



Business Driven Development for Service-Oriented Architecture

An IBM Exploration of Technology



Agenda

- Why SOA and BDD?
- What is SOA and BDD?
- SOA, BDD and the IBM Rational Software Development Platform
- Demo

Agenda

- Why SOA and BDD?
- What is SOA and BDD?
- SOA, BDD and the IBM Rational Software Development Platform
- Demo

What's on the minds of 450 of the world's leading CEOs?



CEO needs

- **Revenue growth** with cost containment
- Key competency: **responsiveness**
- Critical success factor: enable effectiveness of **people** and **processes**

Source: CEO Study of 456 WW CEOs, IBM Corp. 2004



CIO challenges

- Aligning IT and business goals to grow revenue and contain costs
- Building responsiveness and agility into the organization through IT
- How can IT help enable people and teams to be more effective

Source: Operating Environment Market Drivers Study, IBM Corp. 2004

Agenda

- Why SOA and BDD?
- What is SOA and BDD?
- SOA, BDD and the IBM Rational Software Development Platform
- Demo

What is

... a service?

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

... service orientation?

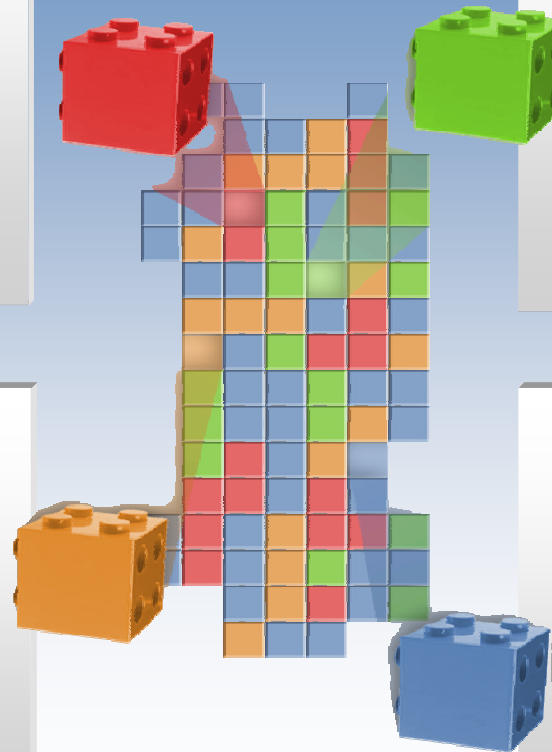
A way of integrating your
business as linked services
and the outcomes that
they bring

... service oriented architecture (SOA)?

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

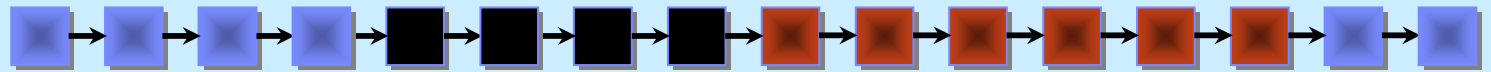
... a composite application?

