://websphere.org)

## Information Management

- ▶ Enterprise Content Management/UserNet: [filenet.com/usergroup](http://filenet.com/usergroup)
- ▶ U2 User Groups: [u2ug.org](http://u2ug.org)

## Rational

- ▶ Global Rational User Group community: [rational-ug.org](http://rational-ug.org)





# IBM Academic Initiative

The screenshot shows the IBM Academic Initiative website. At the top, there is a navigation bar with the IBM logo, a search bar containing 'Academic Initiative', and links for 'Country/region [select]', 'Terms of use', 'Home', 'Products', 'Services & solutions', 'Support & downloads', and 'My account'. The main content area features a large banner with the text 'Get access to academic resources.' and a photo of a classroom. Below the banner, there are sections for 'Why IBM' (highlighting open source and no-charge resources), 'Become a member' (with 'Get the details' and 'Apply now' buttons), and 'Already a member?' (with 'Download software' and 'Download courseware' buttons). A sidebar on the left lists various categories like 'Products & technologies', 'Downloads & CDs', 'Training', etc. A right sidebar includes 'Membership' options (Join now, Renew membership, etc.), 'Worldwide sites' (country selector), and 'Quick links' (Request or renew a Rational license key, Get help). At the bottom, there are three circular icons labeled 'Learn about open source', 'Explore high school resources', and 'Read our latest newsletter'.

[ibm.com/university/scholars/academicinitiative](http://ibm.com/university/scholars/academicinitiative)

# Today's Slides.....

- ...are available at:
  - ▶ **[ibm.com/developerworks/offers/techbriefings/details/lifecycle.html](http://ibm.com/developerworks/offers/techbriefings/details/lifecycle.html)**.
- Based on your comments, and because new technologies are always emerging, we'll be updating the materials throughout the year.

# Questions



THANK  
YOU