



Deployment Planning and Automation:  
*Aligning Business, IT and Operations with a Model-Driven Approach*

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IBM Software

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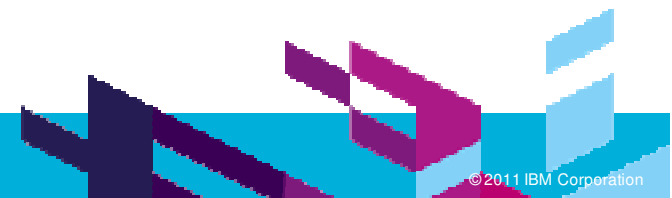
**Software. Everywhere.**

**August 9-11, Bangalore | August 11, Delhi**



## Agenda

- **The Problem**
- IBM Deployment Planning & Automation Solution
- Sample Client Scenarios
- Q&A



## Deployment is a Complex Problem

- **Development and Operations teams collaboration challenges**

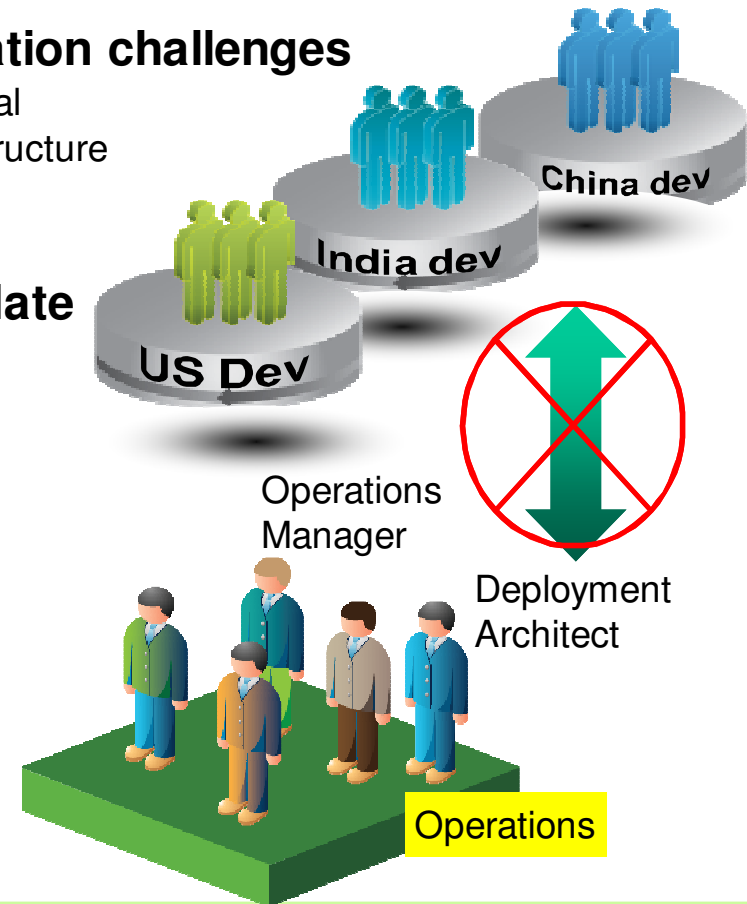
- ▶ Hand-off from development teams is inconsistent and manual
- ▶ Application component requirements do not match IT infrastructure

- **Deployment requirements are difficult to validate**

- ▶ Enterprise, Software & IT architects all use different formats
- ▶ No standardization or templates for reuse

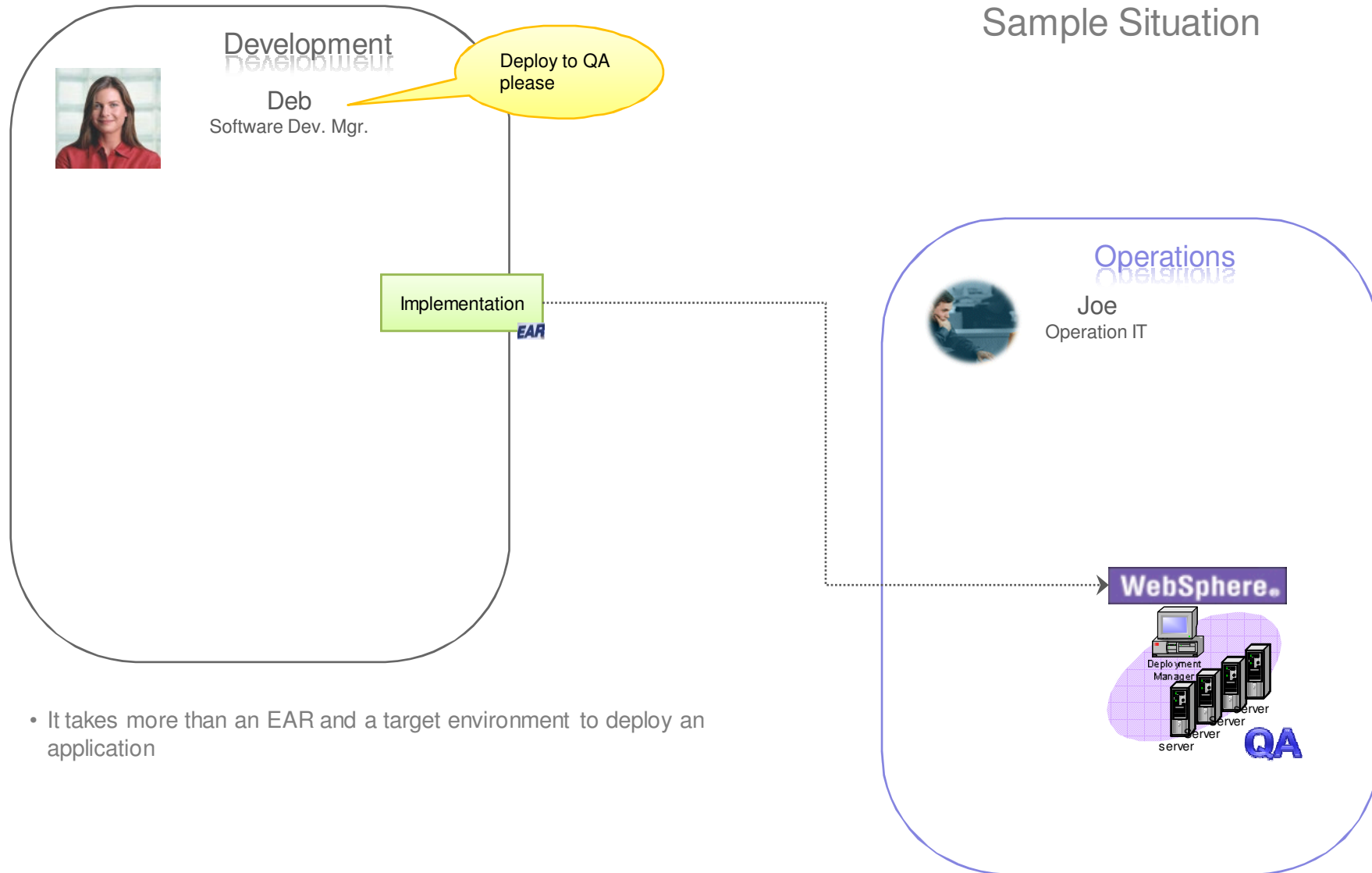
- **Complex series of steps**

- ▶ Deployment engineers often execute manual steps
- ▶ Not repeatable, prone to error
- ▶ Automations are hard to build, maintain and reuse
- ▶ Hard to tell what if the right things were installed



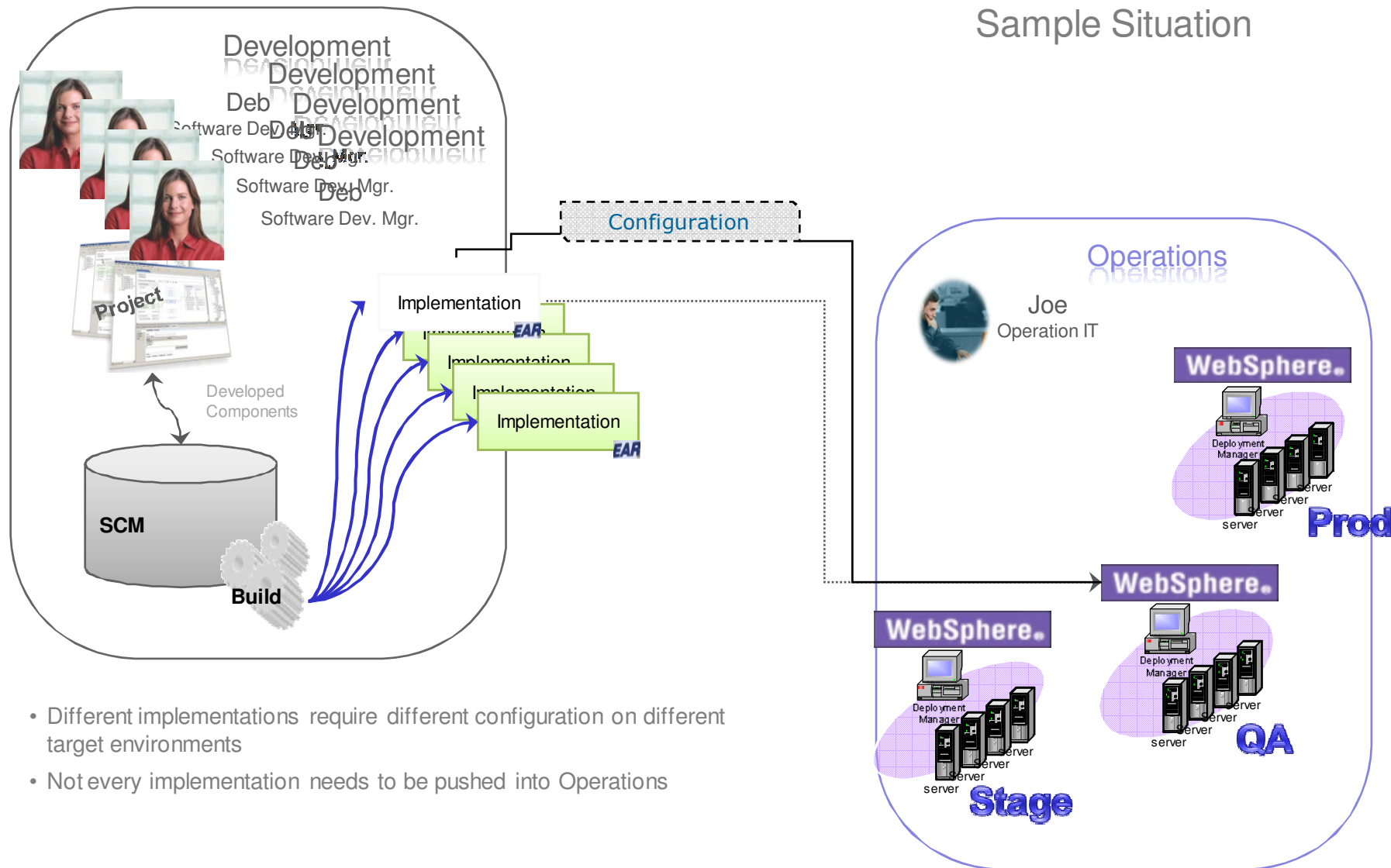
- ✓ 50% of applications put into production are later rolled back *(Gartner)*
- ✓ 60% - 80% of an average company's IT budget is spent on maintaining existing applications *(Intelligent Enterprise.com)*
- ✓ Software related downtime cost industries almost \$300 billion annually *(CENTS - Comparative Economic Normalization Technology Study)*