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

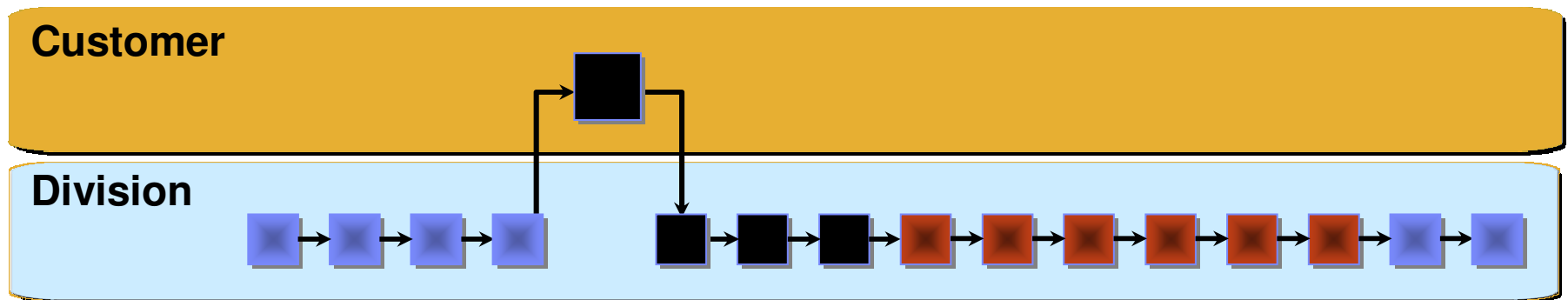


SOA in Action – It's All About the Business

Division

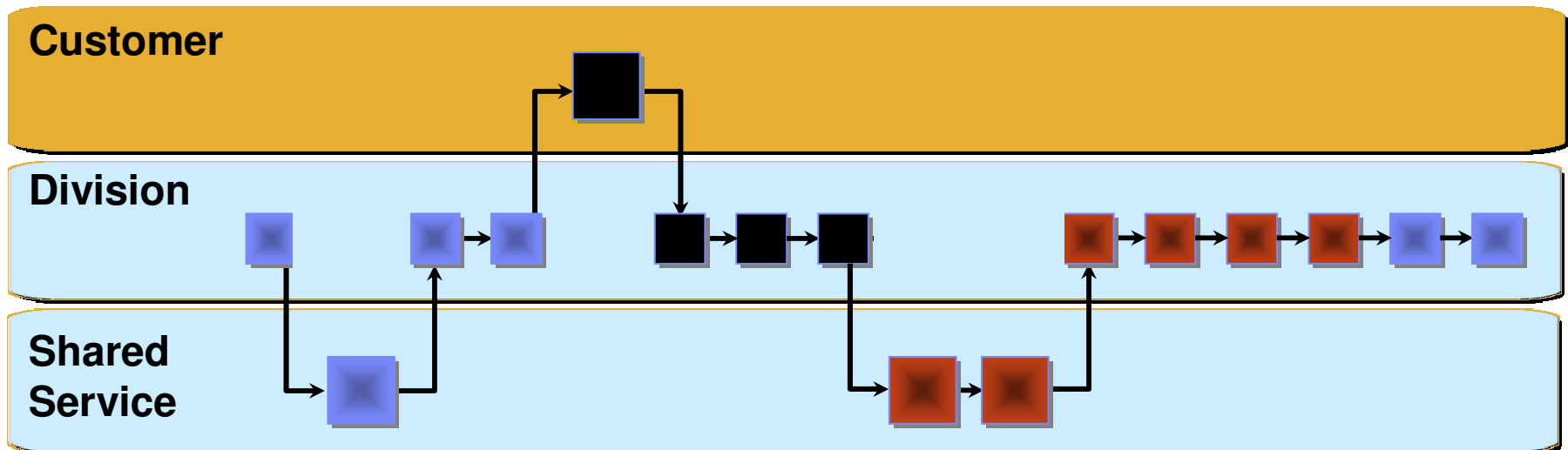


SOA in Action – It's All About the Business



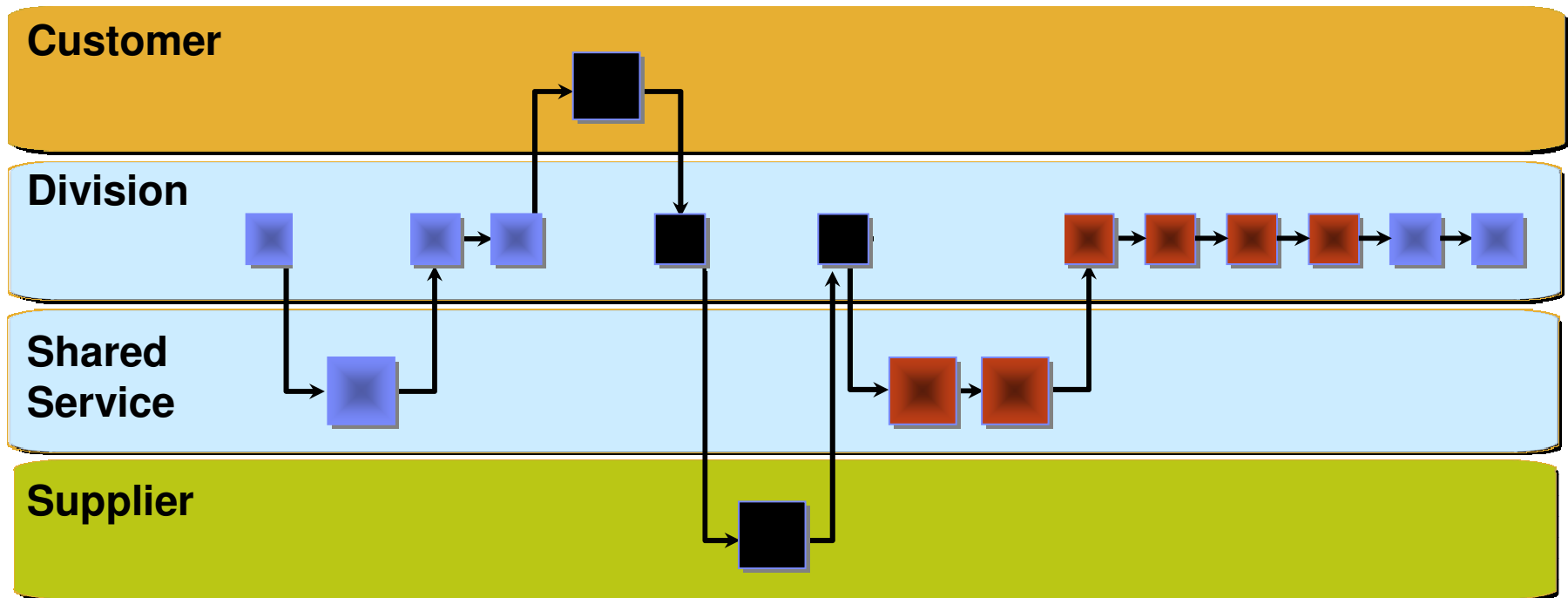
Change: Customer Order Entry

SOA in Action – It's All About the Business



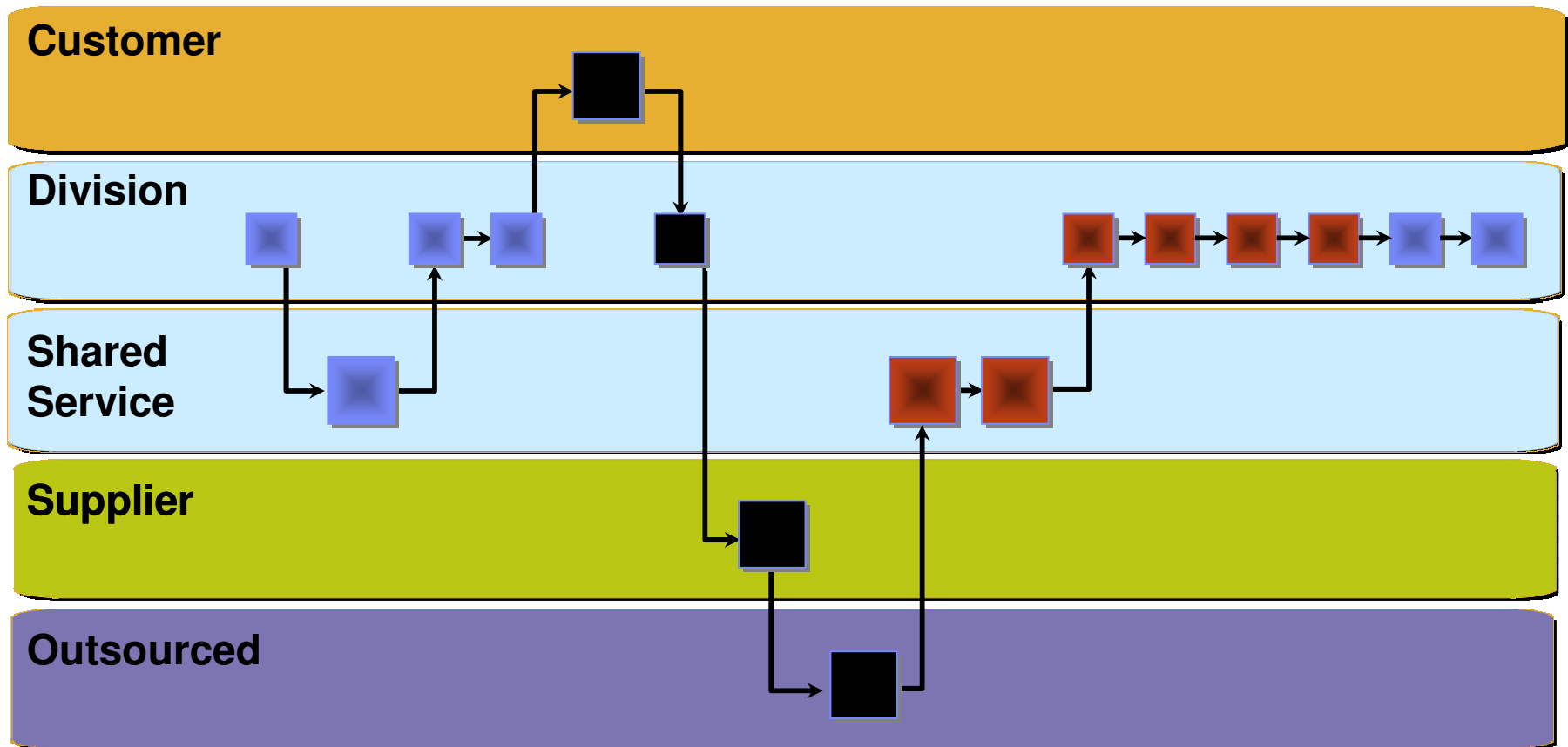
Change: Shared Service – Marketing, Billing, Receivables

