

# Services Governance with IBM WebSphere

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IBM

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Session Number (10785)



# Without proper management and governance of service-oriented architecture (SOA)...

This could become...



*The promise of SOA*

... like this



*A pile of services*

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

# Some common issues an Enterprises must address...



**"Wild West" Services:** EXTREMELY DIFFICULT TO GAIN CONTROL OVER

- ❑ Services proliferate wildly because no formal service-definition process is in place
- ❑ Nobody knows how many services are in place, where they are or what they do
- ❑ No registry of Web services
- ❑ **No leverage and no reuse – defeats a major benefit of SOA**



**"Duplicated" Services:** SUPERFICIALLY EFFECTIVE BUT LIMITED REAL SAVINGS

- ❑ Too large and contain services often duplicated twice or more
- ❑ Duplicated Web Services must be identified
- ❑ **Rewarding mechanisms for reusing and creating reusable services are vague**
- ❑ **Little reuse while maintenance costs multiply, are much higher than needed**



**"Shelfware" Services:** A WASTE OF RESOURCE, WON'T DELIVER BENEFITS

- ❑ Few applications actually use the shared services--most applications remain as they are
- ❑ No way to report on unused Web services to limit "shelf-ware"
- ❑ **Reuse is a promise that's never kept**

# Additional issues



## **Unsecure Services:** LIMITS SERVICE USE AND BUSINESS OPPORTUNITIES

- ❑ Services are not used internally because they cannot be trusted
- ❑ Cannot open up services to customers, partners, and suppliers due to lack of security
- ❑ Difficult to manage security policies that apply to different assets and roles
- ❑ **Risk of security breaches**
- ❑ **No leverage and no reuse of services**



## **Rigid Services:** ROADBLOCK TO AGILE, FLEXIBLE BUSINESS PROCESSES

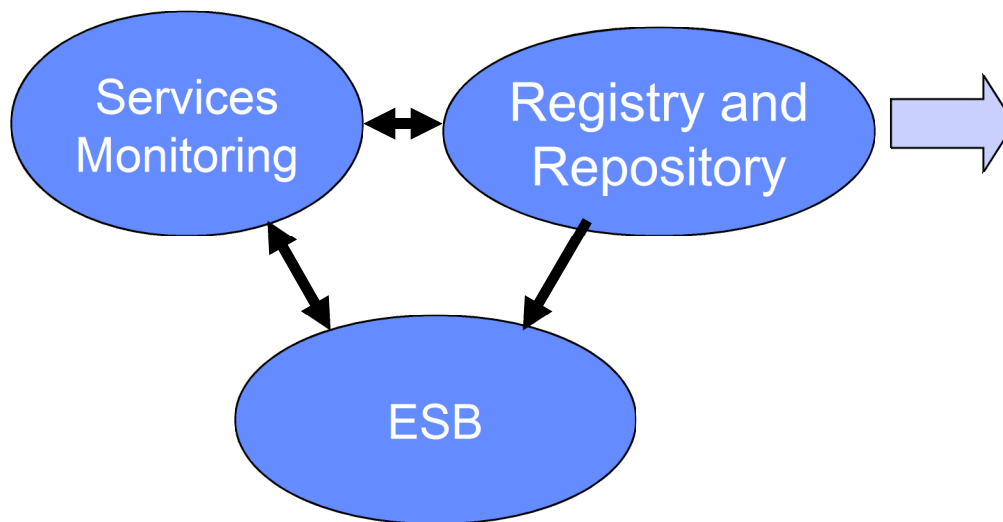
- ❑ Business policies are hard-coded in applications and services—difficult and expensive to change
- ❑ SOA cannot respond in real time to service problems—services are not reliable
- ❑ **Promise of reduced maintenance costs with SOA is not realized**
- ❑ **No leverage and no reuse of services**



## **Web Services treated as “Applications”:** THEY ARE **INFRASTRUCTURE**

- ❑ As a part of infrastructure they must be managed as any other resource
- ❑ Web services must be monitored and issues mediated
- ❑ **Web service failures can affect many business applications and processes**

# Building a basic SOA Infrastructure

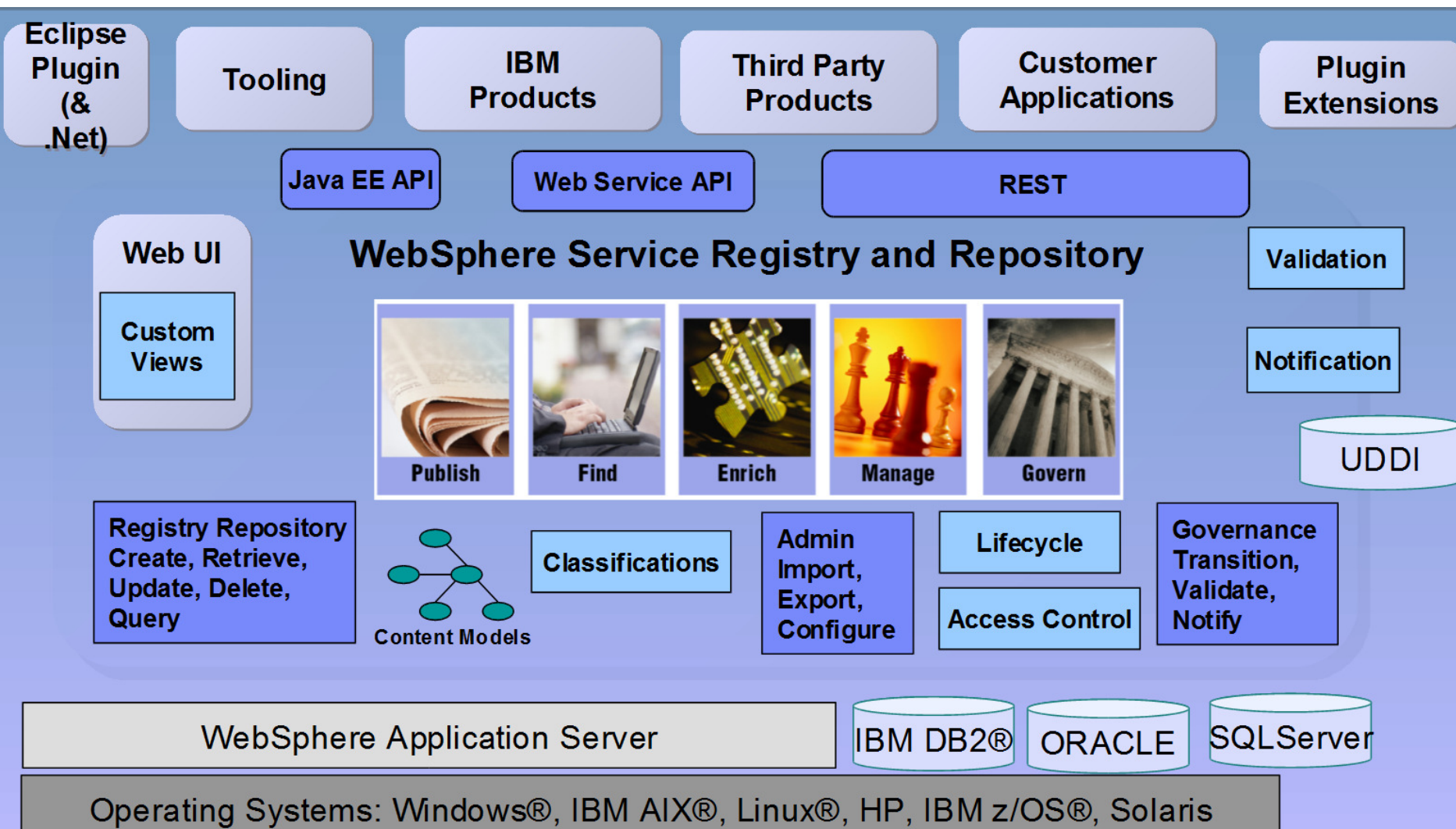


WebSphere Service Registry and Repository provides:

