System z Enables Solutions For A Smarter Planet

Smart Work On System z

Service Oriented Finance Automated Its Loan Processing In 2008

We automated our loan processing with WebSphere and it's great! We reduced loan processing time and are handling 59% more volume.

Service Oriented Finance CEO, 2008

Changing Business Conditions

Service Oriented Finance CEO, 2009

Change The Rules, Not The Process

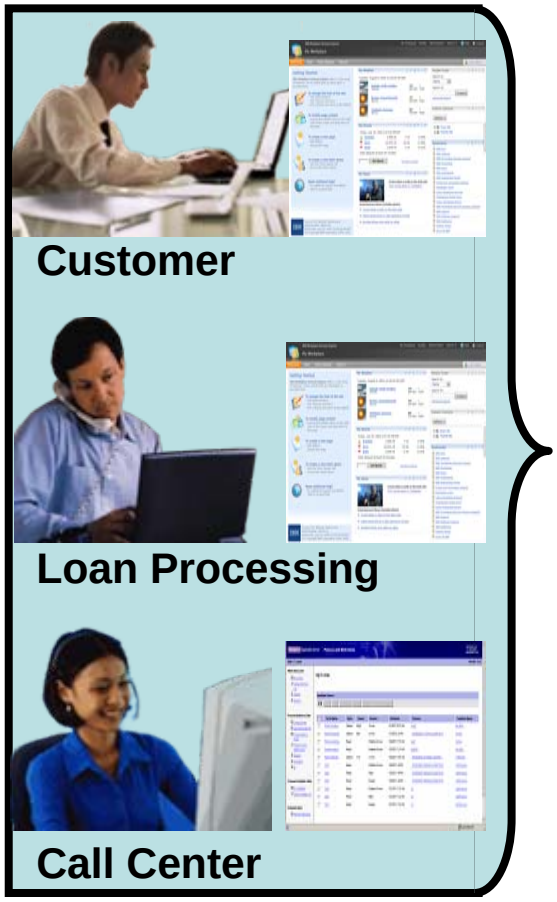
It sounds like we need a new business process!

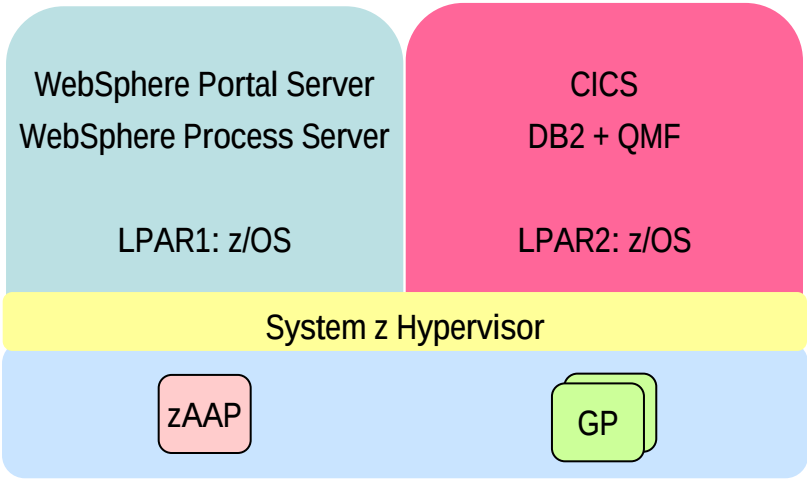
Service Oriented Finance CIO

You don't have to replace the process – simply adjust it!

IBM

Service Oriented Finance Automated Their Loan Process With WebSphere On A Power System