SOA in Action – It's All About the Business



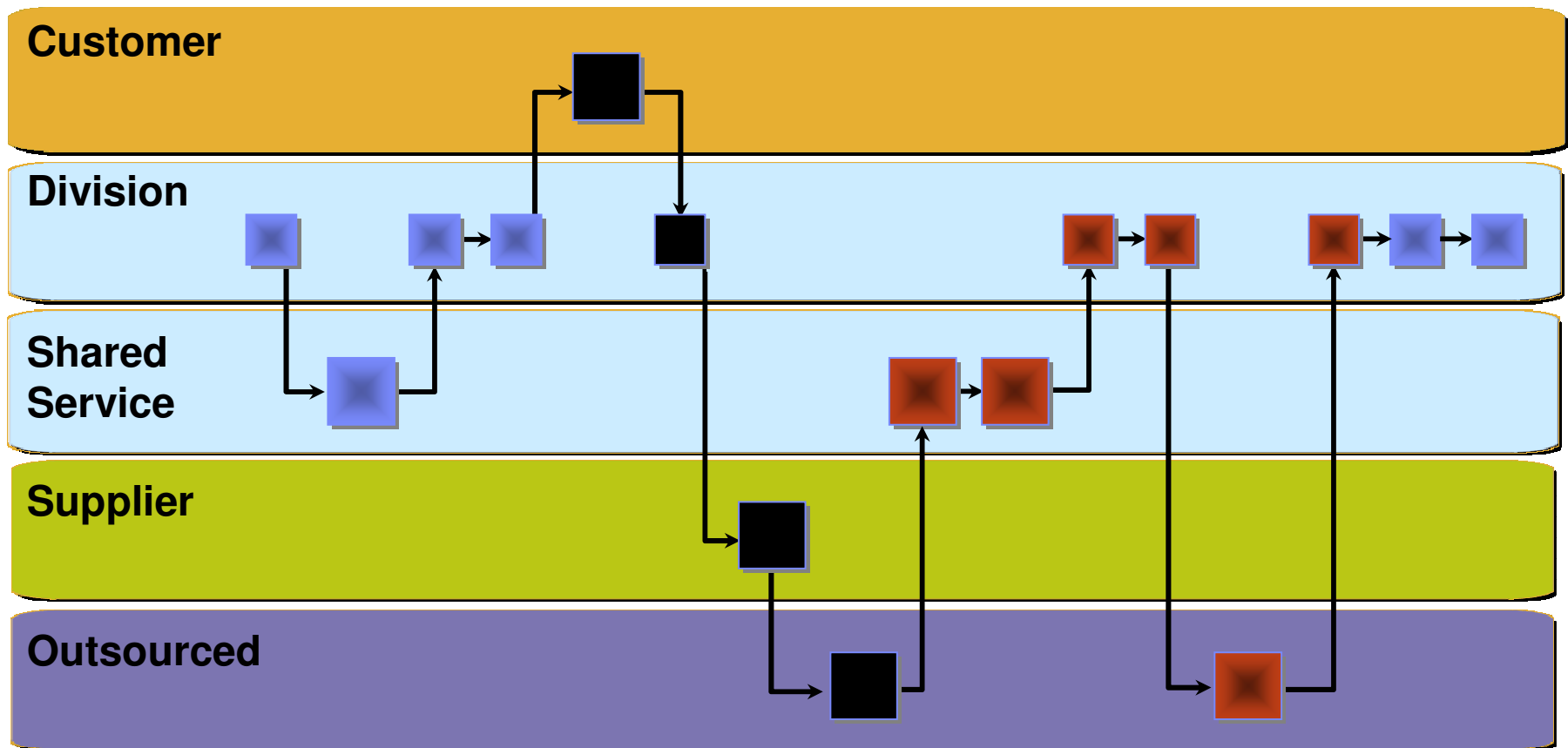
Change: Supplier Handles Inventory (VMI)

SOA in Action – It's All About the Business



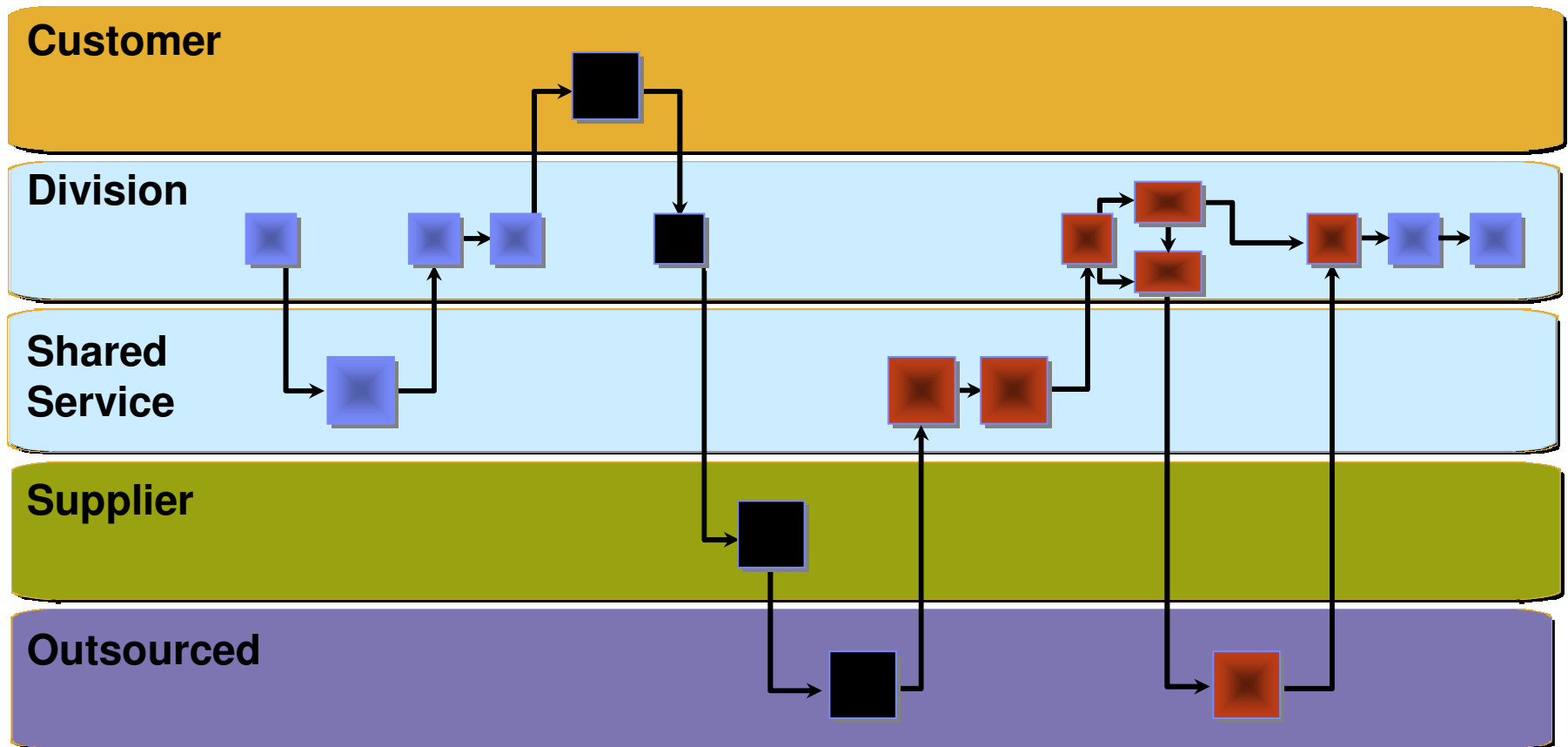
Change: Shipping by FedEx, DHL, or UPS

SOA in Action – It's All About the Business



Change: Collections Outsourced

SOA in Action – It's All About the Business



Change: Process Optimization

What Differentiates SOA from Claims Like This in the Past?

Standards

- Broadly adopted Web services ensure well-defined interfaces.
- Before, proprietary standards limited interoperability

Organizational Commitment

- Business and IT are united behind SOA (63% of projects today are driven by LOB)*
- Before, communication channels & 'vocabulary' not in place

Degree of Focus

- SOA services focus on business-level activities & interactions
- Before, focus was on narrow, technical sub-tasks

Connections

- SOA services are linked dynamically and flexibly
- Before, service interactions were hard-coded and dependent on the application

Level of Reuse

- SOA services can be extensively re-used to leverage existing IT assets
- Before, any reuse was within silo'ed applications

*Source: Cutter Benchmark Survey

Business Benefits of SOA

- Flexibility and scalability
 - Improved quality
 - Applications designed for change
 - Decreased time to market
 - Reduced cost
 - Productivity gains
- 
- Business Driven Development for SOA

What is Business Driven Development?