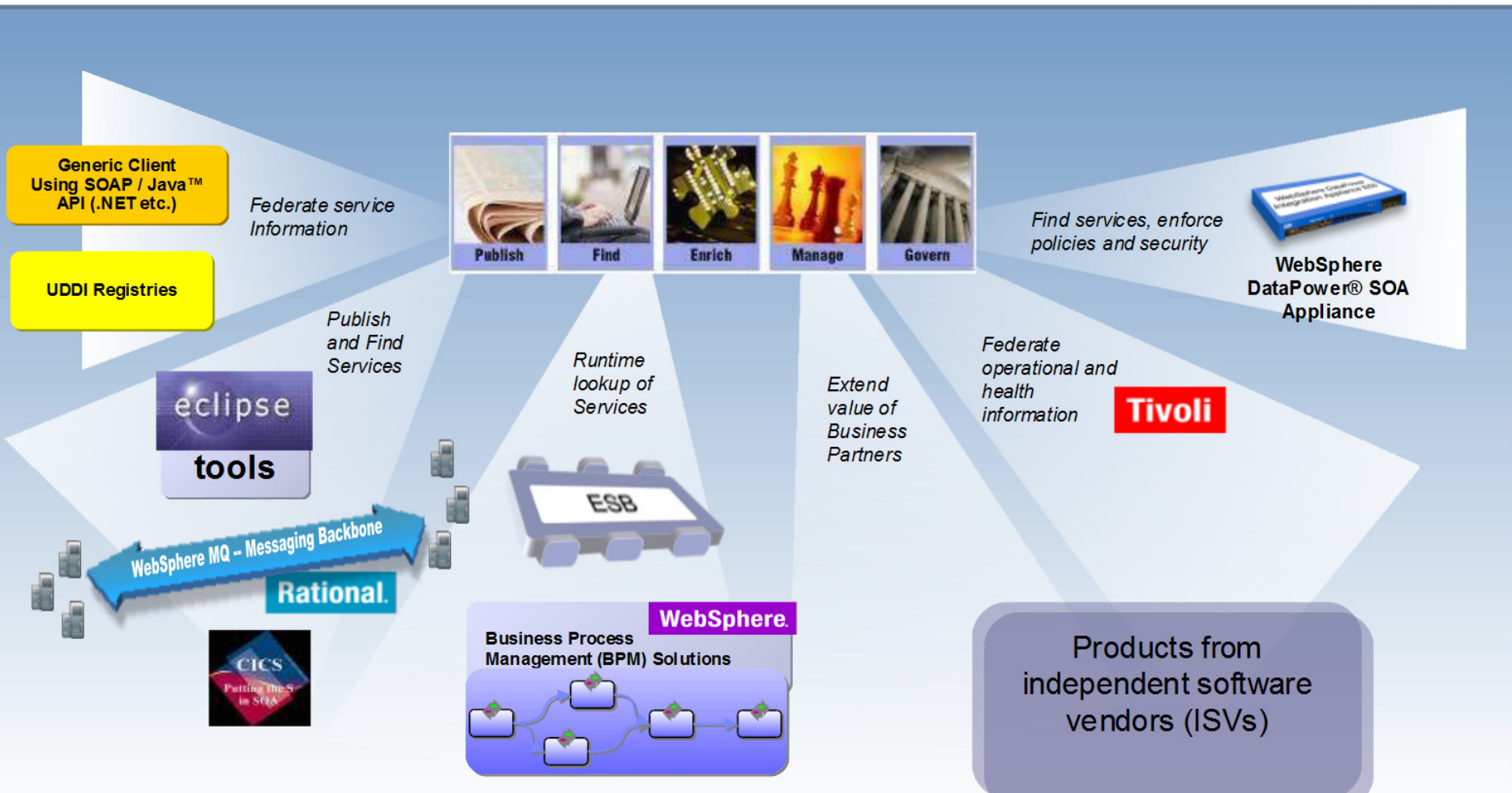
1. Master reference for service definitions
2. Service governance
3. Integration