## Sample Situation



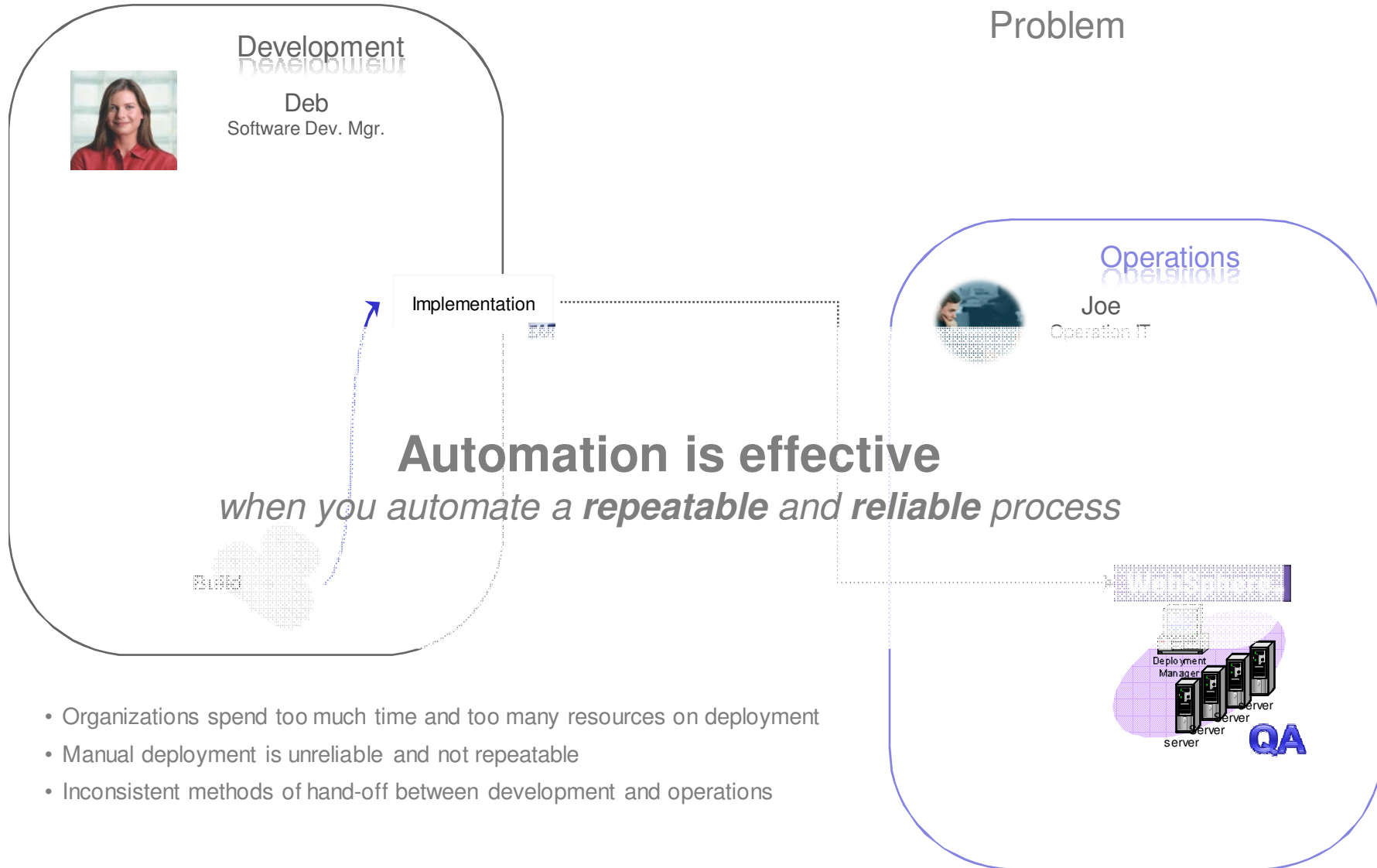
- It takes more than an EAR and a target environment to deploy an application

## Sample Situation



- Different implementations require different configuration on different target environments
- Not every implementation needs to be pushed into Operations

Problem



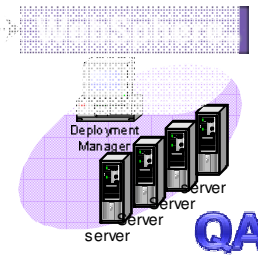
Development  
Deb  
Software Dev. Mgr.



Implementation

Automation is effective  
when you automate a *repeatable* and *reliable* process

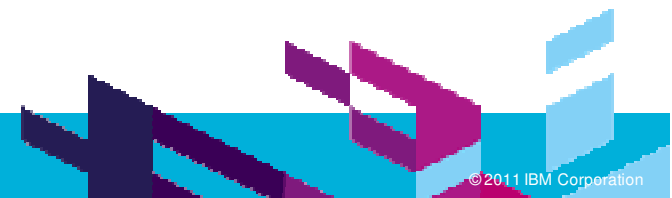
Operations  
Joe  
Operation IT



- Organizations spend too much time and too many resources on deployment
- Manual deployment is unreliable and not repeatable
- Inconsistent methods of hand-off between development and operations

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- **IBM Deployment Planning & Automation Solution**
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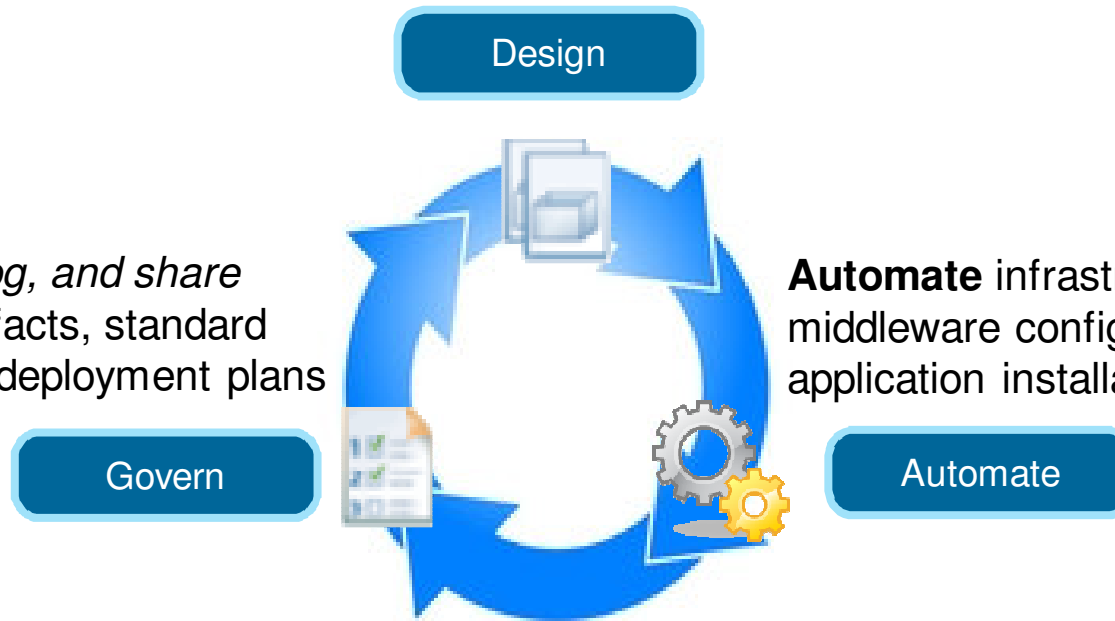
# IBM Deployment Planning and Automation