Business driven development

An integrated approach to software development that aligns line-of-business, development and operations teams to improve business performance








Development as a business process

- Align Technology and Business priorities
- Improve efficiency and responsiveness
- Create innovative products

- Higher productivity - 50% + increase in developer productivity
- Improved quality - 80% fewer bugs
- Greater predictability

Software development becomes a driver of competitive advantage

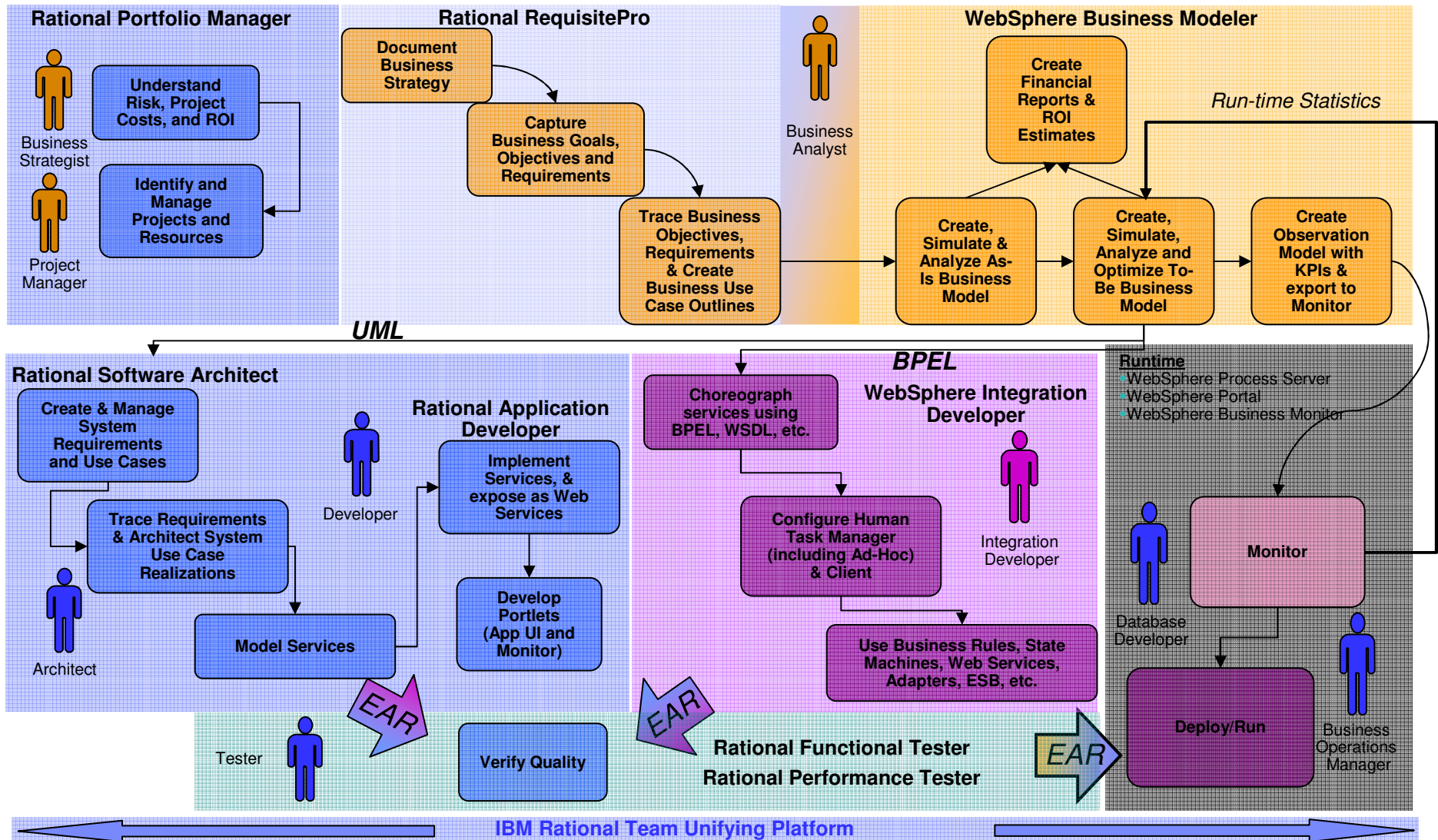
BDD for SOA is a Team Sport

	Title	Role
	Business Analyst	Provide comprehensive and structured view of the business requirements
	Architect	Provide architecture for a software application or service
	Integration Developer	Creation of new business function by combining existing services
	Application Developer	Develop the business services according to the Architects' design, incorporating both functional as well as presentation aspects of the offering
	CIO / Project Manager	Gain visibility into the business benefits, costs and risks of the portfolio of SOA services from proposal to retirement

Agenda

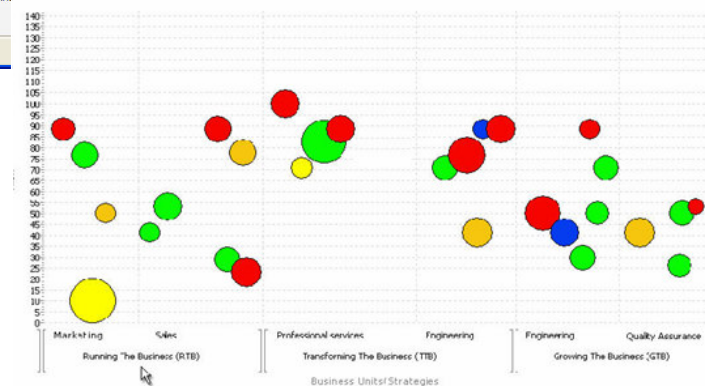
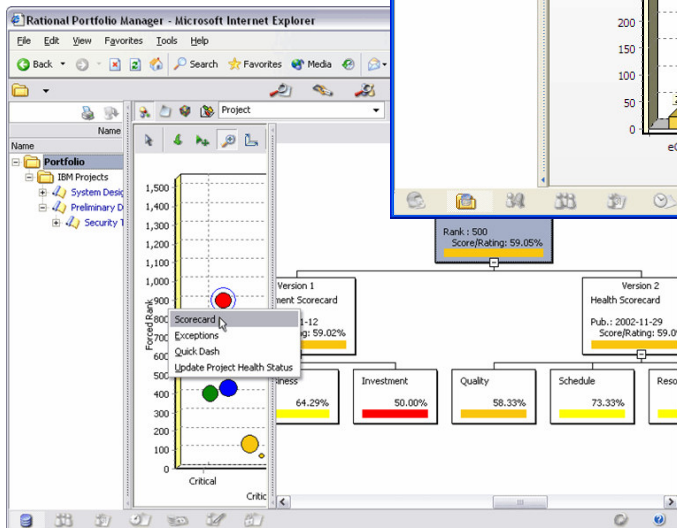
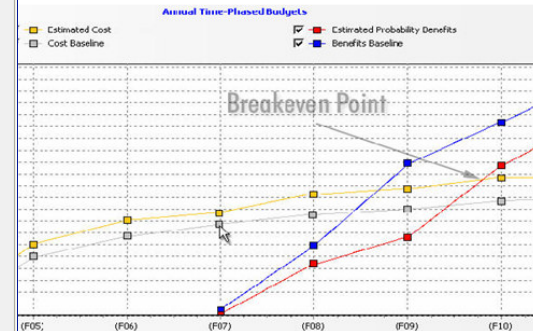
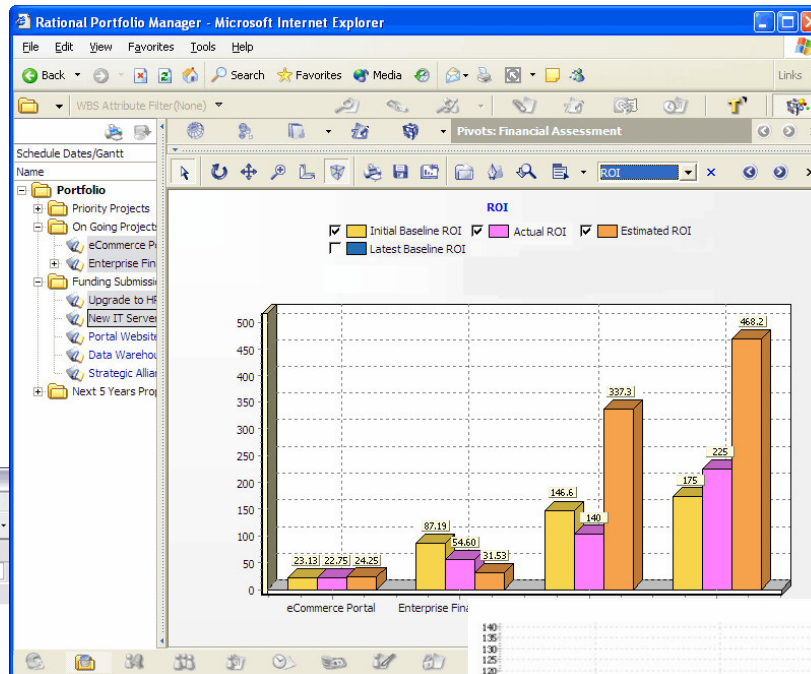
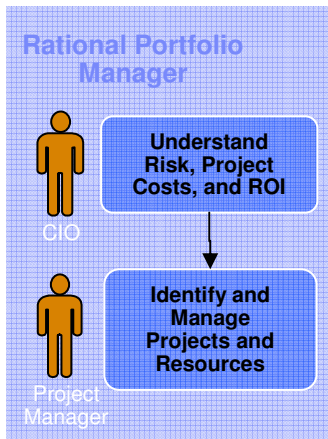
- Why SOA?
- What is SOA?
- SOA and the IBM Rational Software Development Platform
- Demo