# WebSphere Service Registry & Repository Architecture...

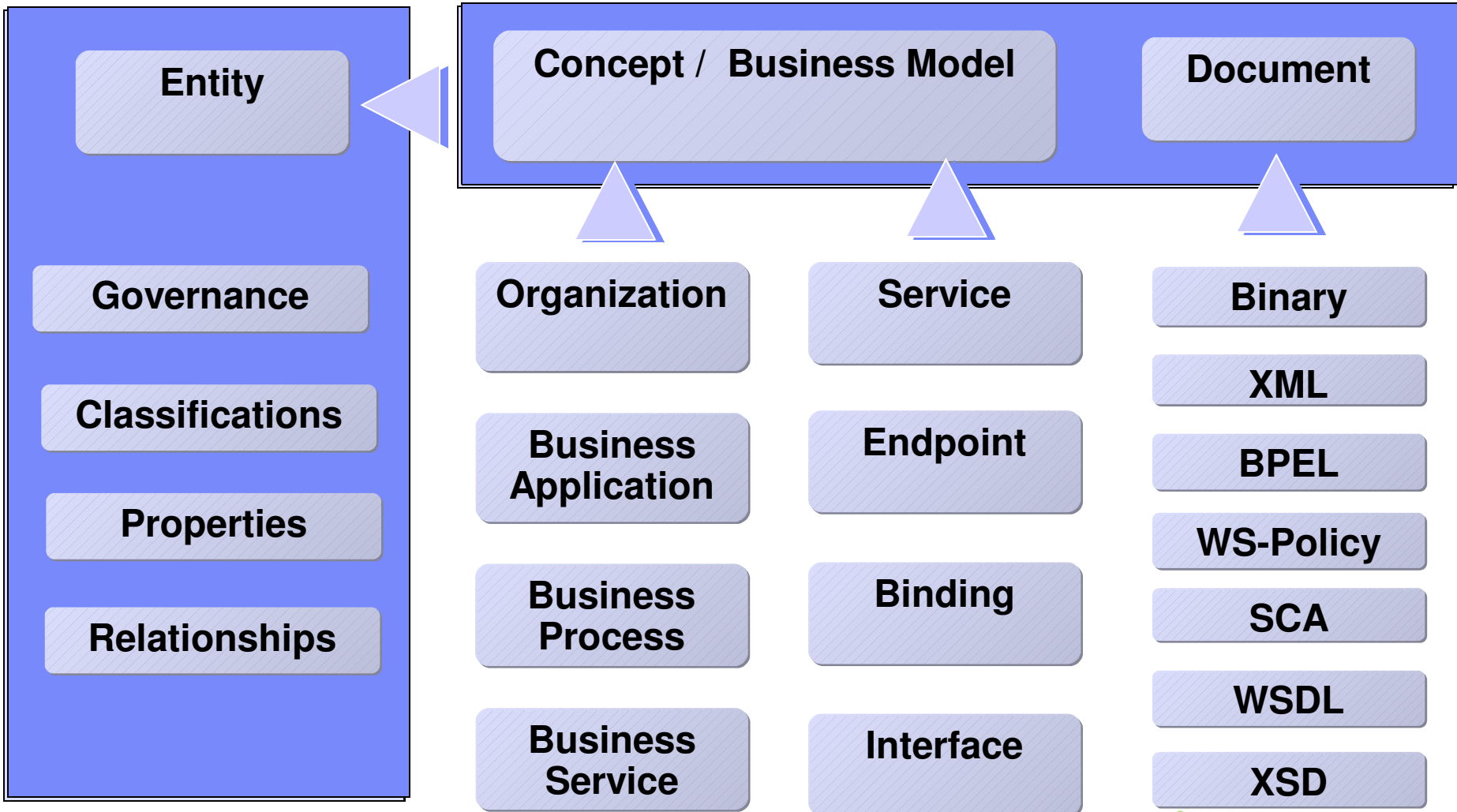


# Integration



# Master reference for service definitions

< ----- Registry ----- > < --- Repository --- >





# Publish with WebSphere Service Registry & Repository



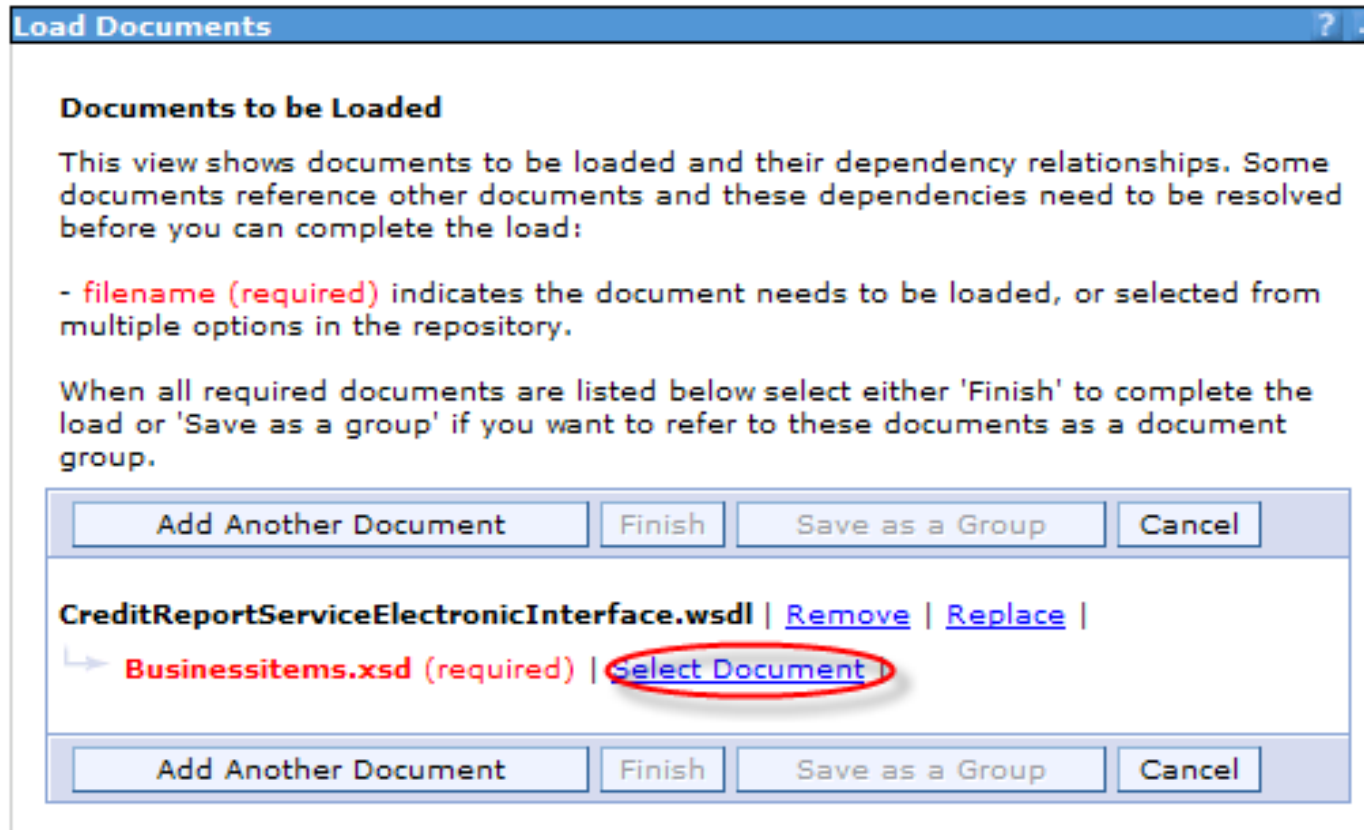
## ***Encourage Greater Reuse***

Business and IT alignment through sharing assets

- ***Publish Documents Using ...***
- WebSphere Service Registry and Repository Web User Interface
- Eclipse Plugin User Interface
- WebSphere MQ Explorer

# Automatic Dependencies

- WebSphere Service Registry and Repository automatically figures out all the dependencies when loading a document.



**Load Documents** ? -

**Documents to be Loaded**

This view shows documents to be loaded and their dependency relationships. Some documents reference other documents and these dependencies need to be resolved before you can complete the load:

- **filename (required)** indicates the document needs to be loaded, or selected from multiple options in the repository.

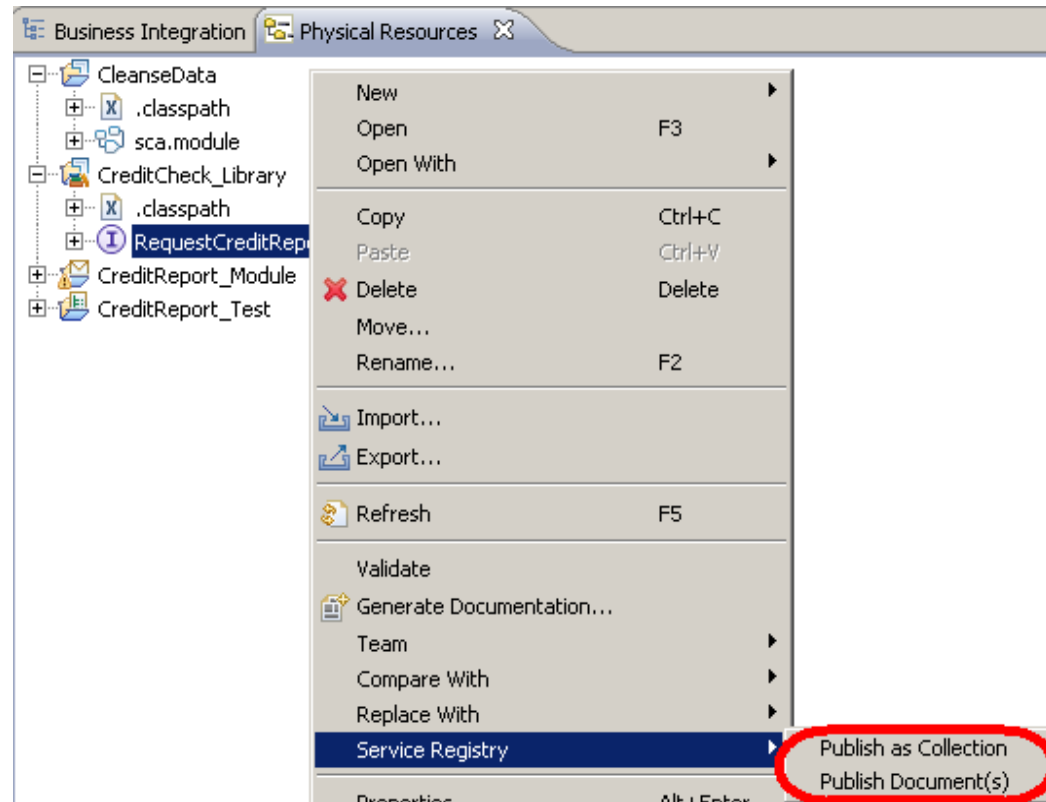
When all required documents are listed below select either 'Finish' to complete the load or 'Save as a group' if you want to refer to these documents as a document group.

**CreditReportServiceElectronicInterface.wsdl** | [Remove](#) | [Replace](#) |

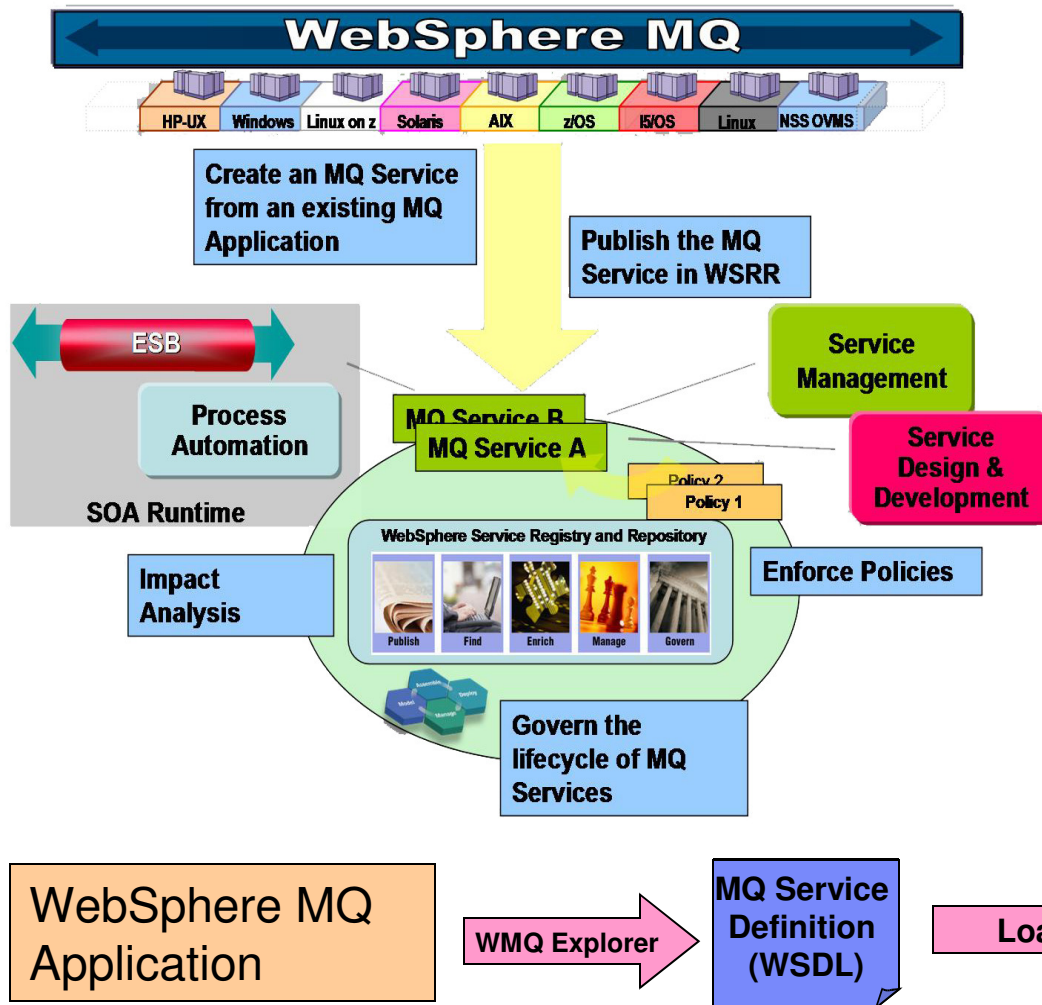
↳ **Businessitems.xsd (required)** | [Select Document](#)