*Improving collaboration between Development and Operations teams*

**Design** your desired deployment using discovered resources and standard configuration templates

**Govern**, catalog, and share application artifacts, standard templates and deployment plans

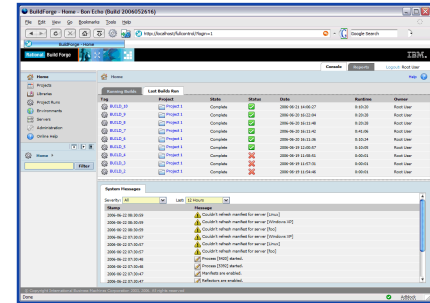
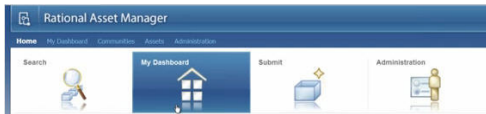
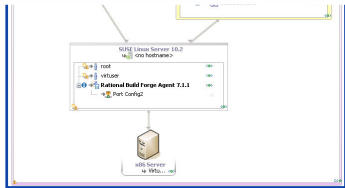
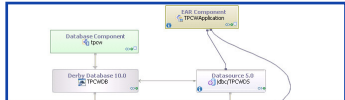
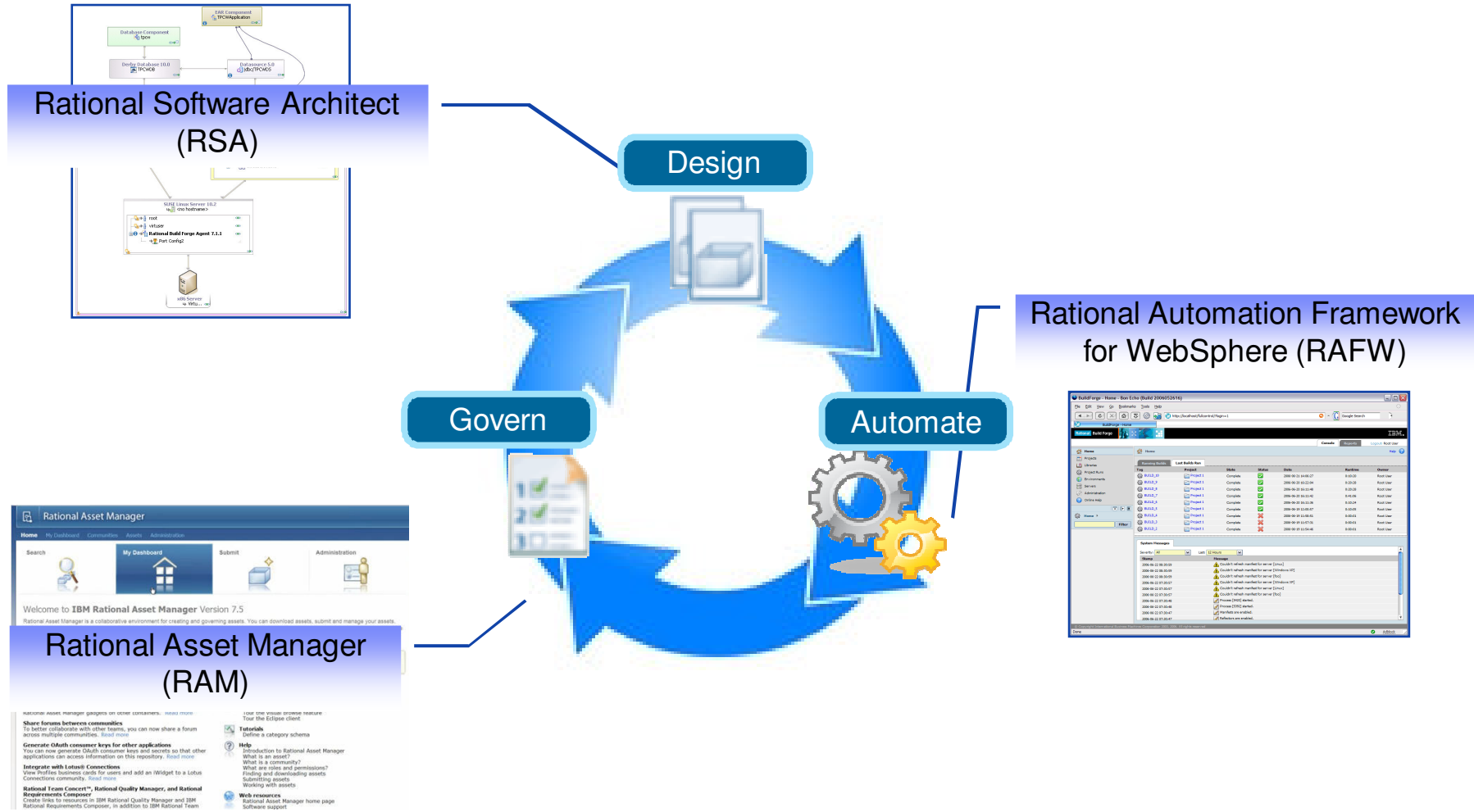
**Automate** infrastructure provisioning, middleware configuration, and application installation



*Speed the delivery of high quality applications to physical, virtual, and cloud environments*

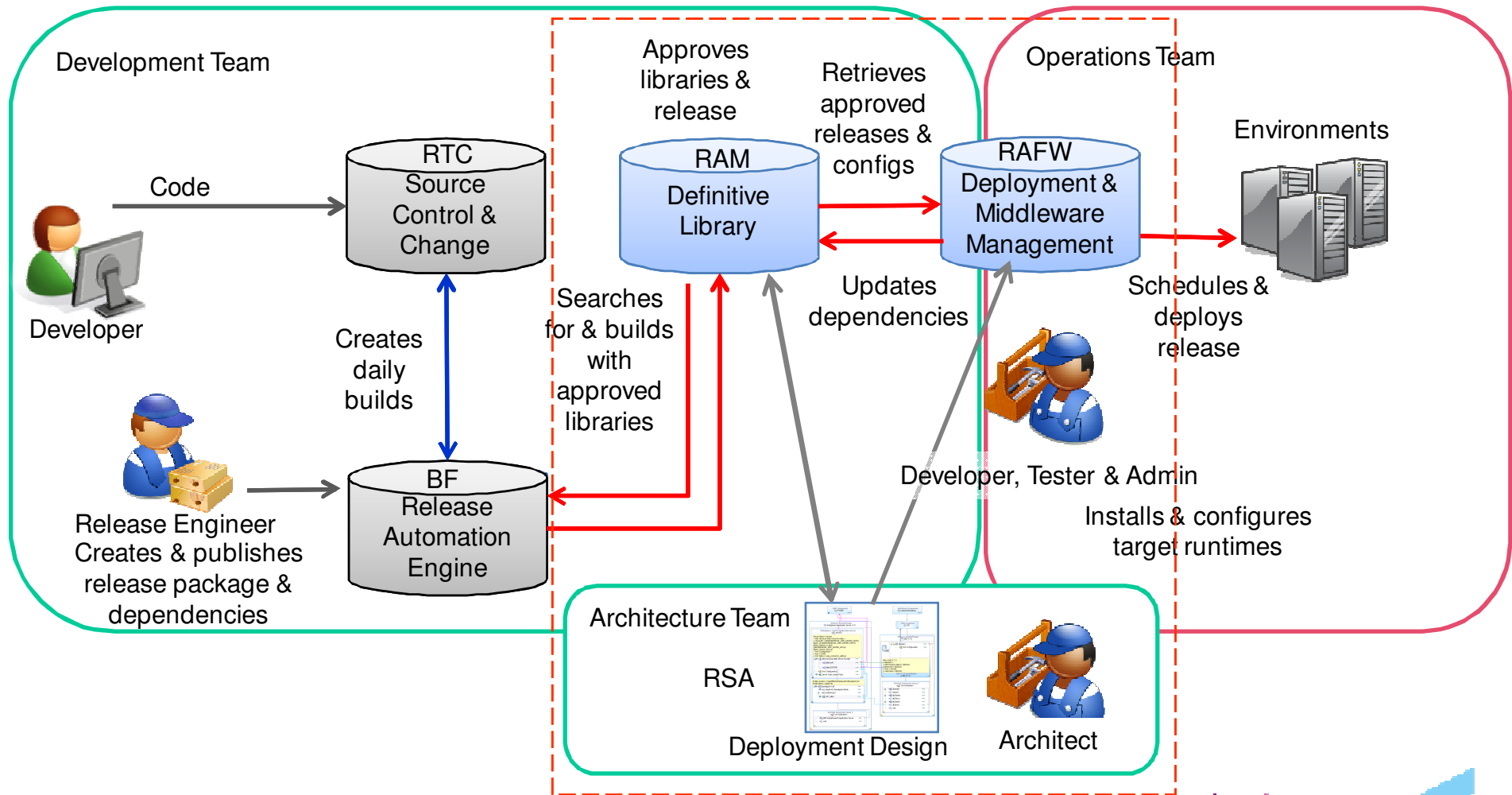


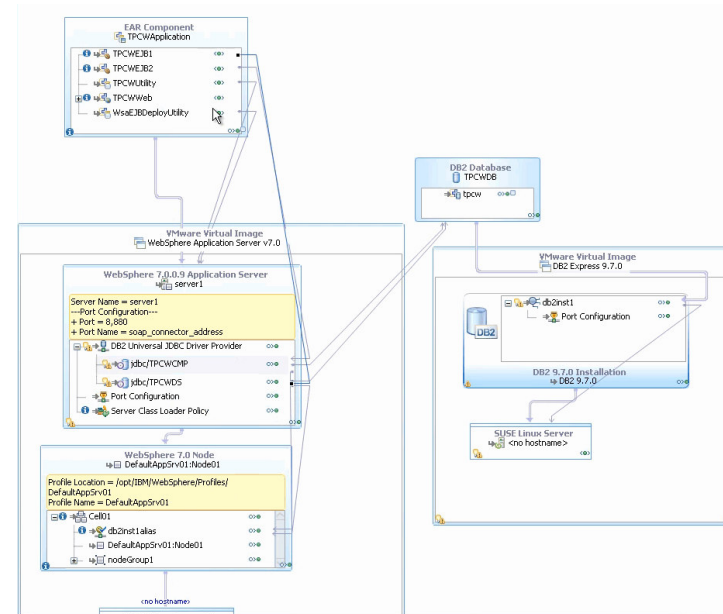
# IBM Deployment Planning and Automation Product Mapping