Overview of the Roles, Responsibilities, Process & Tools

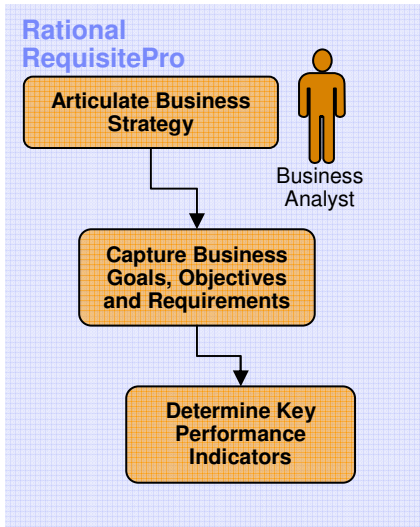


Govern SOA – align, execute and control investments

Maximize Revenue Growth: Control Cost And ROI



Define business requirements



ClassicsCD.Web Shop
Version: 2.1
Date: 13/June/2002

1. Introduction

1.1 Purpose of the Vision

The purpose of this document is to define high-level requirements for the ClassicsCD.com Web Shop. The Web Shop is intended to provide a retail operation.

1.2 Product Overview

ClassicsCD wants to improve its retail operation. We envision a smaller, more efficient retail operation with the following features:

- A Home Store
- A warehouse

Requirements:	Type	Package	Priority
FEAT1: Secure payment method Secure payment method	Functional	Web Shop System	Must
FEAT2: Easy browsing Easy browsing for available titles	Functional	Web Shop System	Should
FEAT3: Search by multiple criteria Ability to search for CDs by multiple criteria	Functional	Web Shop System	Must
FEAT4: Ability to check status of an order Ability to check the status of an order	Functional	Web Shop System	Should
FEAT5: E-mail notification of new titles of interest Email notification for Shoppers when new titles that may interest them are added to the collection.	Functional	Web Shop System	Could



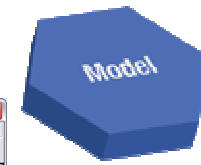
Requirements:	Author	Revision	Reason
RULE1: Minimum of 3 CDs free shipping	Unknown	1.0001	Requirement Text C
RULE2: Maximum of 10 CDs, results in a 10% discount	Unknown	1.0001	Requirement Text C
RULE3: If the inventory # of a particular CDs falls below 3.	Unknown	1.0002	Requirement Text C
* <Click here to create a requirement>	Unknown	1.0000	

RULE3: If the inventory # of a particular CDs falls below 3, then an automatic re-order shall happen

Requirements:	Measure	Change Value	Change Kind	Verification	Timeframe
GOAL1: Sell Classic CDs over the internet	Qualitative	25	Percent		Q3
GOAL2: Grow business	Quantitative	100	Percent	Purchases CDs	Q4
GOAL3: Decrease the time to order CDs	Quantitative	-200	Percent	Compare current time ago	Q1
GOAL4: Decrease the number staff	Quantitative	3	Direct	Reduce staff	
GOAL5: Allow order business to the entire company	Qualitative	5	Direct	Reduced components	
* <Click here to create a requirement>					

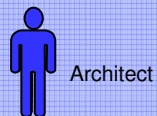
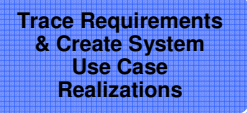
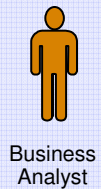
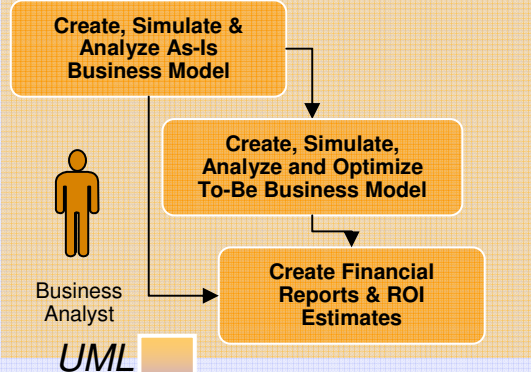
GOALS: Allow order business to the entire company

Model the business (& identify the services)



Rational RequisitePro

WebSphere Business Modeler



Rational Software Architect

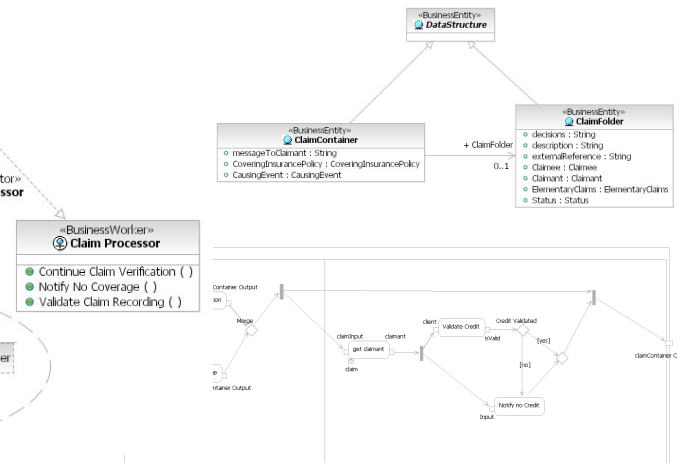
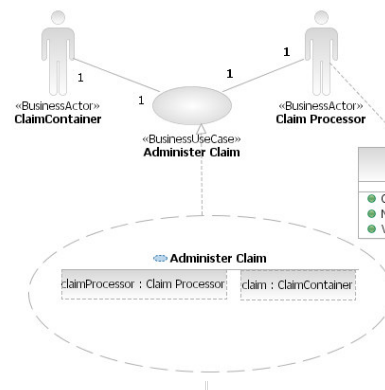
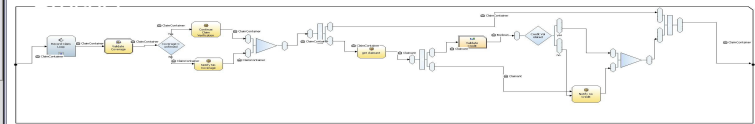
Rational RequisitePro - WBI-ReqPro - [BUC: All Business Use Cases]