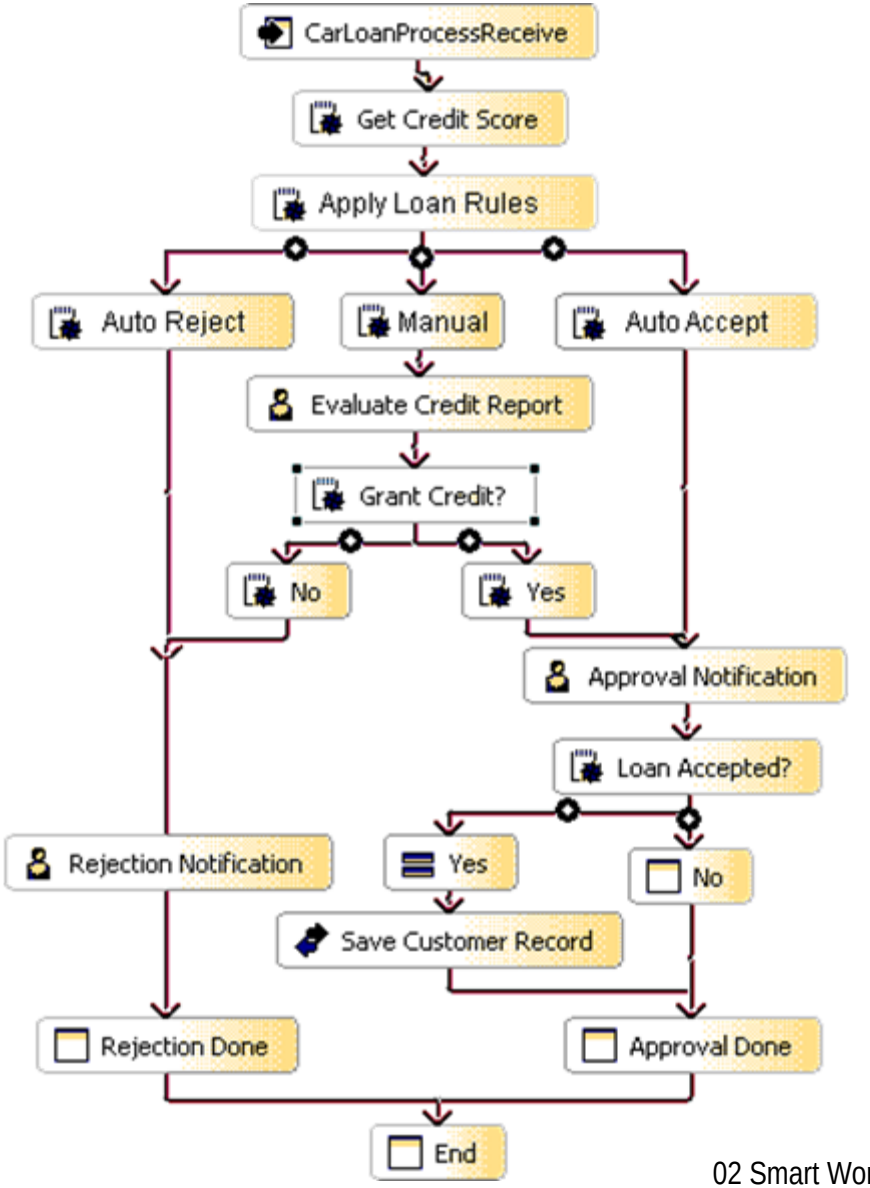




System z:

- Lowest cost
- Performance from co-location
- Quality of service

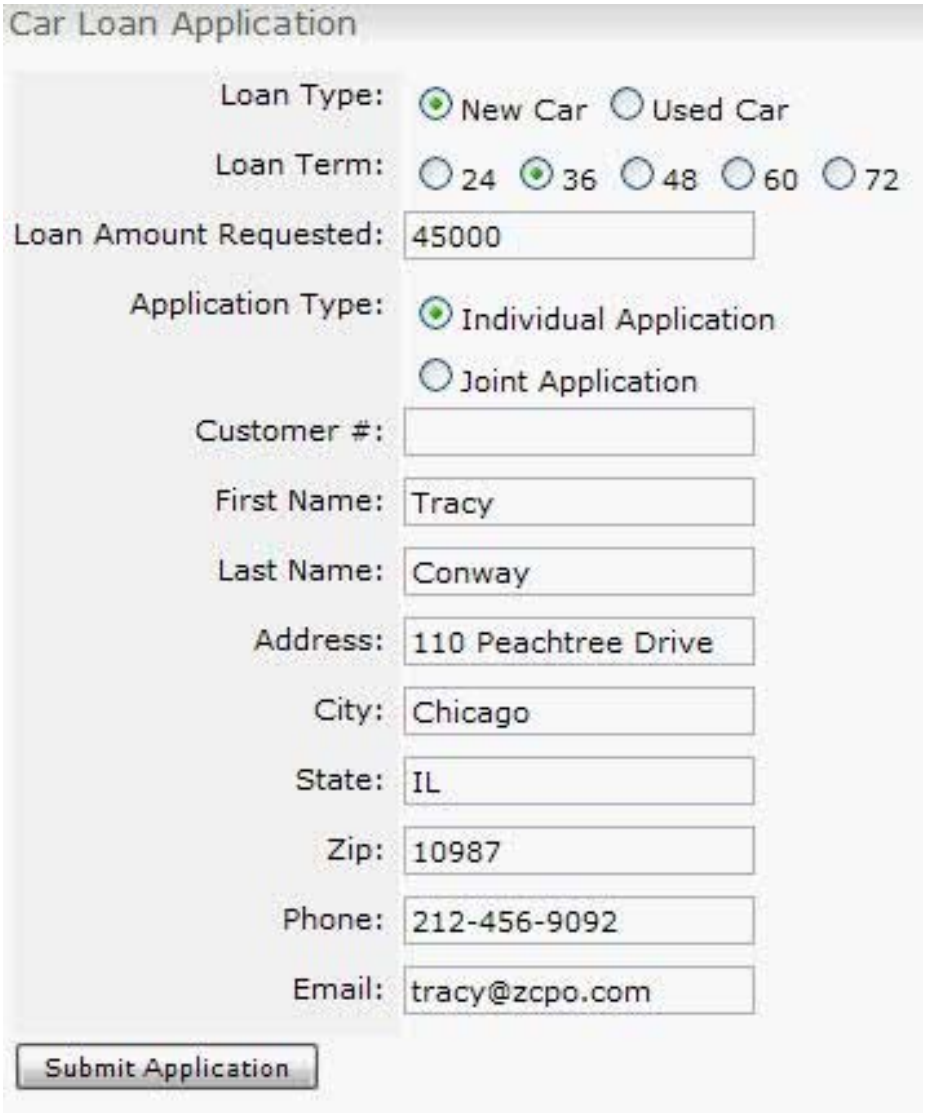
The Current Loan Process



Key Features:

- Automated process management reduces processing time and eliminates paper
  - Efficient inclusion of human tasks, such as manual approval
  - Automatic access to back end systems
  - Instant status and tracking of each loan application
- System z is the lowest cost deployment platform

Demo: The Current Loan Process



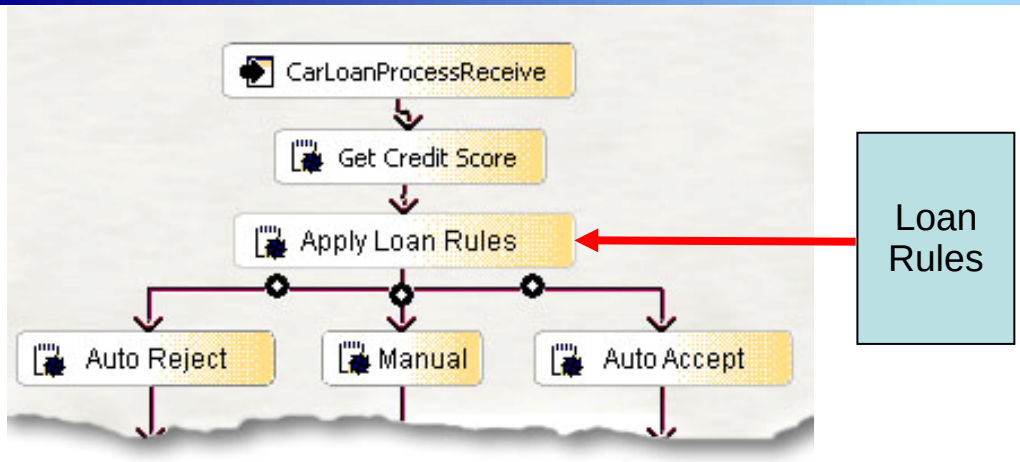
What Changes Do You Need To Make?

We need to require better credit ratings from applicants and to impose a maximum loan limit.