# IBM's software release management solution

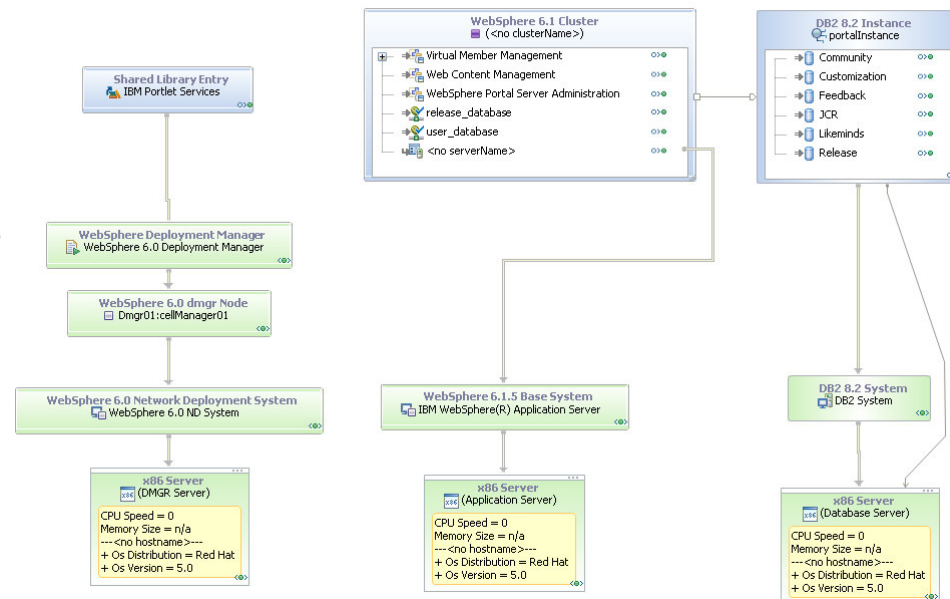
## Software automation, deployment, and management





# Deployment Design

- **Smarter Deployment Design**
  - ▶ Communicate and validate IT deployments to avoid costly problems late in the application lifecycle
- **Deployment Template Design and Reuse**
  - ▶ Capture and reuse organizational standards to quickly and easily plan deployments
- **Datacenter Discovery**
  - ▶ Quickly construct a topology describing what you have in your infrastructure
- **Integrated Automation Generation**
  - ▶ Generate standard deployment automations from approved designs

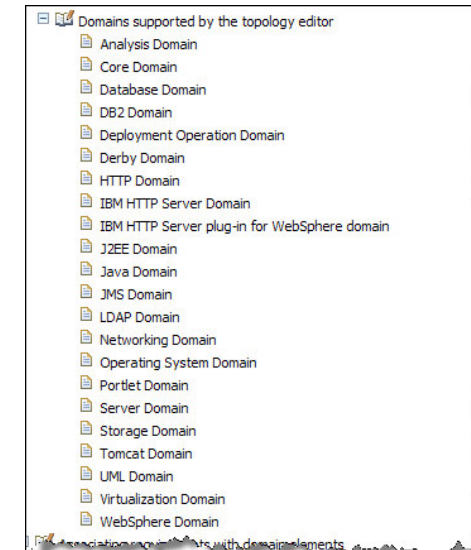
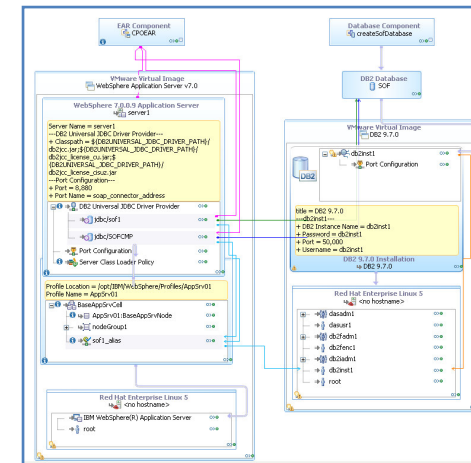


Rational Software Architect  
Extension for Deployment Automation Planning

## RSA Extension for Deployment Planning and Automation Capabilities

### Smarter Deployment Design

- **Rich UI Diagramming**
  - ▶ Multiple views over the same data
  - ▶ Layers and re-usable appearances
  - ▶ Validation feedback in diagrams
- **Backed by a rich semantic model**
  - ▶ Simple Extensible XML format
  - ▶ Supports wide range of Technology domains
  - ▶ Model changes reflected automatically in all diagrams
  - ▶ Constraints and validation with Quick Fix resolutions
- **Which can be reported upon**
  - ▶ BIRT report templates

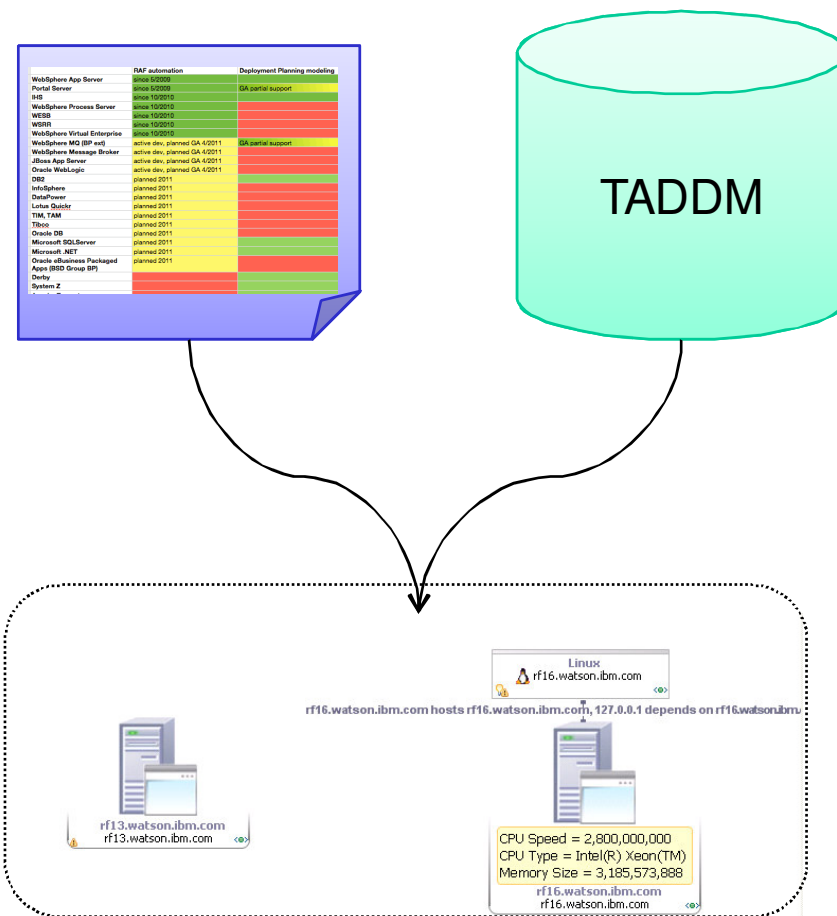


### Deployment Template Design and Reuse

- Integration with Rational Asset Manager provides the ability to categorize, index, search, and re-use existing standard template topologies to supported a governed process.

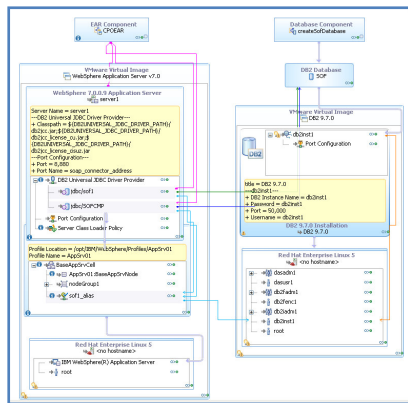
## RSA Extension for Deployment Planning and Automation Capabilities Datacenter Discovery

- Improved integration with Tivoli Application Dependency and Discovery Manager
  - Advanced WebSphere environment discovery
- Import datacenter information captured in spreadsheets



# RSA Extension for Deployment Planning and Automation Capabilities

## Automation Design



**Deployment Topology**

Analyze & Generate

Reference

Automation Plan

Task name: provision\_virtual\_machine

Description: provision\_virtual\_machine (WebSphere)

Automation actor: DB2 9.7.0

```
var workflow_name="Provision_VM_in_TSAM"
var VMwareServerId=DCMQuery(/server[@name=${ImageServer}])@id
var VMwareImageId=DCMQuery(/server[@name=${ImageName}])@id
```

Name	Source Attribute	Value
workflow		Provision_VM_in_TSAM
imageName	DB..._0_imageId	VMware Template -- HIC_V_RHEL_54_32-COE
instanceName	DB..._0_notes	DBExpress971
imageServer		xs0526.spc.hursley.ibm.com

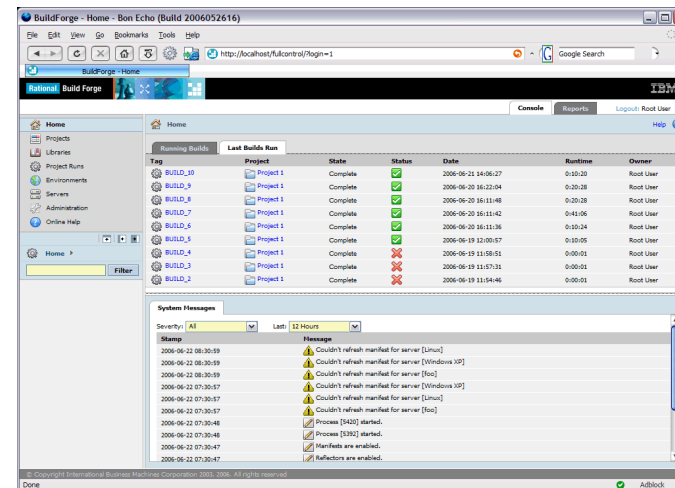
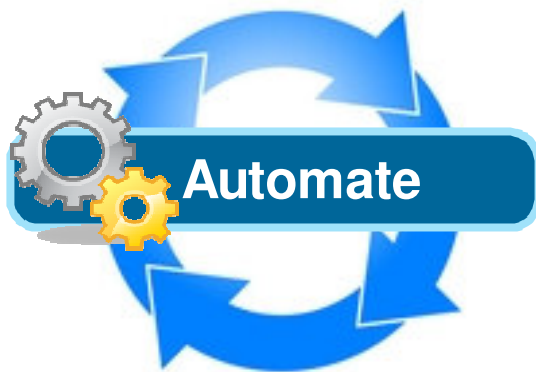
Name	Target Attribute	Value
hostname	db..._1_hostname	