Requirements	Priority	Status	Assigned To	Unique ID	Location	Package	Auth
BUC11: Apply For Loan	Medium	Approved		30	Apply For Loan	Apply For Loan	pat
BUC11.1: Applicant Information	Medium	Approved		20	Apply For Loan	Apply For Loan	pat
BUC11.2: Applicant Interview	Medium	Approved		21	Apply For Loan	Apply For Loan	pat
BUC11.3: Check Application	Medium	Approved		22	Apply For Loan	Apply For Loan	pat
BUC11.4: Financial Information	Medium	Approved		23	Apply For Loan	Apply For Loan	pat
BUC11.5: Borrowing Calculation	Medium	Approved		24	Apply For Loan	Apply For Loan	pat
BUC11.6: Locate Loan	Medium	Approved		25	Apply For Loan	Apply For Loan	pat
BUC11.7: Provide lender list	Medium	Approved		26	Apply For Loan	Apply For Loan	pat
BUC11.8: Select Lender	Medium	Approved		27	Apply For Loan	Apply For Loan	pat
BUC11.9: Submit Loan	Medium	Approved		28	Apply For Loan	Apply For Loan	pat
BUC11.10: Document Loan	Medium	Approved		29	Apply For Loan	Apply For Loan	pat
* <Click here to create a requirement>	Medium	Approved		empty	Database	None	pat

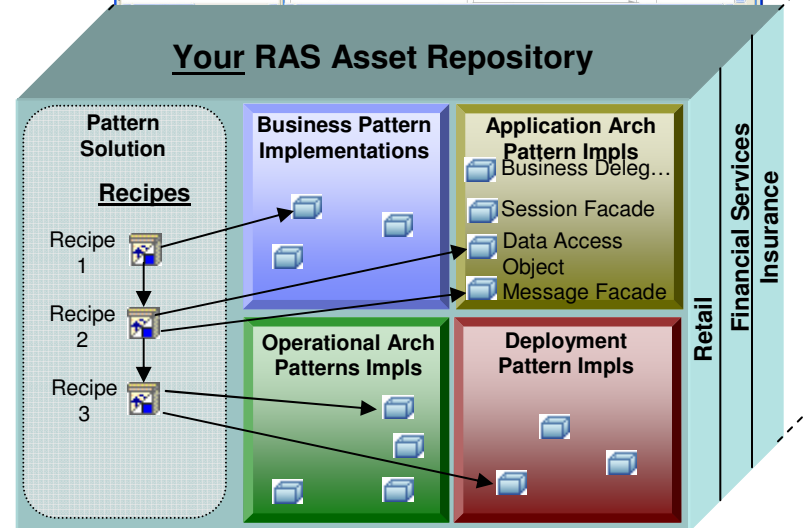
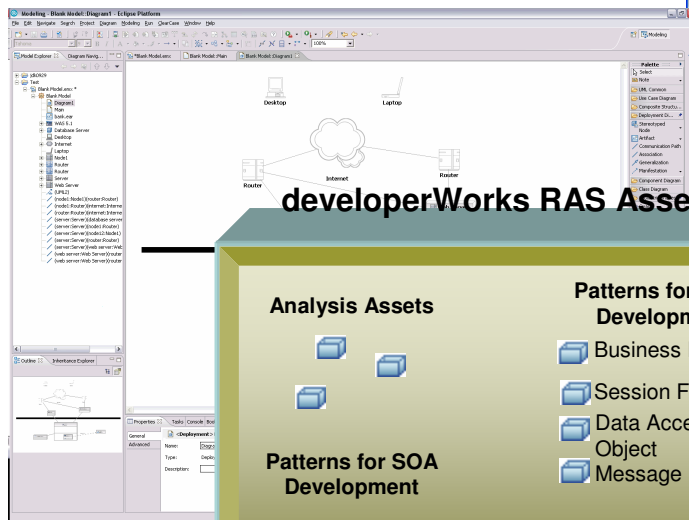
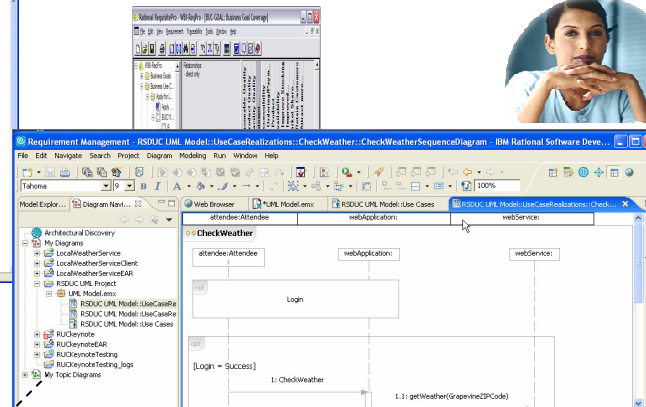
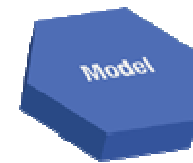
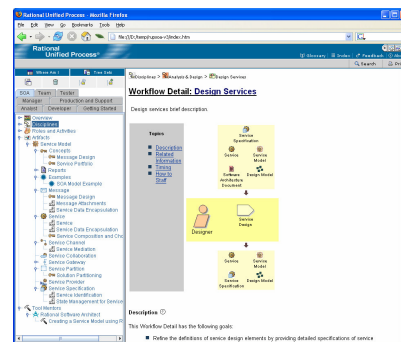
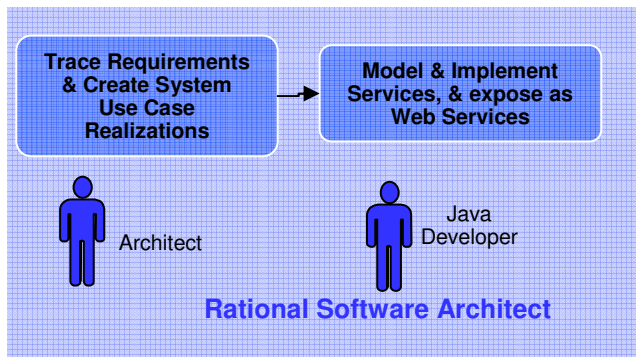
BUC11.4: Financial Information
The applicant enters the dollar amount of the proposed loan and the total dollar value that will be used for a down payment.