# Publish Using Service Registry Eclipse Plug-in

- Subset of Web UI's extensive capabilities
- Supports Eclipse environments
- APIs enable other environments



# Publishing Services from WebSphere MQ Explorer

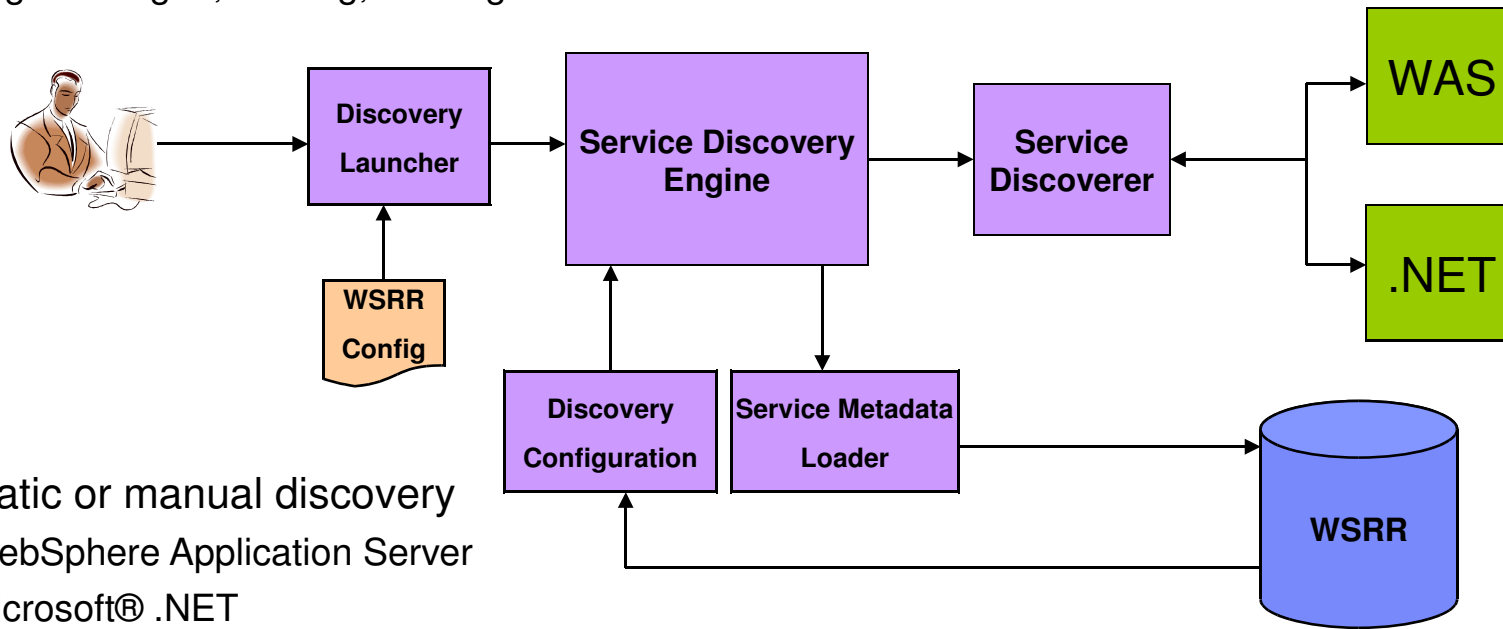


- WebSphere MQ Explorer creates a WSDL with wmqservice elements
- When a WebSphere MQ WSDL is loaded, WebSphere Service Registry and Repository automatically builds
  - representations of:
    - WebSphere MQ queue managers,
    - WebSphere MQ queues
    - WebSphere MQ connections,
  - And relationships between them and a port object



# Find & Publish Using Service Discovery

- Discovery rogue services
  - Bring under governance / management
  - Align managed, running, and rogue services



- Automatic or manual discovery
  - WebSphere Application Server
  - Microsoft® .NET
  - Oracle Application Server and Oracle WebLogic Server
  - JBoss Application Server
  - And Service Component Architecture (SCA) modules from WebSphere Enterprise Service Bus and WebSphere Process Server

# Find with WebSphere Service Registry & Repository



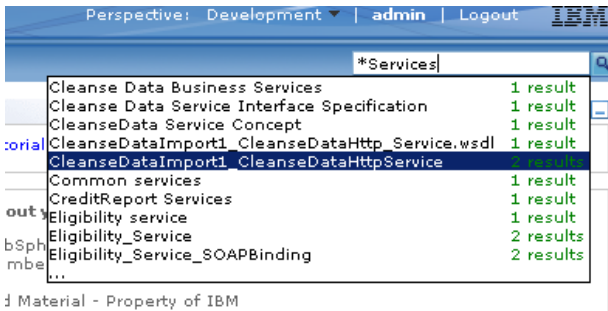
## ***Encourage Greater Reuse***

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

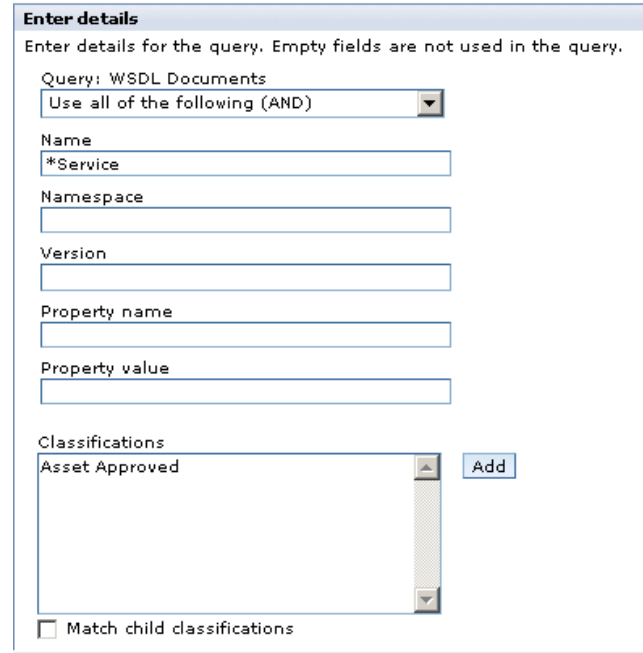
- ***Find Services Using ...***
- WebSphere Service Registry and Repository Web User Interface
- Eclipse Plugin User Interface

# Find Services Using Web UI Query Wizard

## Simple Search - with Auto Suggest



Search Result	Number of Results
Cleanse Data Business Services	1 result
Cleanse Data Service Interface Specification	1 result
CleanseData Service Concept	1 result
CleanseDataImport1_CleanseDataHttp_Service.wsdl	1 result
CleanseDataImport1_CleanseDataHttpService	1 result
Common services	1 result
CreditReport Services	1 result
Eligibility service	1 result
Eligibility_Service	2 results
Eligibility_Service_SOAPBinding	2 results



**Enter details**  
Enter details for the query. Empty fields are not used in the query.

Query: WSDL Documents  
Use all of the following (AND)

Name: \*Service

Namespace: [ ]

Version: [ ]

Property name: [ ]

Property value: [ ]

Classifications: Asset Approved [Add]

Match child classifications

## Faceted Search - with Filters

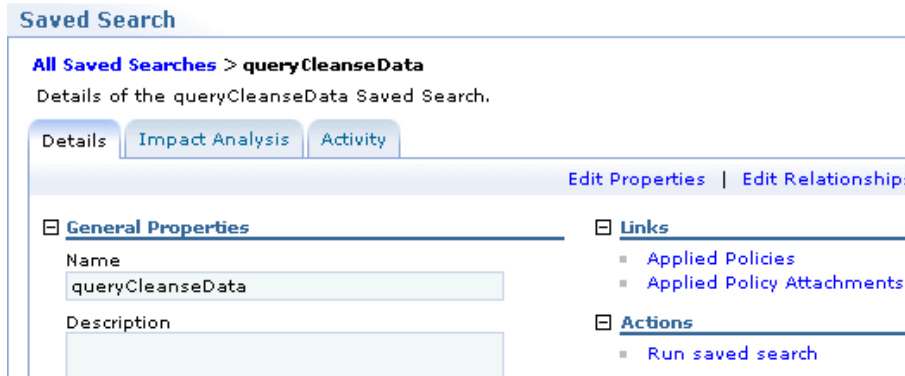


**Filters**

- Business Models**
  - Global Element (2)
  - Service Message (2)
  - Service Operation (1)
- Service Metadata**
  - Concept (5)
  - Input (4)
  - Message (4)
  - Operation (4)
  - Output (4)
  - XSD Element (4)
- Relationship**
  - [ ] [Add]
- Property**
  - Property name: [ ]
  - Value: [ ] [Add]

## Saved Queries

- Save complex search queries and rerun later



**Saved Search**

All Saved Searches > queryCleanseData

Details of the queryCleanseData Saved Search.