Publish



RAF

- Analyze topology and generate automation tasks
- Parameters and configuration files derive their values from the model
- Single source of truth provides pre-deployment validation and problem identification
- Allows post-generation adjustments as needed





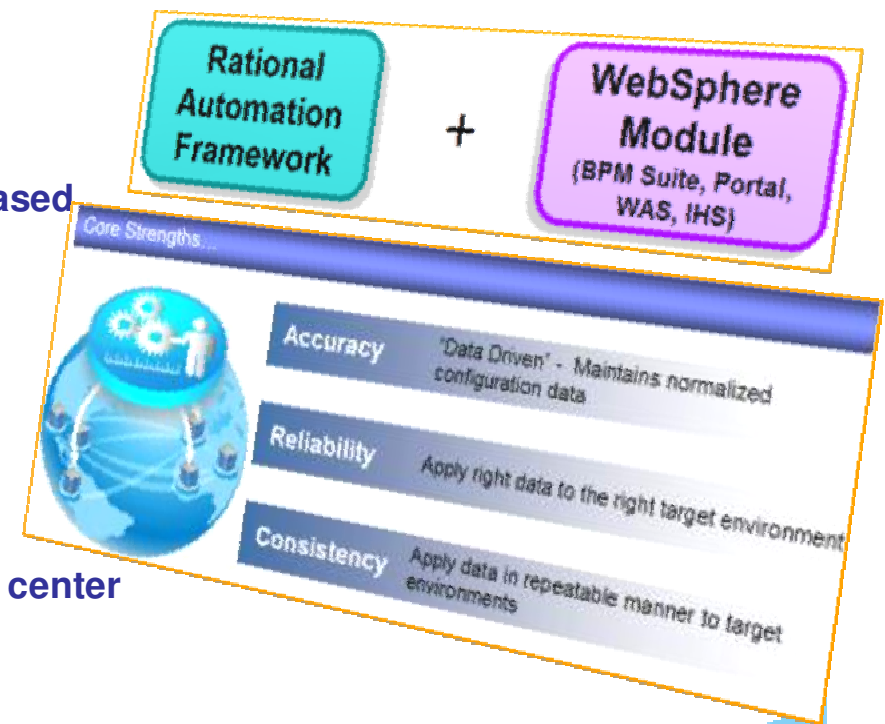
## Rational Automation Framework for WebSphere

*A robust, extensible, and customizable framework that provides:*

- *Deployment automation*
- *Configuration management automation*
- *Installation, patch, and fix automation*

- *Increase staff productivity*
- *Improve speed, consistency and accuracy*
- *Reduce costs of compliance and IT governance*
- *Improve Disaster Recovery readiness*

- **Over 900 out-of-the-box automation actions for:**
  - ▶ WebSphere Foundation: WAS, ND, IHS, WAS FEPs, WVE
  - ▶ WebSphere BPM Suite: WPS, WESB, WSRR
  - ▶ WebSphere Portal
- **Ensure configuration consistency & facilitate team-based administration and QOSs** for:
  - ▶ Scheduling
  - ▶ Unattended execution
  - ▶ Notifications
  - ▶ Role-based security
  - ▶ Audit logging
- **Workflow management and control in enterprise data center environments** via integration with:
  - ▶ RAM, RSA
  - ▶ TSAM, TPM





Properties Topology Status Layers Cloud Management Cloud Details Assets Publish Report

Search returned 30 assets in 375 ms

Name	Version	State	Community	Rating
WebSphere sMash	1.0	Approved	Cloud Computing Core ...	★★★★
WebSphere Portal/WCM 6.1.5-3	1.0	Approved	Cloud Computing Core ...	★★★★
WebSphere Feature Pack for OSGi Apps and JPA 2.0	1.0	Approved	Cloud Computing Core ...	★★★★
WebSphere Application Server and ...		Approved	Cloud Computing Core ...	★★★★
suse2 10/6/09 2:13 AM				
SUSE 10 SP2				
Small System Size				

**Rational Asset Manager**

Home My Dashboard Communities Assets Administration

Search My Dashboard Submit Administration

Welcome to IBM Rational Asset Manager Version 7.5

Rational Asset Manager is a collaborative environment for creating and governing assets. You can download assets, submit and manage your assets, and review, rate, and discuss assets. Administrators configure the repository with asset types, category schemas, review processes, and user roles. Use the links on this page to get started or learn more.

**Announcements**  
There are currently no announcements.

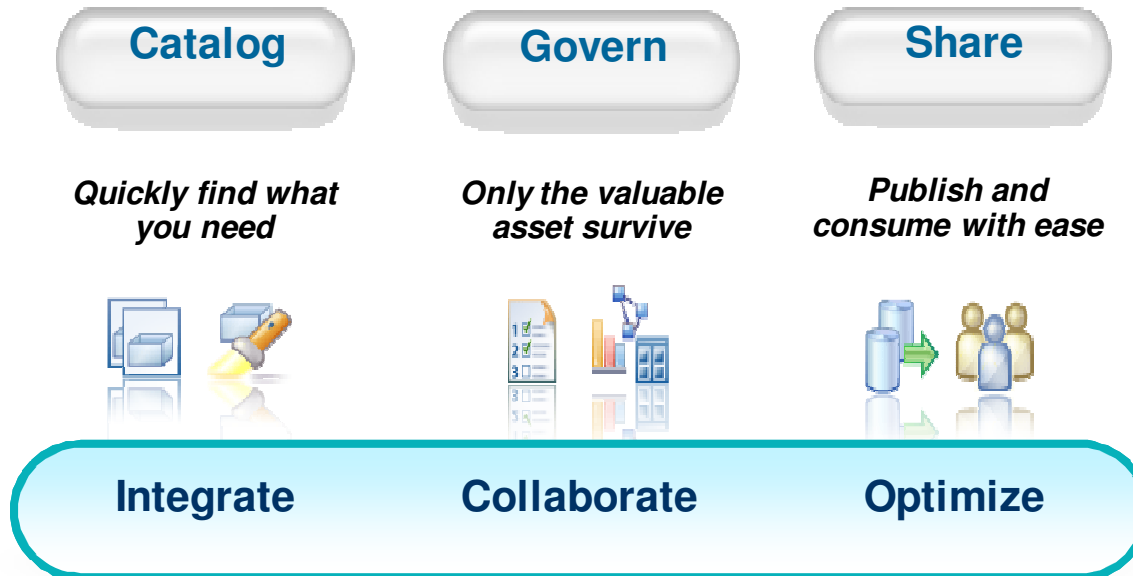
**What's New**

- Add OpenSocial gadgets to assets**  
Embed dynamic gadgets on the General Details page of an asset or put Rational Asset Manager gadgets on other containers. [Read more](#)
- Share forums between communities**  
To better collaborate with other teams, you can now share a forum across multiple communities. [Read more](#)
- Generate OAuth consumer keys for other applications**  
You can now generate OAuth consumer keys and secrets so that other applications can access information on this repository. [Read more](#)
- Integrate with Lotus® Connections**  
View Profiles business cards for users and add an iWidget to a Lotus Connections community. [Read more](#)
- Rational Team Concert™, Rational Quality Manager, and Rational Requirements Composer**  
Create links to resources in IBM Rational Quality Manager and IBM Rational Requirements Composer, in addition to IBM Rational Team

**Learn**

- Tours**  
Tour the Web client  
Tour the visual browse feature  
Tour the Eclipse client
- Tutorials**  
Define a category schema
- Help**  
Introduction to Rational Asset Manager  
What is an asset?  
What is a community?  
What are roles and permissions?  
Finding and downloading assets  
Submitting assets  
Working with assets
- Web resources**  
Rational Asset Manager home page  
Software support

# Asset Reuse and Management



- Catalogue, organize, use, reuse, manage and report on assets
- Deliver high-quality software solutions faster to market
- Reduce implementation and maintenance costs

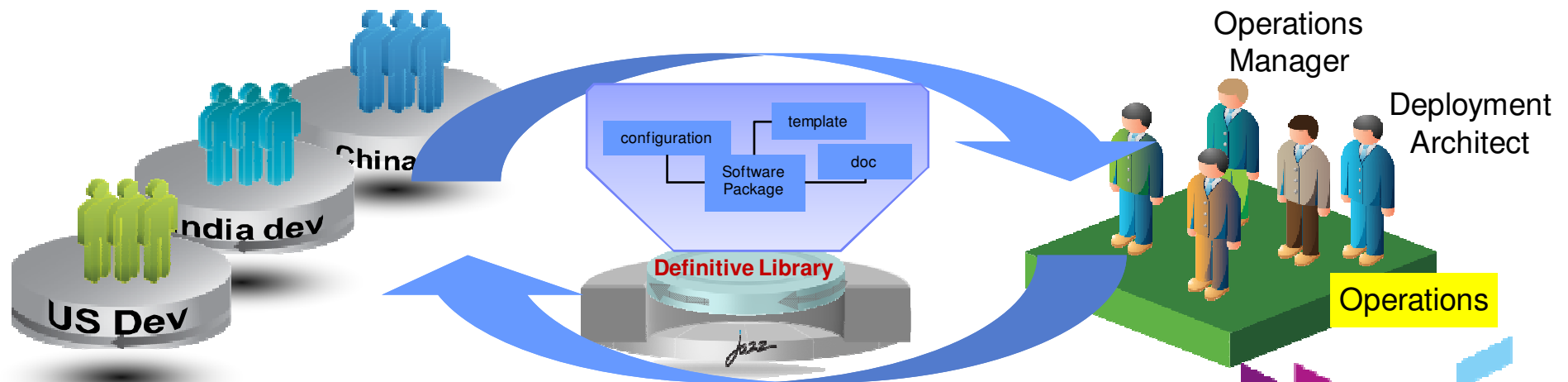
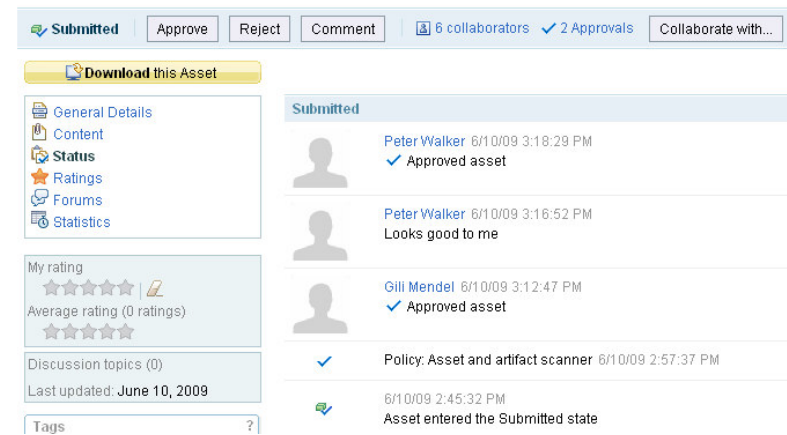
# Definitive Media Library