Service Oriented Finance CEO

Service Oriented Finance CIO

Business Rules Let You Adapt Quickly To Business Change



WebSphere Process Server externalizes business rules so they can be adjusted by business managers in production, without IT involvement

- Business rules are typically used to adjust thresholds
- Business rules easily changed with a browser after process is deployed
- New rules take effect immediately without having to redeploy

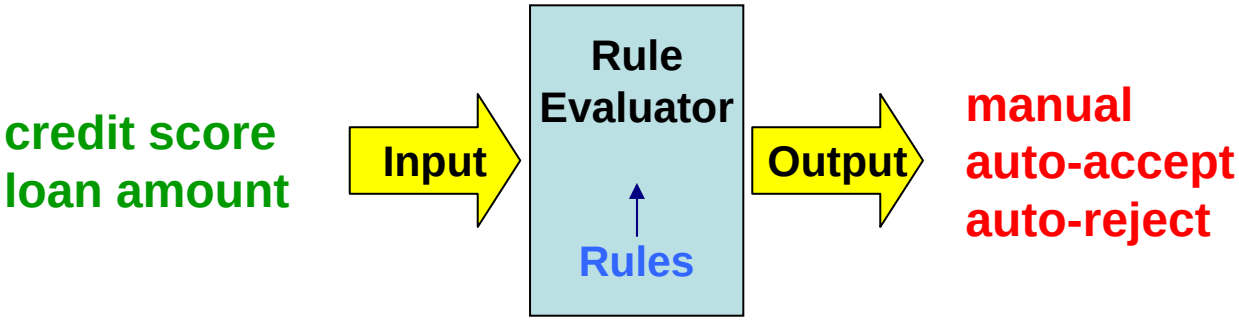
Example: Change The Business Rules

Current car loan rules

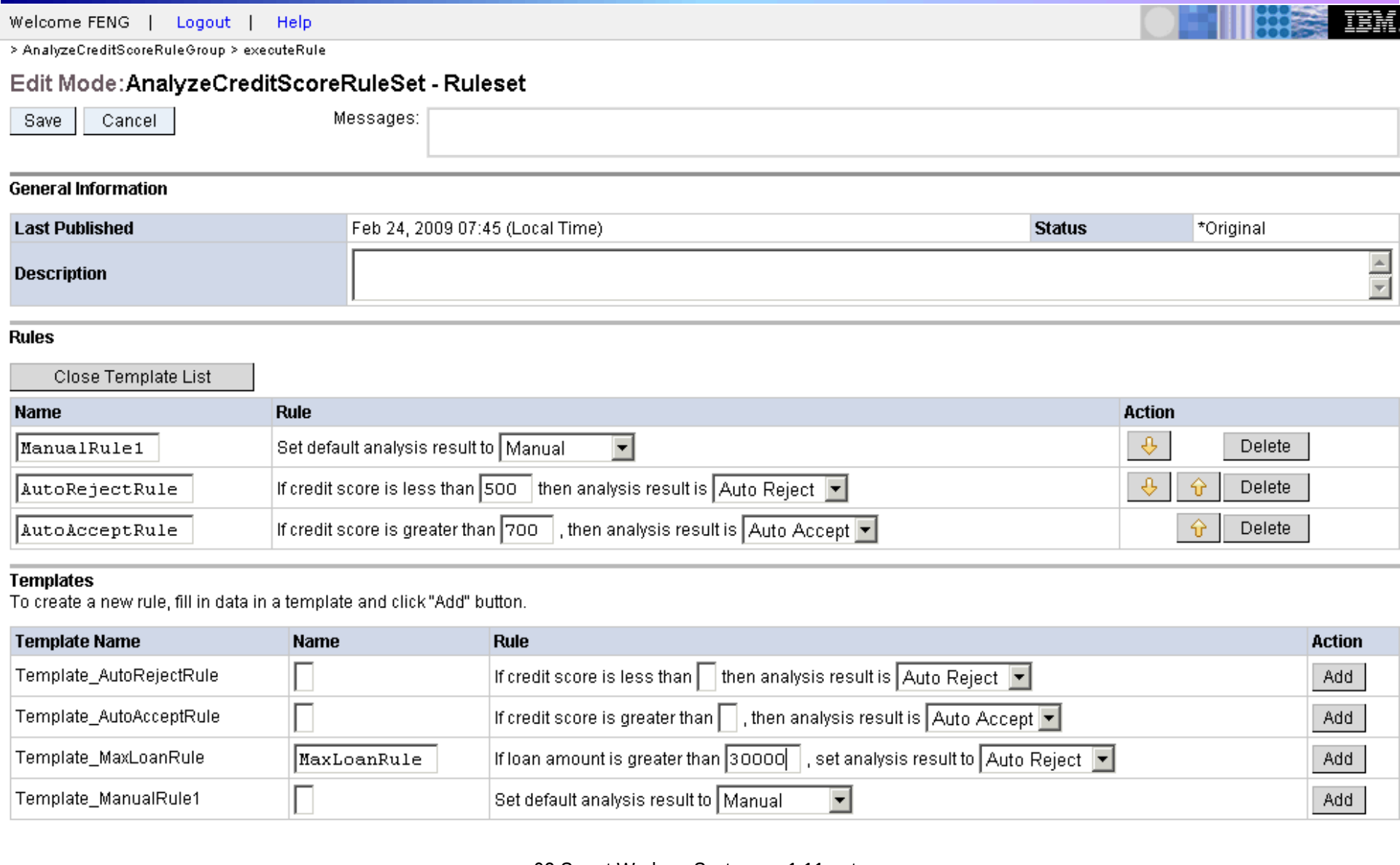
- Default analysis result is manual
- If credit score is less than 500 analysis result is set to auto-reject
- If credit score is greater than 700 analysis result is set to auto-accept