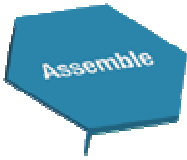
Rational RequisitePro - WBI-ReqPro - [BUC: GOAL: Business Goal Coverage]

Requirements	GOAL1: Research Data	GOAL2: Early Daily	GOAL3: Availability	GOAL4: Availability	GOAL5: Invoicing	GOAL6: Invoicing	GOAL7: Invoicing
BUC11: Apply For Loan							
BUC11.1: Applicant Information							
BUC11.2: Applicant Interview							
BUC11.3: Check Application							
BUC11.4: Financial Information							
BUC11.5: Borrowing							
BUC11.6: Locate Loan							
BUC11.7: Provide lender list							
BUC11.8: Select Lender							
BUC11.9: Submit Loan							
BUC11.10: Document Loan							

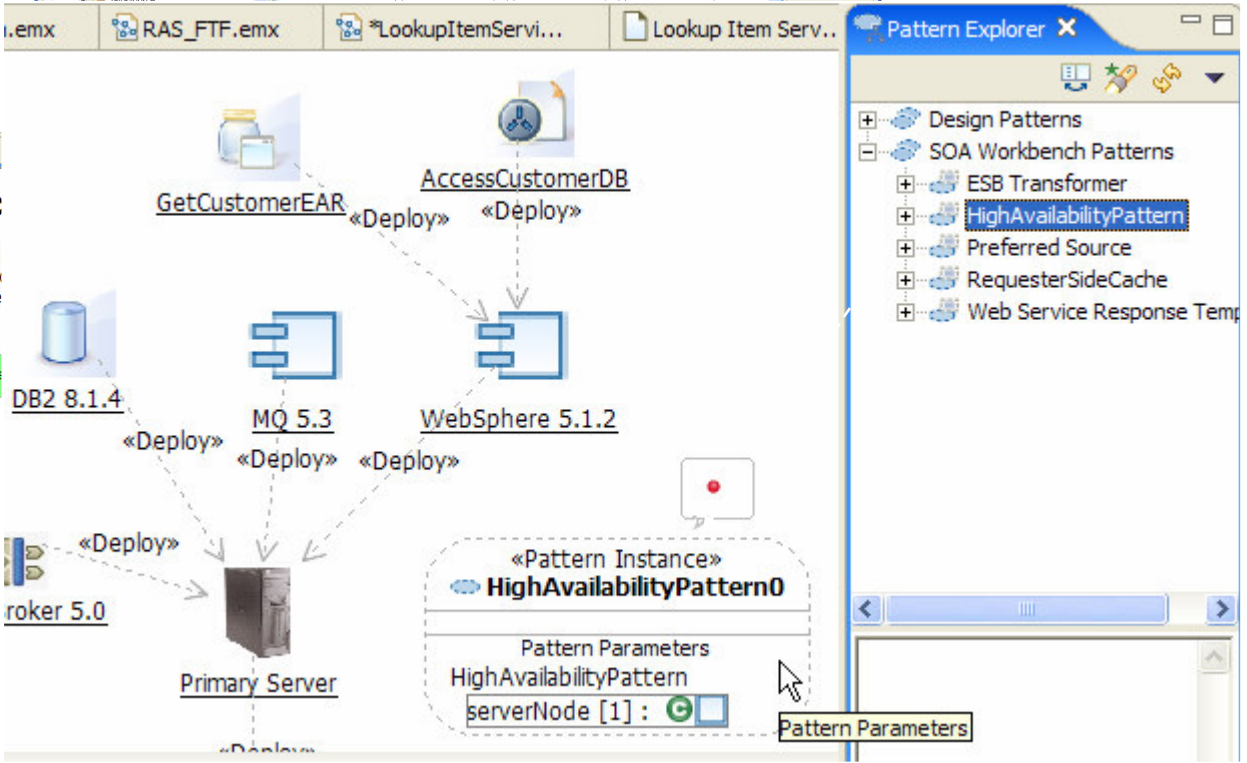
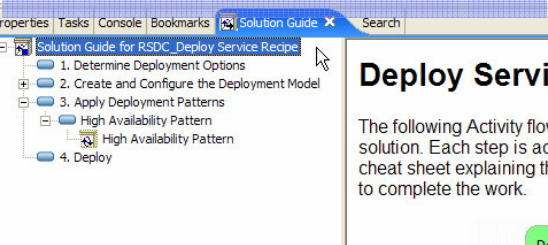
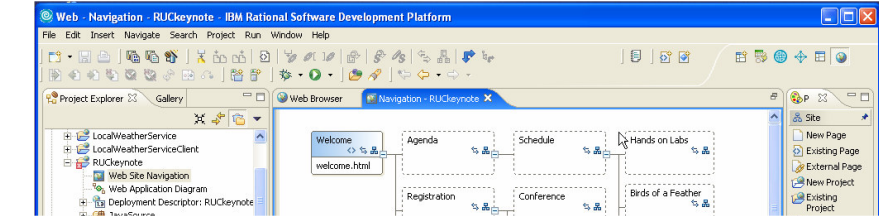
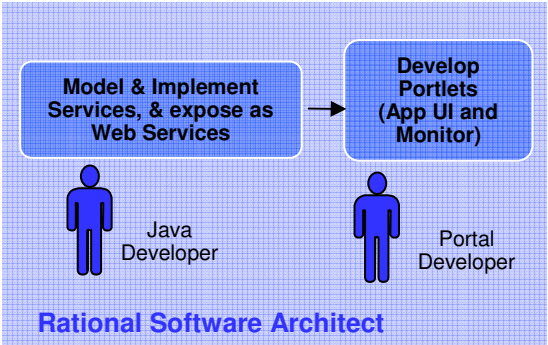