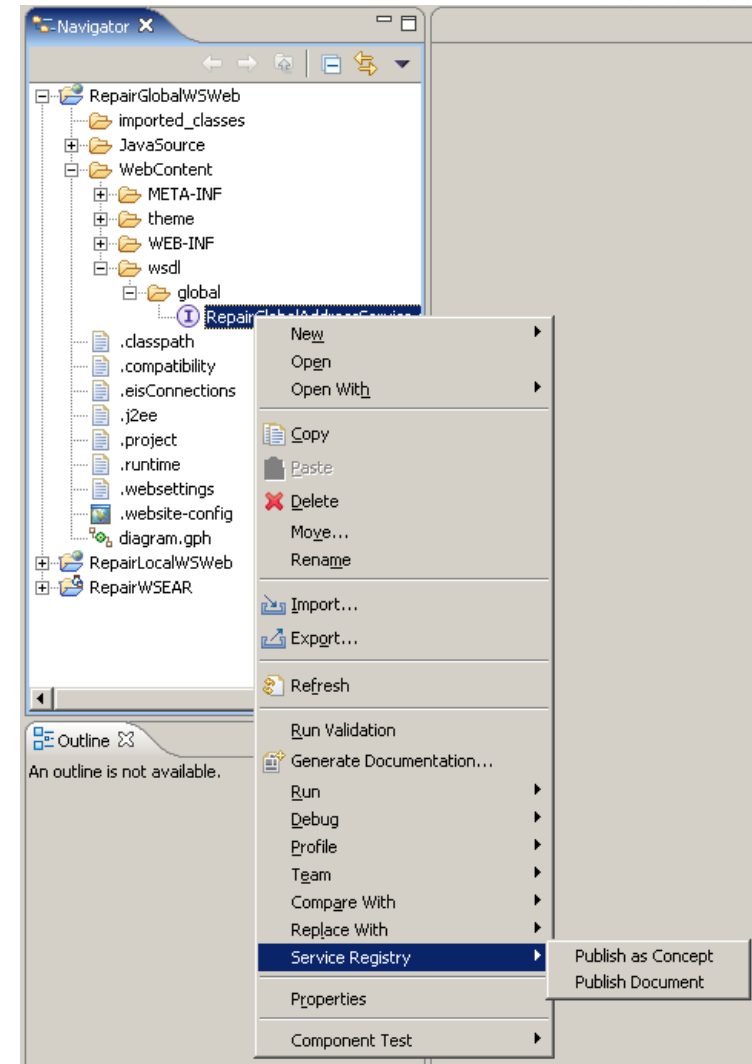
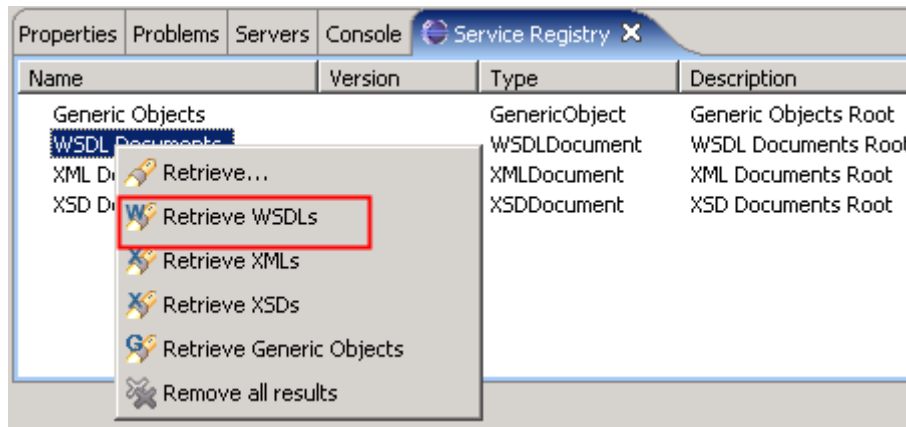
Details | Impact Analysis | Activity

Edit Properties | Edit Relationships

- General Properties**
  - Name: queryCleanseData
  - Description: [ ]
- Links**
  - Applied Policies
  - Applied Policy Attachments
- Actions**
  - Run saved search

# Find Using Service Registry Eclipse Plug-in

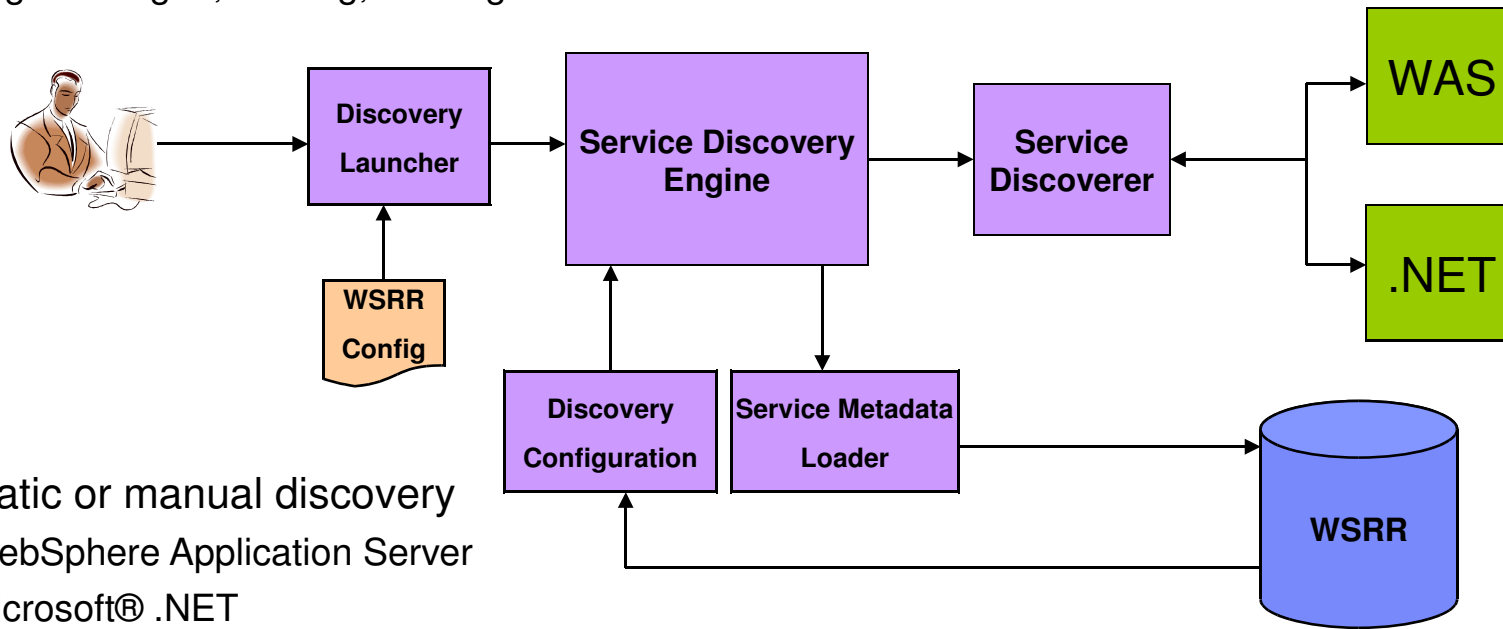
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# Governance: Reduce business risk with prescriptive life cycle management

- Policy driven life cycle governance
  - Automated metadata exchange across design and runtime
  - Prescriptive life cycle governance with out of the box governance policies