New car loan rules

- Default analysis result is manual
- If loan amount is greater than 30,000 analysis result is set to auto-reject
- If credit score is less than 650 analysis result is set to auto-reject
- If credit score is greater than 720 analysis result is set to auto-accept

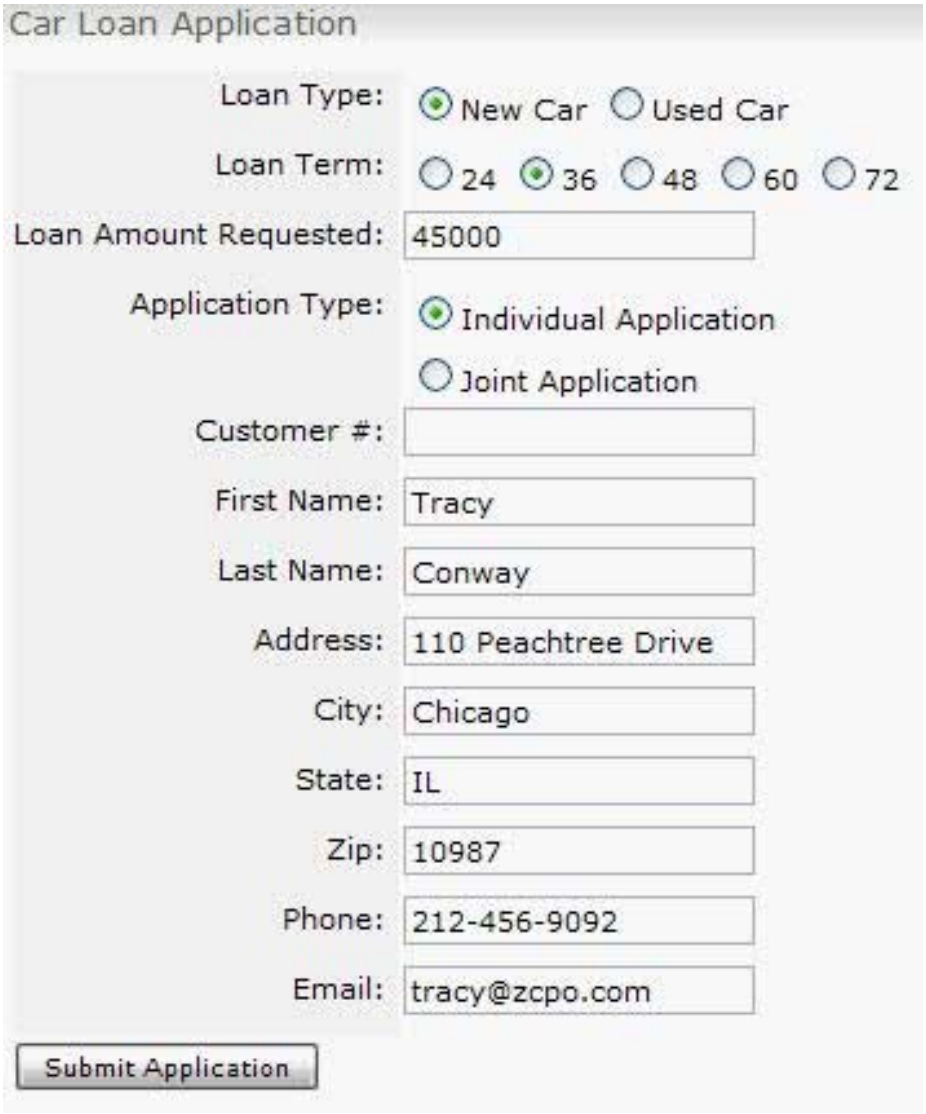


Demo: Change The Rules

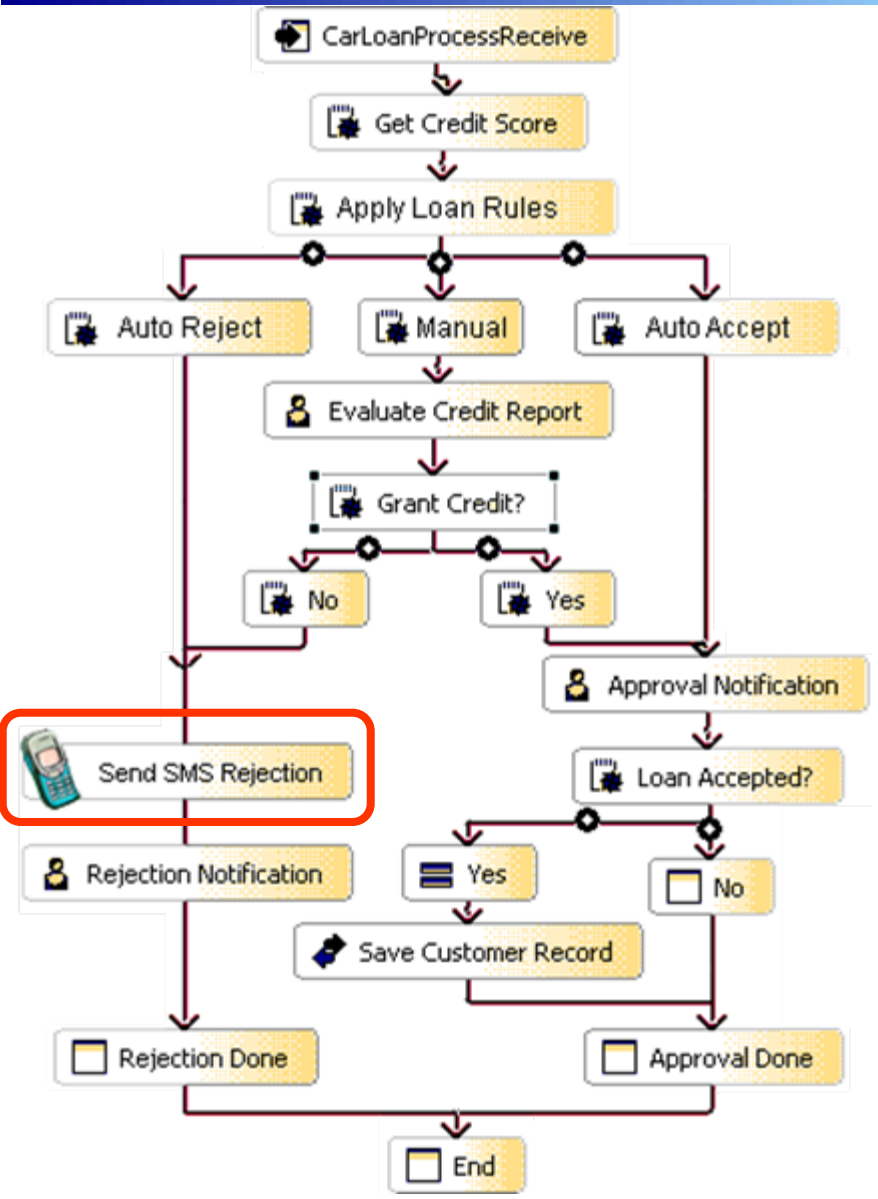


There Were Some Other Changes Made To The Process

Demo: The Same Application With The New Rules



Making More Revisions To The Business Process



- In the demo we added a notification sent to a mobile phone via SMS using the phone number provided
- It's fast and easy to revise and redeploy an existing business process
  - Change the order of activity steps
  - Add one or more new activities
  - Use a different service provider
- Service Component Architecture (SCA) makes it easy
  - Tool can easily insert "send SMS alert" activity into flow

Business Agility

We changed the loan thresholds in less than an hour!