## Rational Asset Manager Capabilities

Deploy the right deliverables, with the right plan, using the right automation

Gain control over the:

- **People** who are stakeholders in the decision making
- **Workflow** to manage sharing
- **Policies** to enforce rules
- **Access permissions** to control access
- **Traceability and auditing** for plans and automations



## Agenda

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- IBM Deployment Planning & Automation Solution
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- Q & A



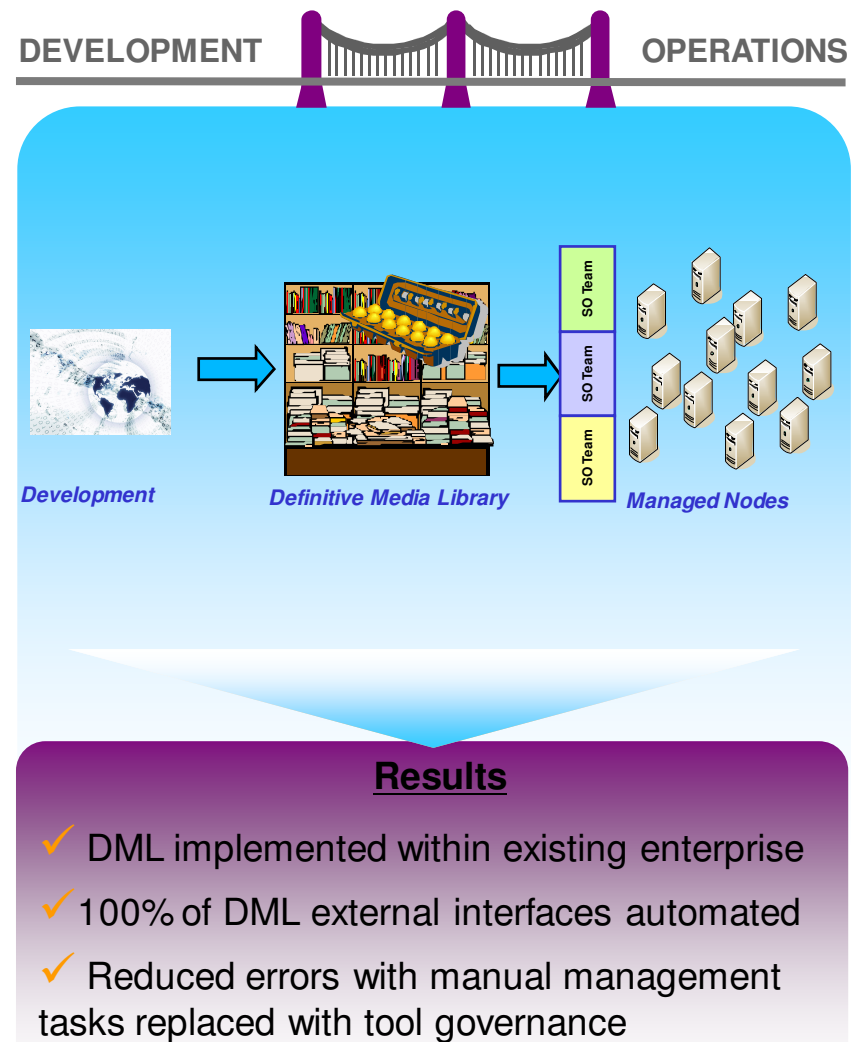
## Scenario 1: Definitive Media Library

### Situation

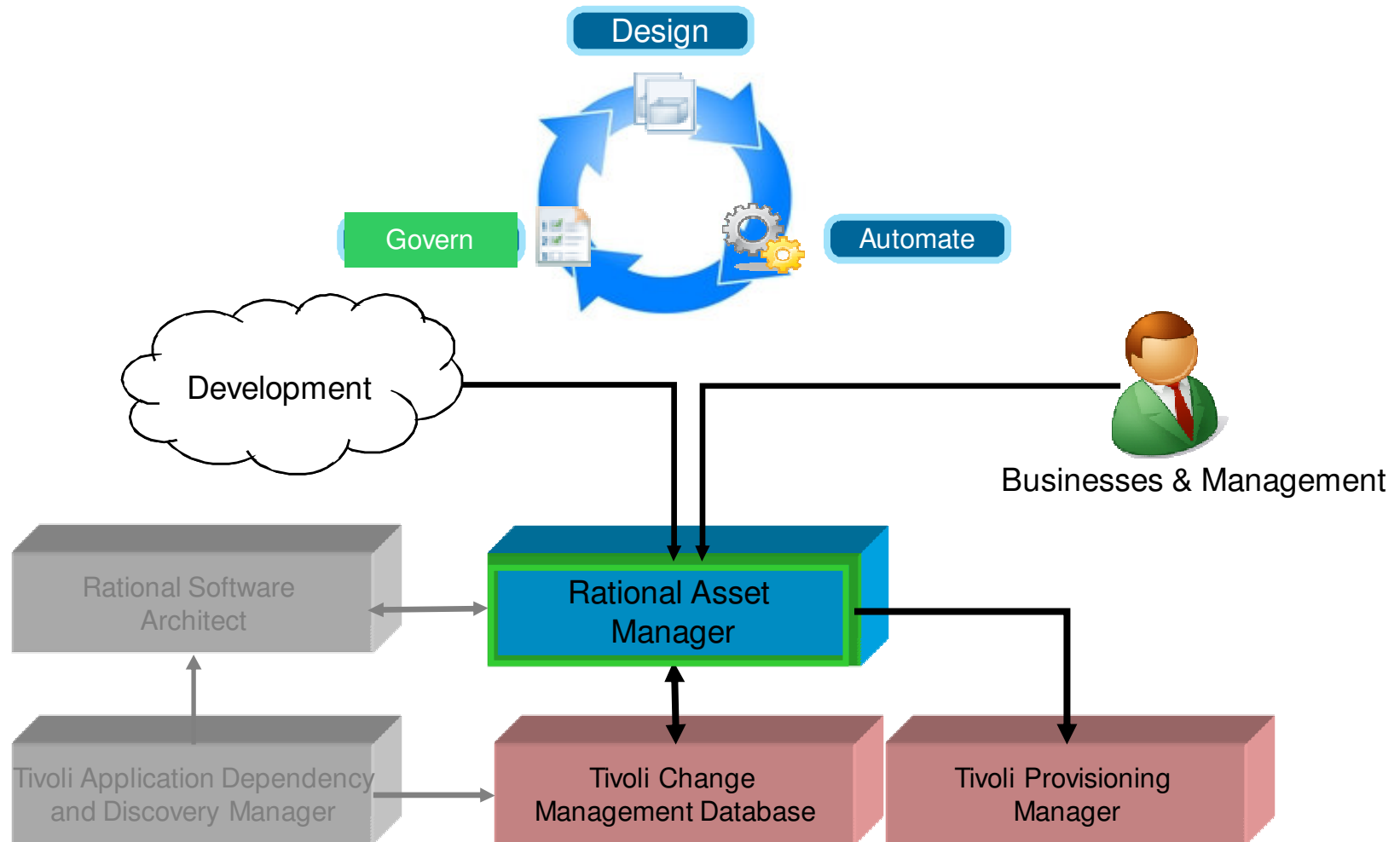
- Manual infrastructure management
- Strategic Outsourcing teams managed as black boxes
- Service requests require manual actions for each step in the process, and are handled differently for each SO team

### Solution

- Collaborate development, deployment and operations in a single governed management environment
- Begin collaboration early in the development lifecycle
- Ensure governance processes are used across on & off shore teams
- Improve visibility for auditing and then impact analysis



# Scenario 1: Definitive Media Library - Solution



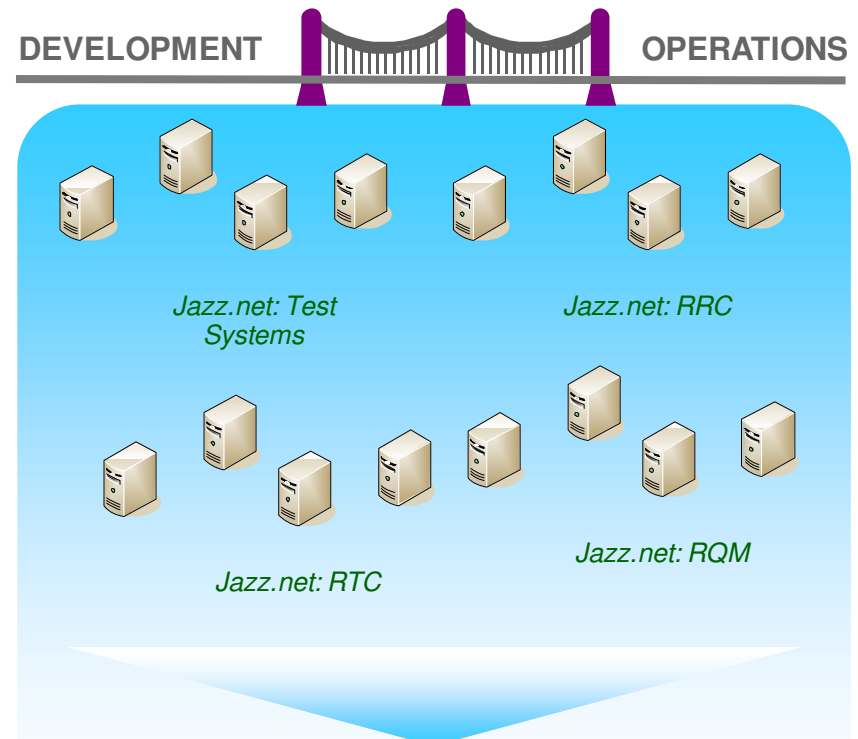
## Scenario 2: Internal *jazz.net* Deployment