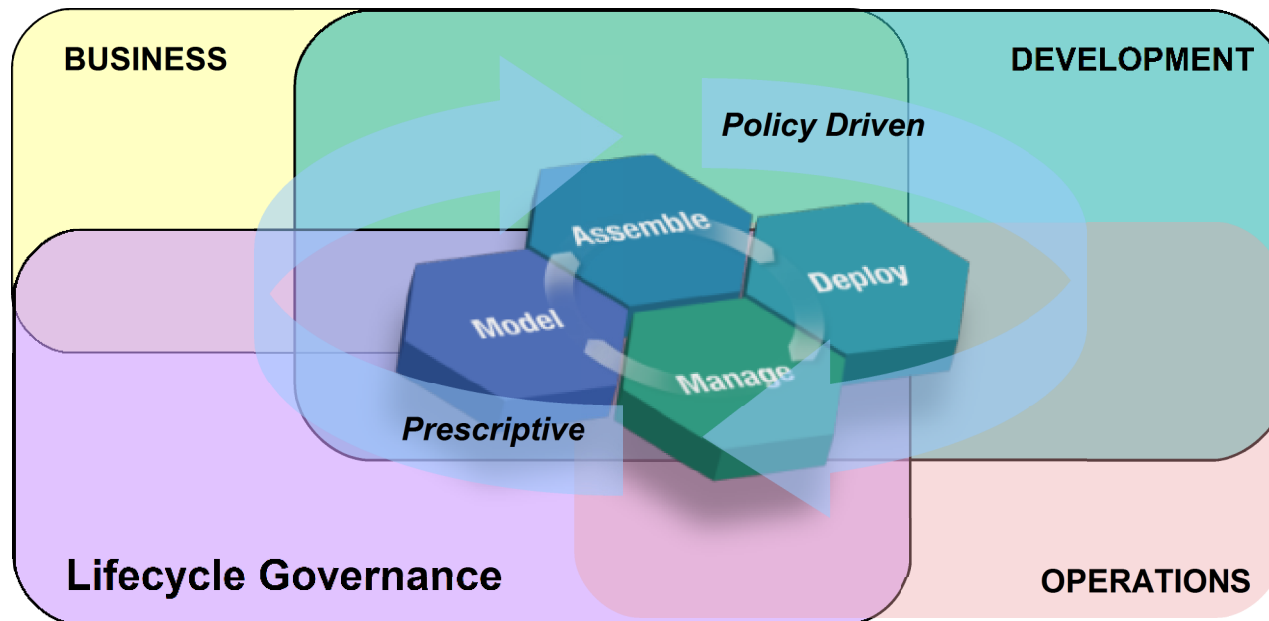
Business Unit Leader



Business Analyst



SOA CoE Chair



Development Manager

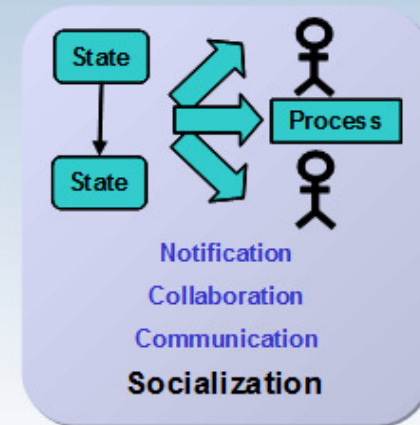
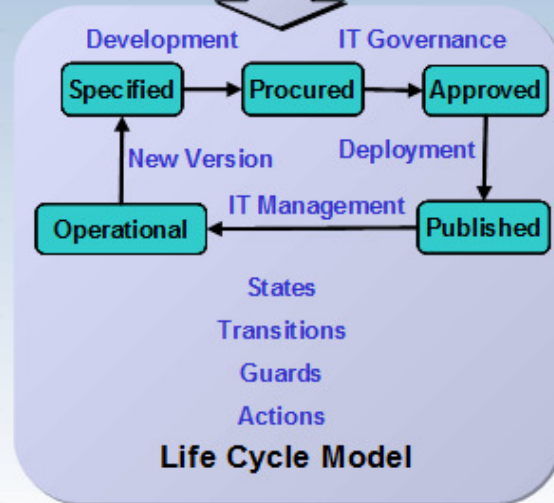
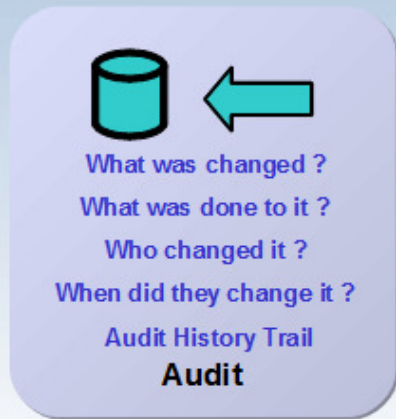
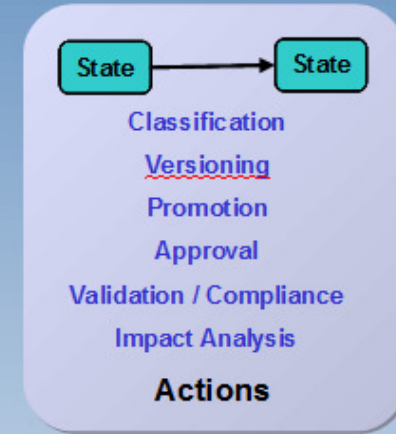
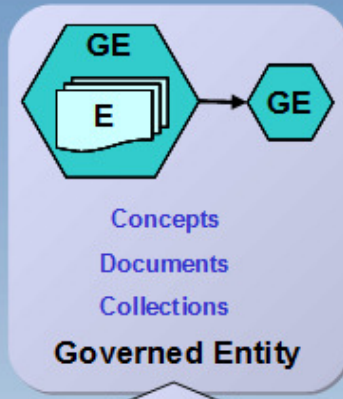


Release Manager



Operations Manager

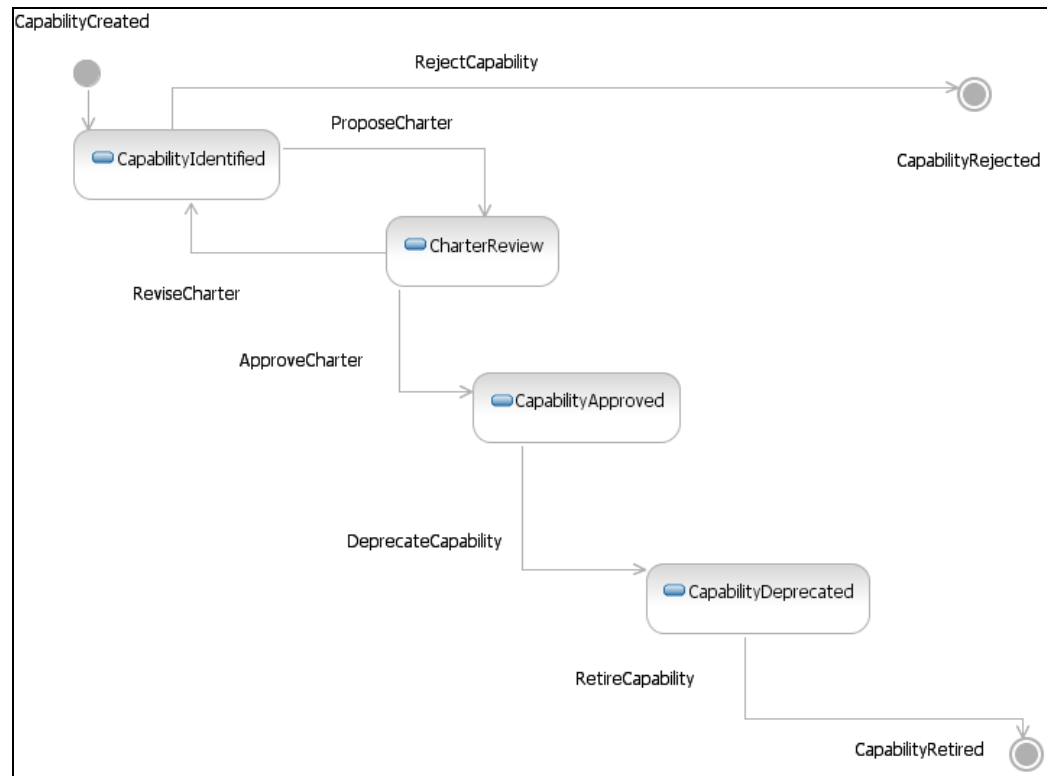
# Service Governance



# Service Governance through life cycle definition and validation

- WebSphere Service Registry and Repository enforces governance across the enterprise
- Different life cycles for different entities
- Transitions are possible:
  - ▶ When user has authority
  - ▶ When conditions are satisfied
- Automatic notification of change

e.g. Business Capability life cycle





# Comprehensive Auditing to Track Changes

- Activity logging Integrated into the product
- Provides details of what has changed
- User interface view shows the history of an object

WSDL Document ?

WSDL Documents > Echo.wsdl  
Details of the Echo.wsdl WSDL document.