Design the Services Architecture



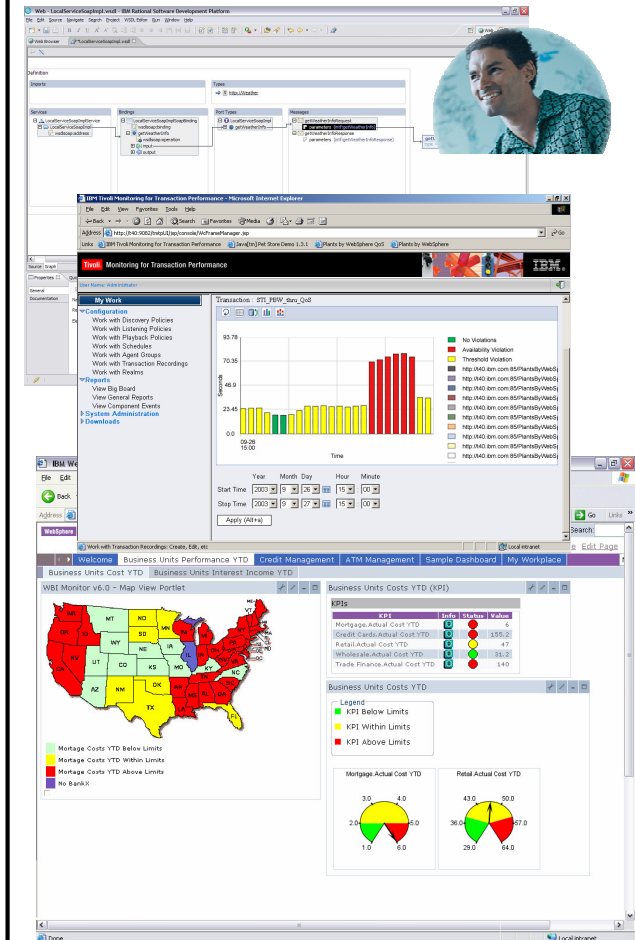
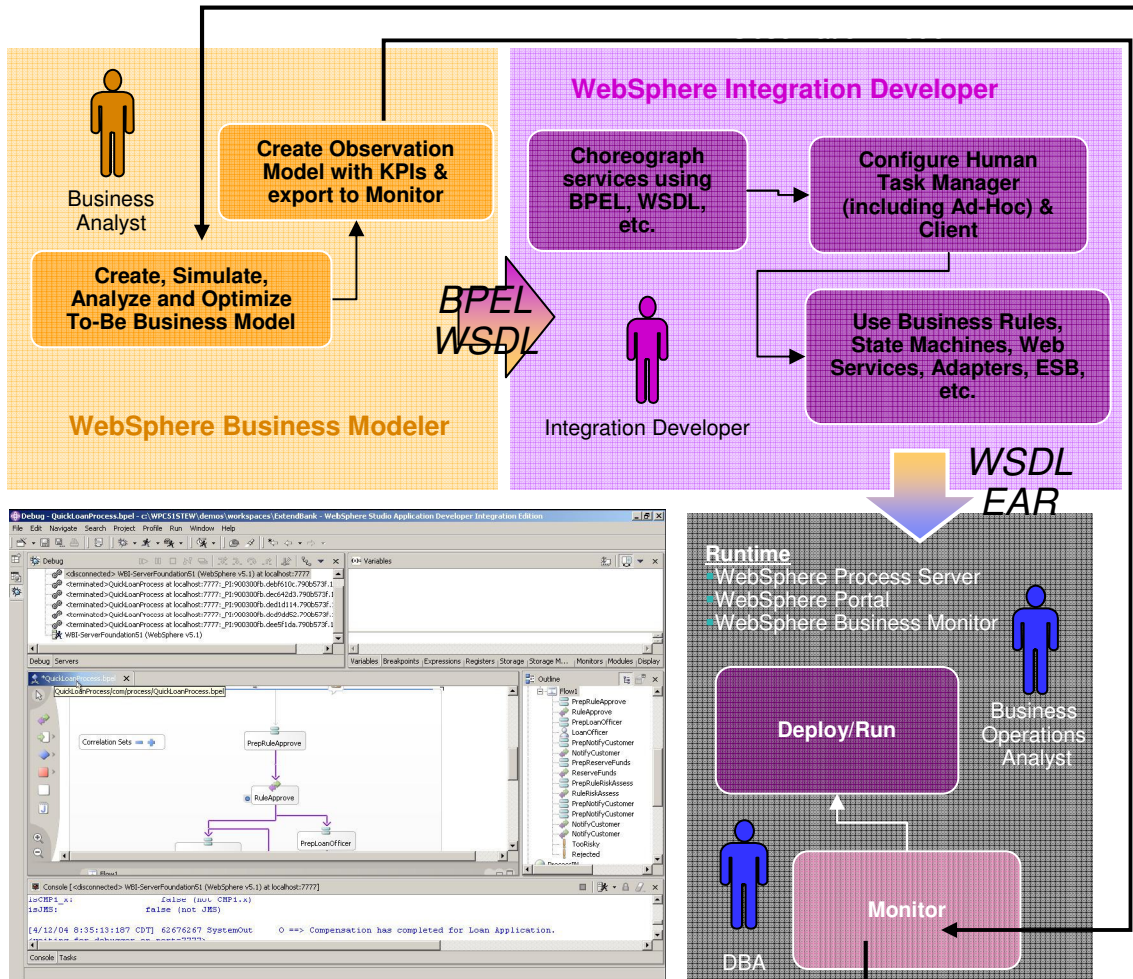


Construct the services Assemble & deploy the composite application

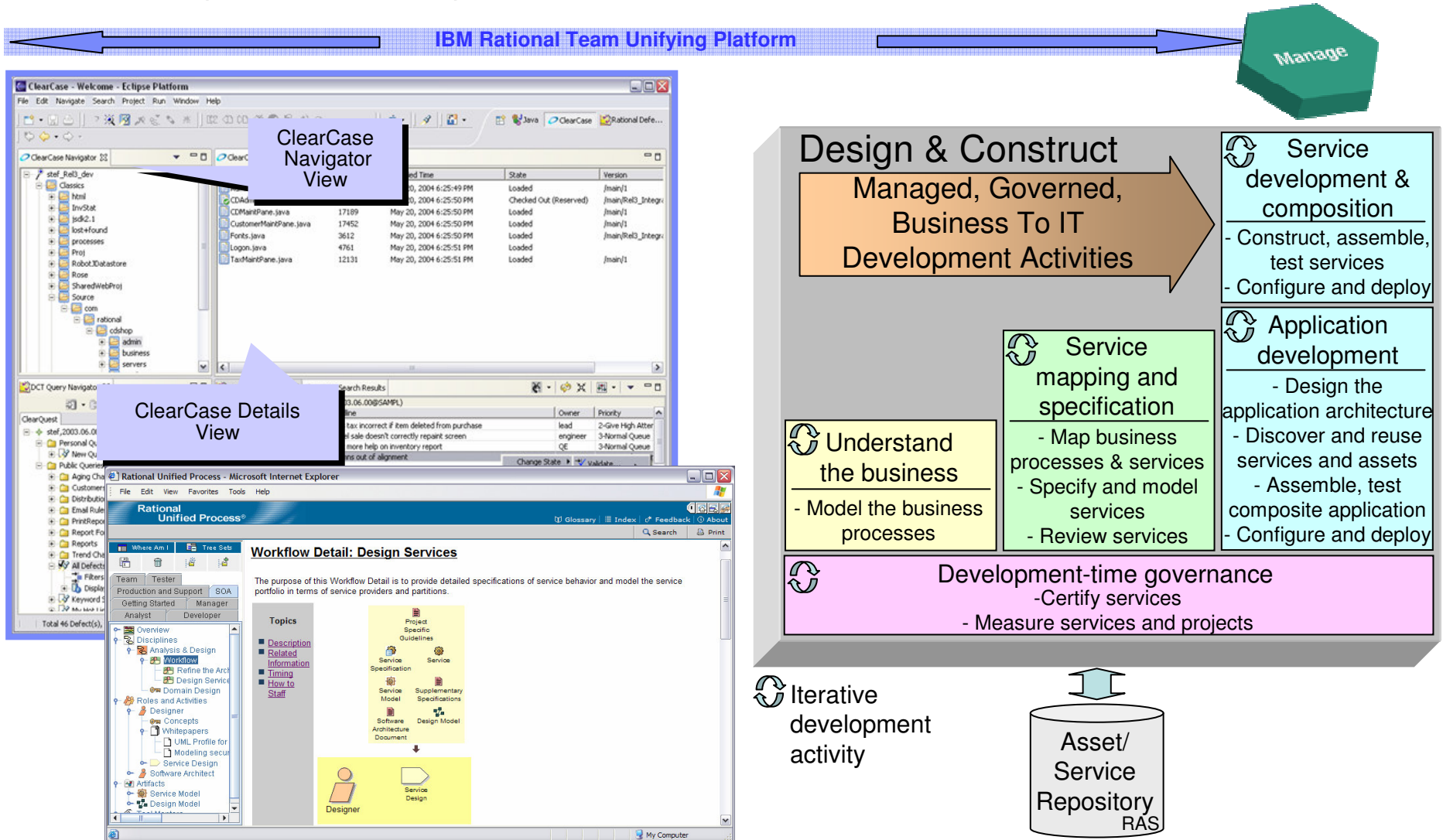




Assemble, deploy & monitor the composite application



Manage – Change, Assets, Process



Design & Construct
Managed, Governed, Business To IT
Development Activities

Understand the business

- Model the business processes

Service mapping and specification

- Map business processes & services
- Specify and model services
- Review services

Service development & composition

- Construct, assemble, test services
- Configure and deploy

Application development

- Design the application architecture
- Discover and reuse services and assets
- Assemble, test composite application
- Configure and deploy

Development-time governance

- Certify services
- Measure services and projects

Iterative development activity

Asset/
Service
Repository
RAS

Agenda

- Why SOA and BDD?
- What is SOA and BDD?
- SOA, BDD and the IBM Rational Software Development Platform
- Demo