### Situation

- Team needs to deploy builds to support In-house development releases for *jazz.net*
- Manual deployment of the application takes at least 30 mins per system
- Internally hosted production systems supporting many IBM teams that require partially manual upgrades

### Solution

- Use Rational Automation Framework for Websphere to create automation that deploys the new WAR files
  - Add custom steps where necessary
- Consolidate the existing automation with the new automation into an automation project
  - Team can run everything from a single interface

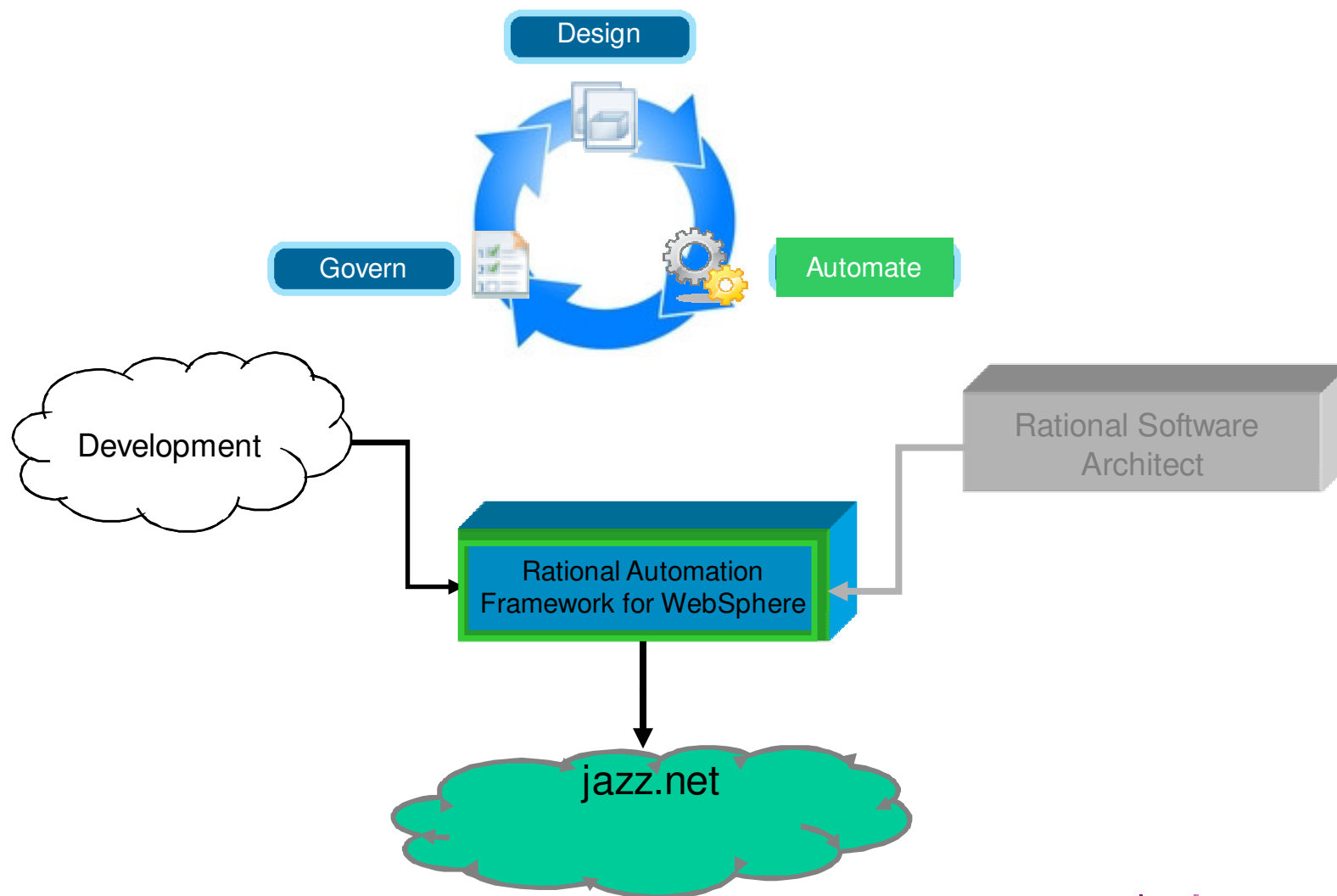


### Results

- ✓ Manual time saved is well over 100 hours
- ✓ But system down time (impacting entire development teams) in the 1000's of hours



## Scenario 2: Deploying to *jazz.net* - Solution



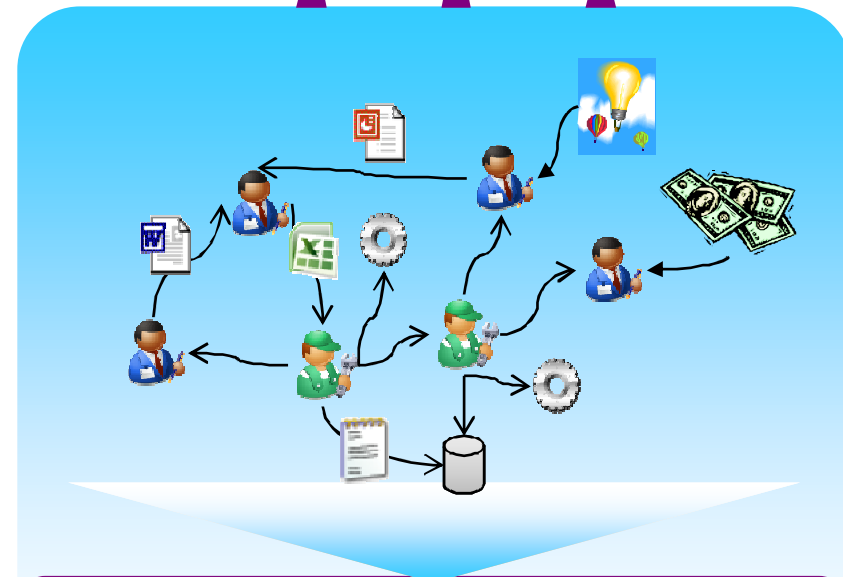
## Scenario 3: Integrated Architecture Planning

### Situation

- New Business Capabilities are established incrementally world wide with little to no reuse or replication for new programs
- Poor management of IT information across the organization
- Inability to harvest and communicate deployment patterns to achieve efficient and automated reuse

### Solution

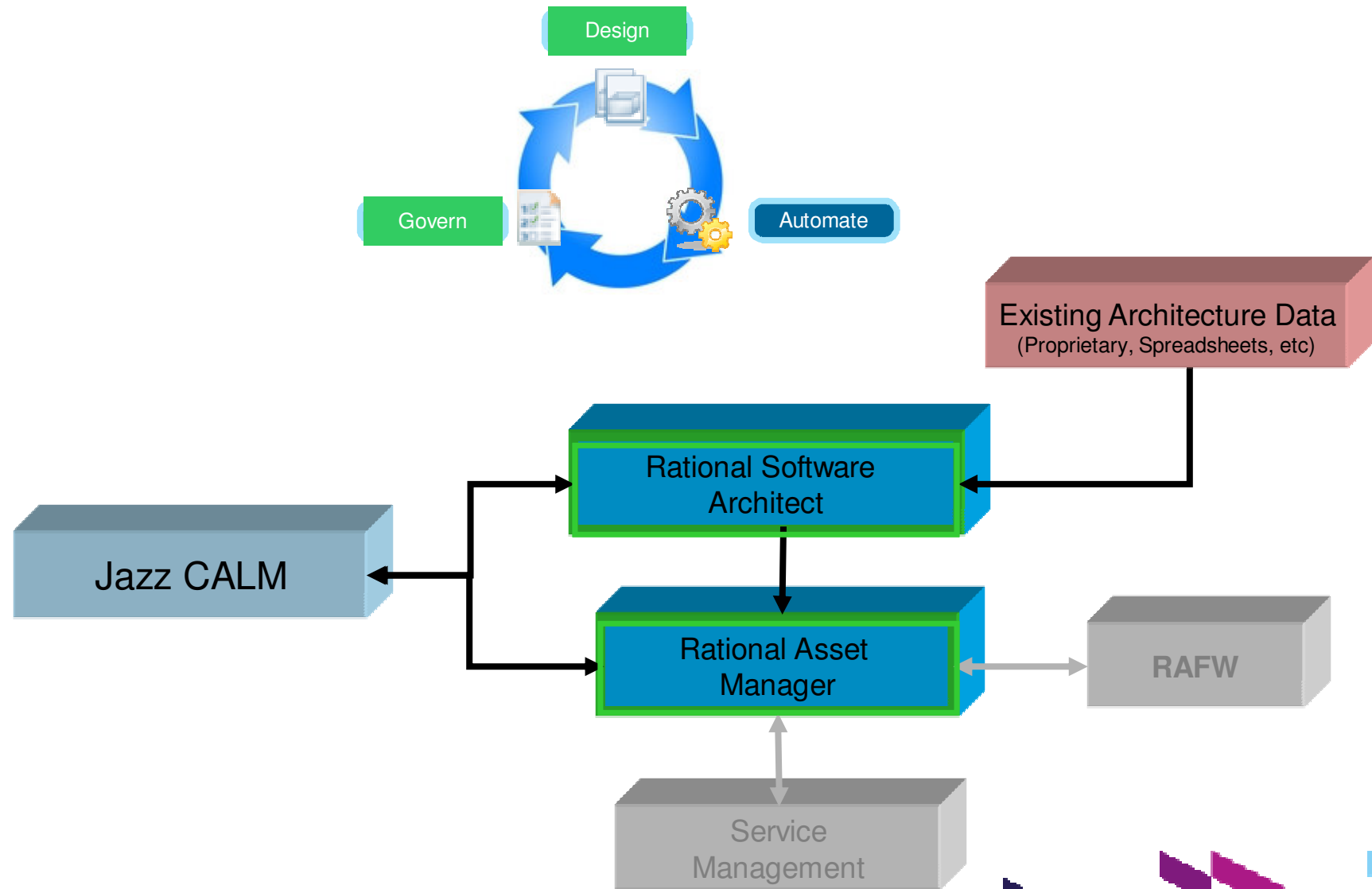
- Move away from “soft” data formats to domain specific models
- Leverage asset library to govern patterns and architecture
- Implement an integrated lifecycle process to capture the essence of the architecture