Details Content Impact Analysis Governance Policy **Activity**

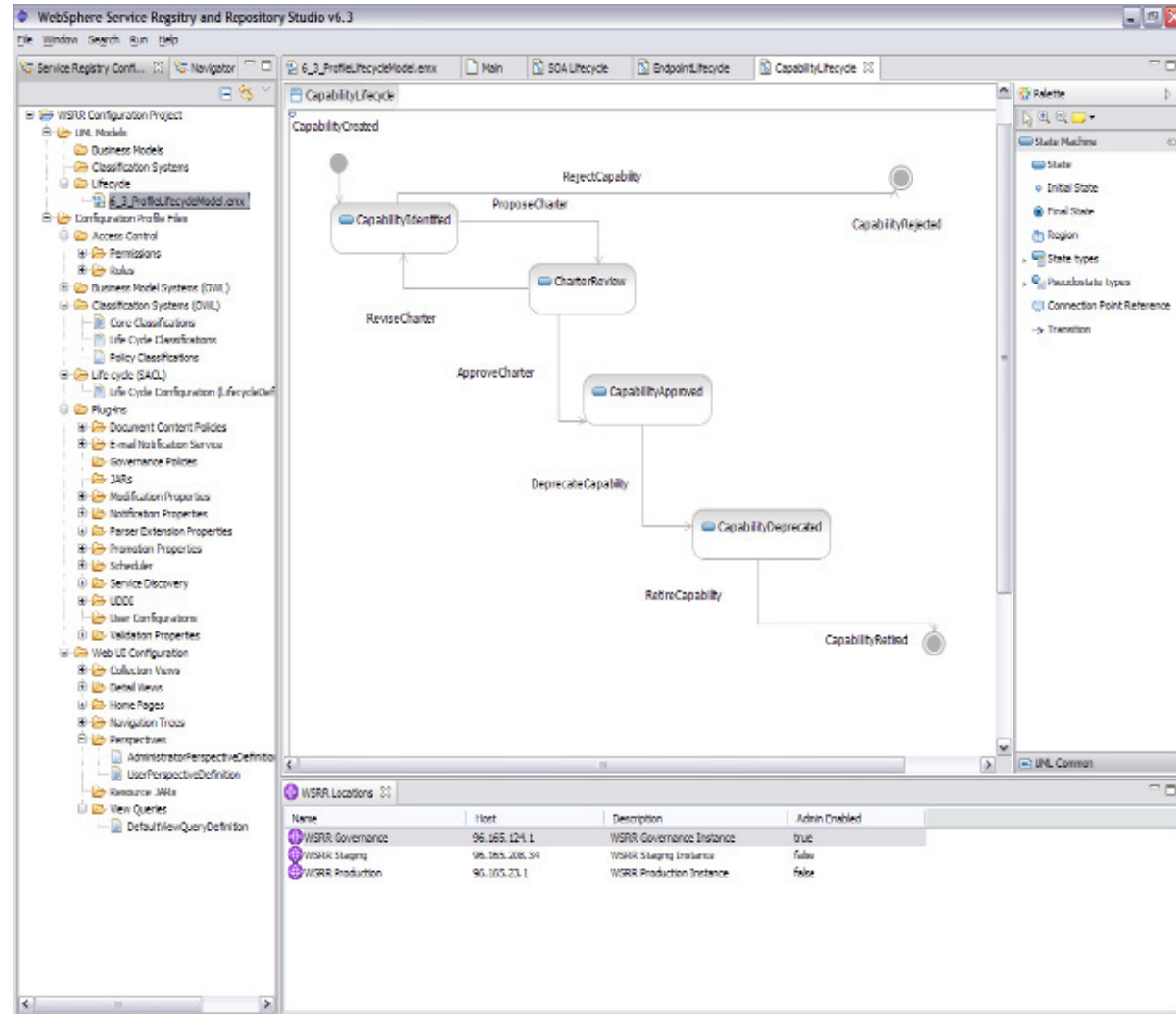
Date	User name	Activity
Mar 23, 2009 11:20:27 AM	was	Updated property named "lastModified" from value "1237807227479" to value "1237807227837".
Mar 23, 2009 11:20:27 AM	was	Deleted property "testProperty".
Mar 23, 2009 11:20:27 AM	was	Updated property named "lastModified" from value "1237807227105" to value "1237807227479".
Mar 23, 2009 11:20:27 AM	was	Updated property named "testProperty" from value "testValue" to value "testValueNew".
Mar 23, 2009 11:20:27 AM	was	Updated property named "lastModified" from value "1237807226668" to value "1237807227105".
Mar 23, 2009 11:20:26 AM	was	Deleted property "testProperty".
Mar 23, 2009 11:20:26 AM	was	Updated property named "lastModified" from value "1237807226403" to value "1237807226668".
Mar 23, 2009 11:20:26 AM	was	Updated property named "lastModified" from value "1237806786348" to value "1237807226403".
Mar 23, 2009 11:20:26 AM	was	Added property with name "testProperty" and value "".
Mar 23, 2009 11:13:16 AM	was	Created.

Page: 2 of 2 Total: 21

# WebSphere Service Registry & Repository Studio

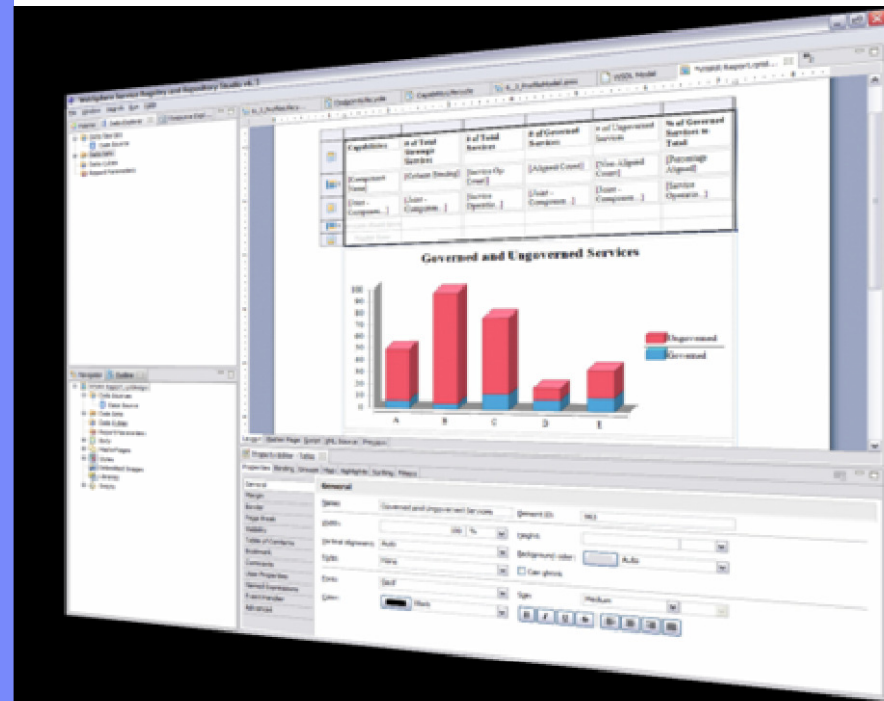


- Business Models – Visually model your service metadata using Unified Modeling Language (UML)
- Classification Systems – Visually create service taxonomies
- Lifecycles – Visually define service lifecycles and transitions



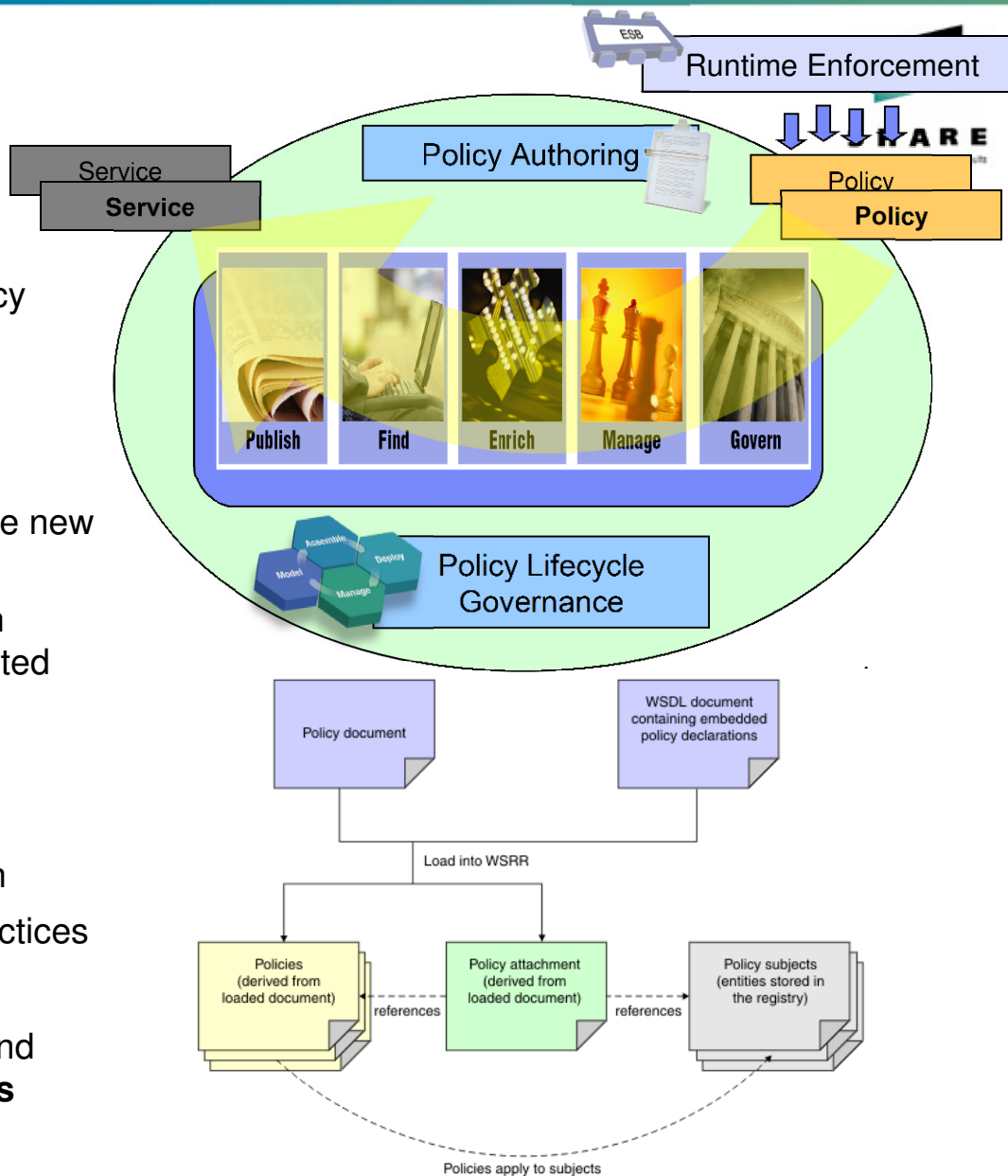
# WebSphere Service Registry & Repository can also be used to...

- Create reports
  - Queries can be run within WebSphere Service Registry and Repository and Business Intelligence and Reporting Tools (BIRT can be used to generate detailed reporting charts in a number of formats, including HTML, PDF and Excel.
- Manage WebSphere Service Registry and Repository content
  - You can publish and retrieve service documents.



# Policy Management

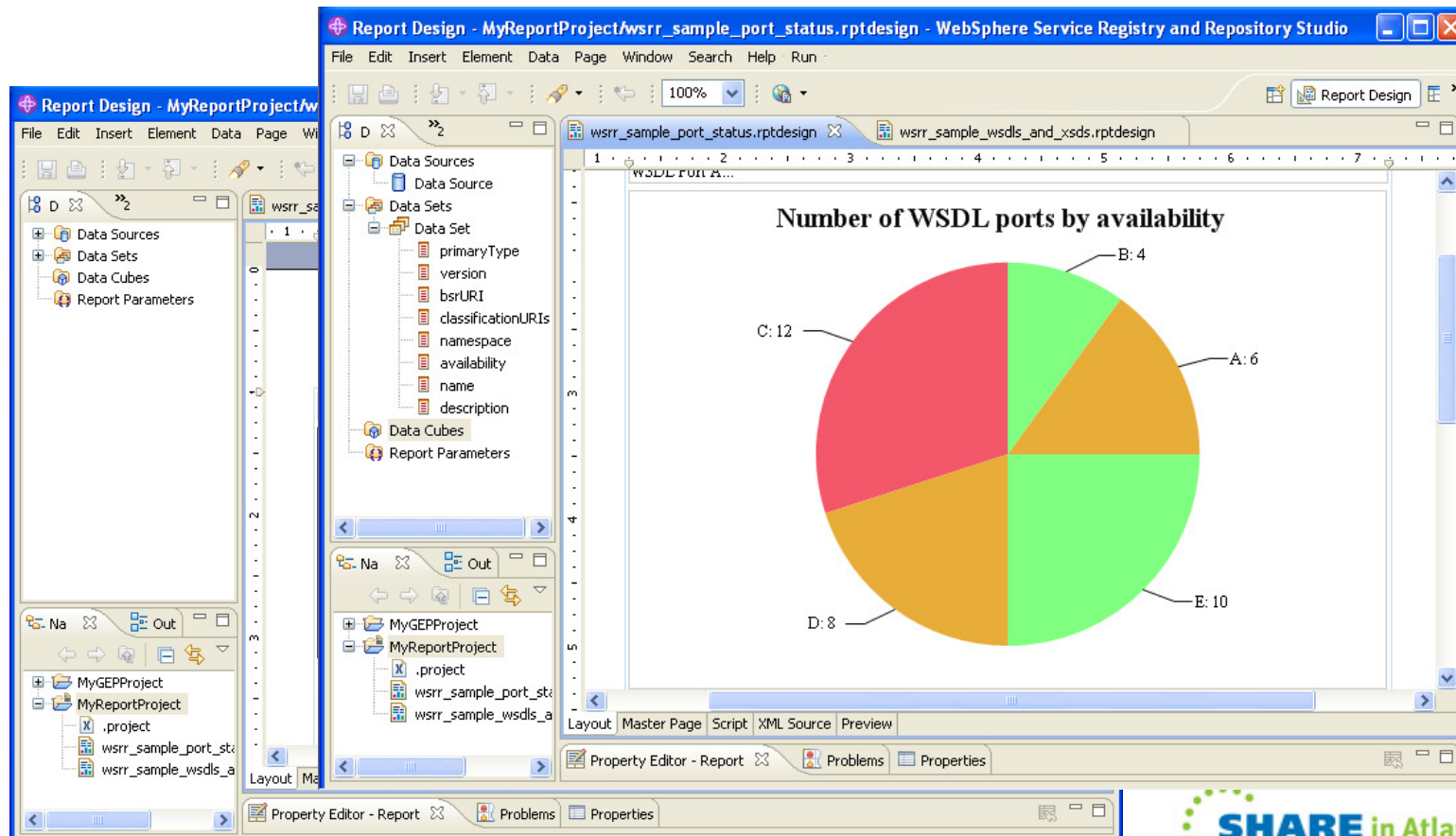
- **Govern the lifecycle of SOA Policies**
  - ▶ Validate, audit and report changes to policy
  - ▶ Ensure WS-I compliance
  - ▶ Enforce service governance policies
- Use **policy authoring** tools to easily create new policies
  - ▶ Associate policies to services to create an **authoritative source** of services and related metadata
- **Policy libraries**
  - ▶ Taxonomy for modeling any policy domain
  - ▶ Policies that capture governance best practices
- Enable enterprise service buses (ESBs) and other SOA products for **enforcing policies**



# WebSphere Service Registry and Repository Studio



- Configuration editing
- Content manipulation
- Business Intelligence and Reporting Tools (BIRT) reporting





# Business Space - Policy Analytics



Home | Go to Spaces | Manage Spaces | Actions | admin | Help | Logout

## Analytics

Policy Analytics | WS-I Compliance Report | Detail

Service Registry Analytics Governance Policy Execution Overview

1D 7D 1M 3M 6M MTD YTD 1Y 2009/01/01 - 2009/10/09 Refresh

Select date range

Determine worst performing Policies

Metrics of All Governance Policies

Applications of the selected Policy

Selected Policy Pass/Fail Metrics

Governance Policy Validator error messages

**Overall Policy Pass and Failure Rate**

Failed 61 (70.1%)  
Passed 26 (29.9%)  
Total = 87

**Top Failing Policies**

Policy Name	Number of Applications
MyPropAssertion	~28
SLASLDCardinalityCheck	20
MyPropAssertionLongLongLongLongName	~5
MyPropAssertionNew	~3
MyPropAssertion2	~1

**Service Registry Analytics Governance Policy Execution Detail**

SLASLDCardinalityCheck | 1D 7D 1M 3M 6M MTD YTD 1Y 2009/01/01 - 2009/10/09

**SLASLDCardinalityCheck Pass and Failure Rate**

Number of Applications

Policy Outcome: Passed, Failed

Total = 20

**SLASLDCardinalityCheck Failure Instances**

Date and Time (GMT Daylight Time)	Subject
Sep 23, 2009 10:50:31 AM	MyBusinessSLA
Sep 10, 2009 11:33:12 AM	MyBusinessSLA
Sep 10, 2009 11:33:07 AM	MyBusinessSLA

1 - 3 | 20

**Messages for policy SLASLDCardinalityCheck failure on Sep 10, 2009 11:33:12 AM, Subject = MyBusinessSLA**

Message code	Message
GSR1420	RelationshipAssertion: SLASLDCardinalityCheck: The SLA must have at least one associated SLD in order to perform the 'Request SLA', 'Approve SLA Request' or 'Activate SLA' transition.. There are not enough target objects on this relationship. The minimum is 1

1 | 1



# WebSphere Service Registry and Repository - Summary



- WebSphere Service Registry and Repository provides:
- Master reference for service definitions
- Service governance
- Integration
  
- It includes
- Management of WS-Policy documents
- WebSphere Service Registry and Repository Studio
- Business Space user interface

# Questions



A woman in a blue business suit is sitting at a desk with a laptop. She is smiling and raising her right fist in a celebratory gesture. The background is a bright, modern office setting with large windows. The text "Thank You" is overlaid in the center of the image.

# Thank You