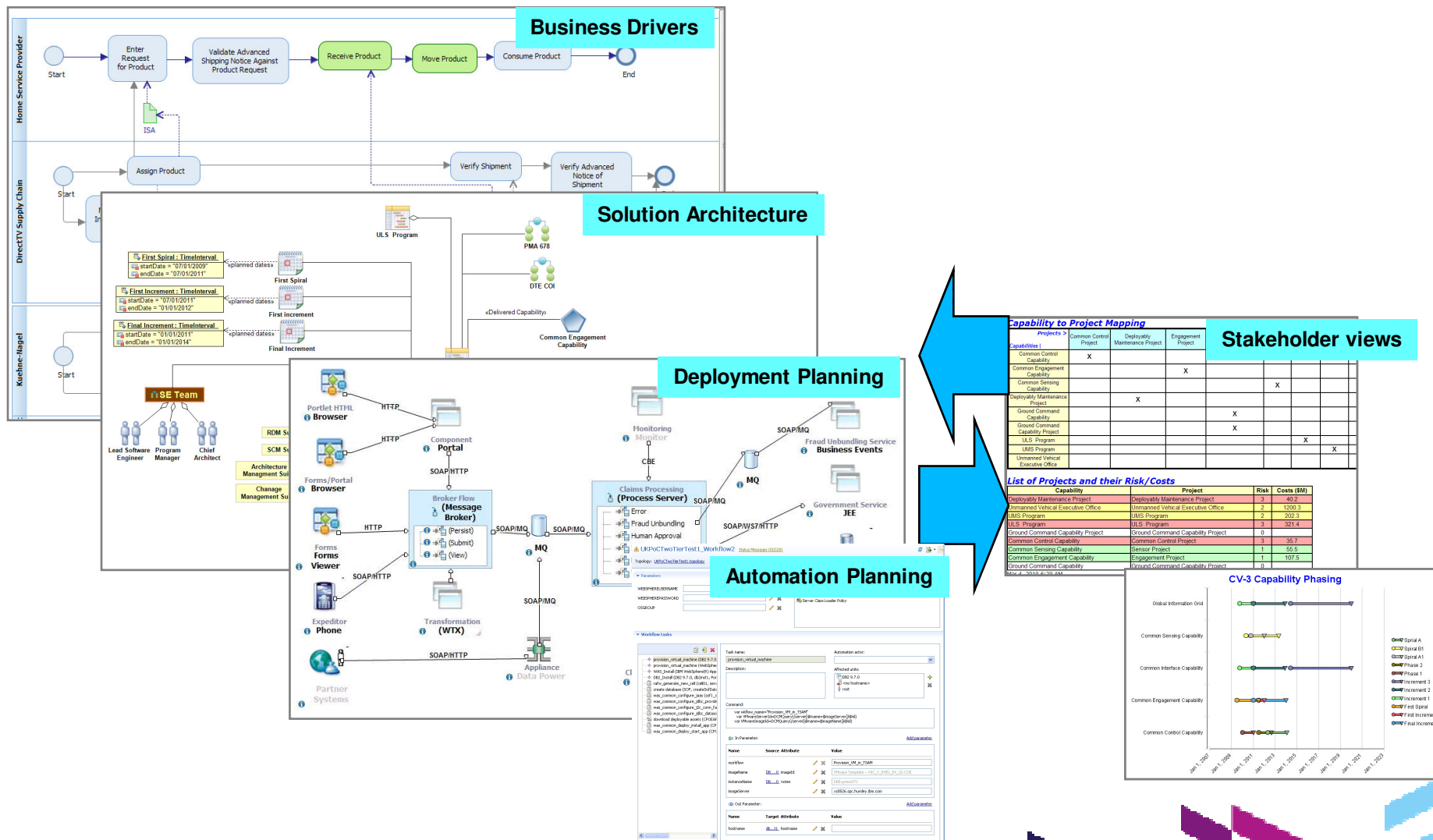
### Results

- ✓ Technical POC and ownership within 1-2 months
- ✓ 90-100% of manual deployment/replication activities automated (from months to days)
- ✓ Reduced deployment times due to standardization.

## Scenario 3: Architecture Planning - Solution

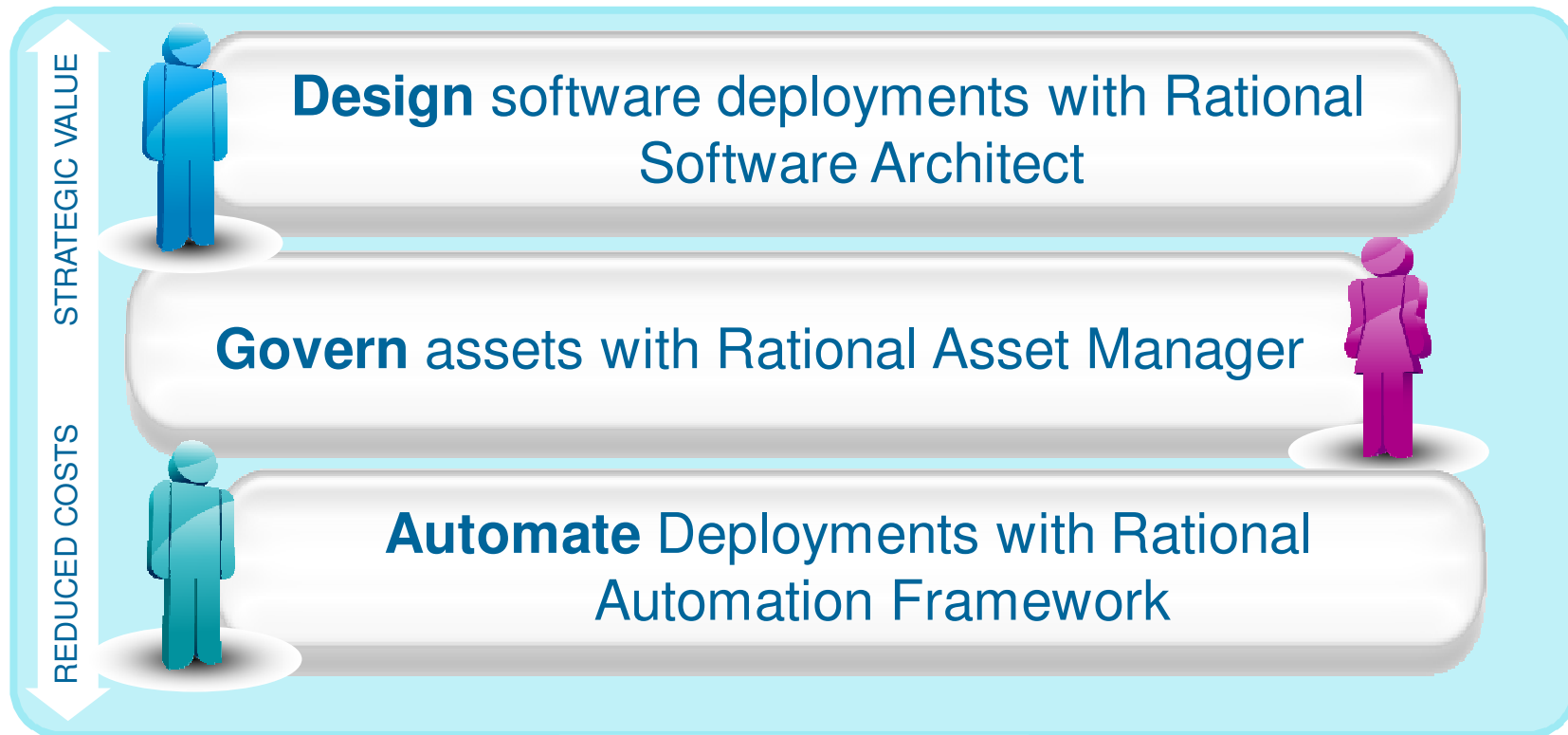


# Scenario 3: Integrated Architecture & Planning Approach



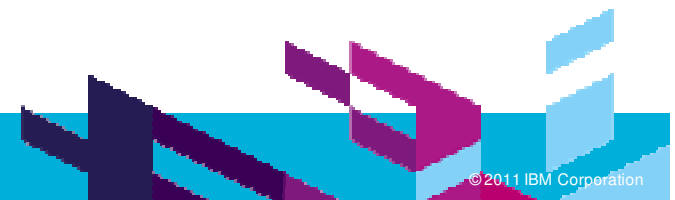
## Summary

- Improve the software release and deployment process



# QUESTIONS

[www.ibm/software/rational](http://www.ibm/software/rational)





[www.ibm/software/rational](http://www.ibm/software/rational)

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