We adapted quickly to the new business environment, and reduced our risk exposure.

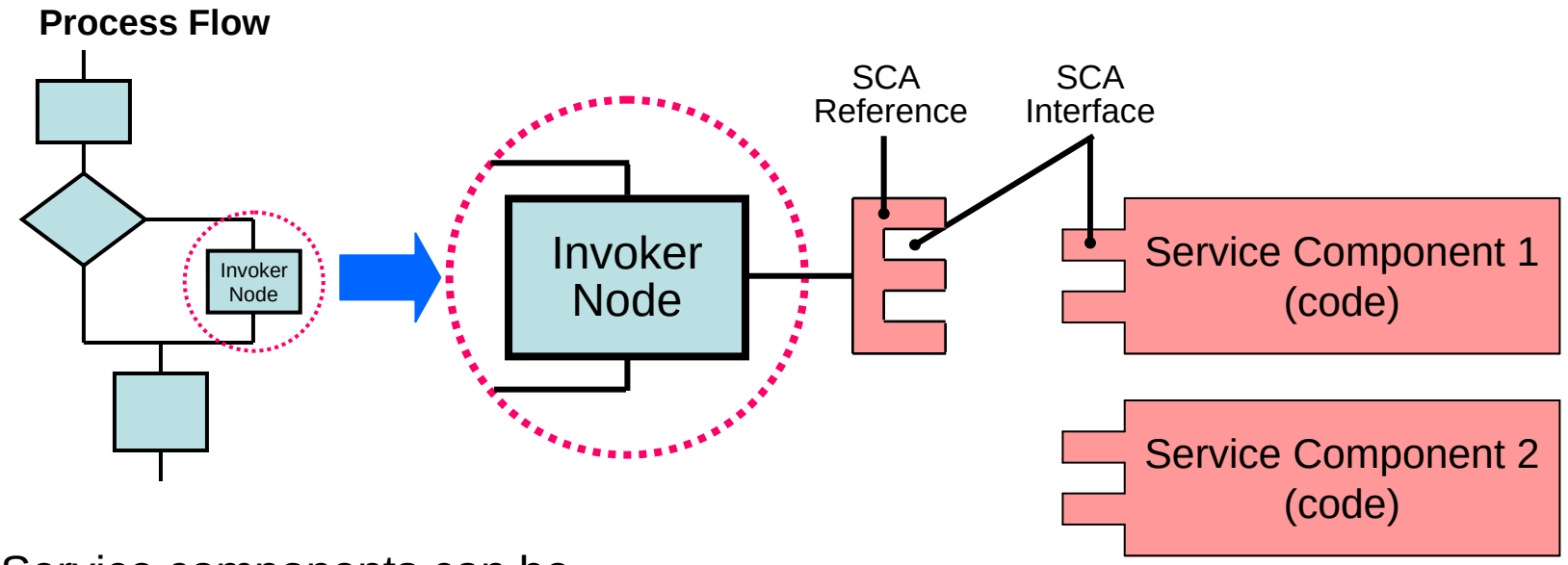
Service Oriented Finance CEO

Customers Have Different Requirements In Process Flexibility

IBM can satisfy them

- SOA approach is **flexible** – it fits into existing environments
- **Service Component Architecture** enables flexible replacement of process components by developers
- **WebSphere Process Server's** business rules permit simple, on-the-fly changes to process decision criteria
- **ILOG** rules engine captures business policies in large rule sets, which flexibly determine process behavior
- **WebSphere Business Services Fabric** permits a common process to be easily adapted to local requirements by selecting locale-specific service invocations
- **Business Space powered by WebSphere** easily delivers customized user interfaces for each human role in the process
- **IBM Business Process Management** software can flexibly scale up to handle growing workloads

Service Component Architecture Is The Foundation For Process Flexibility



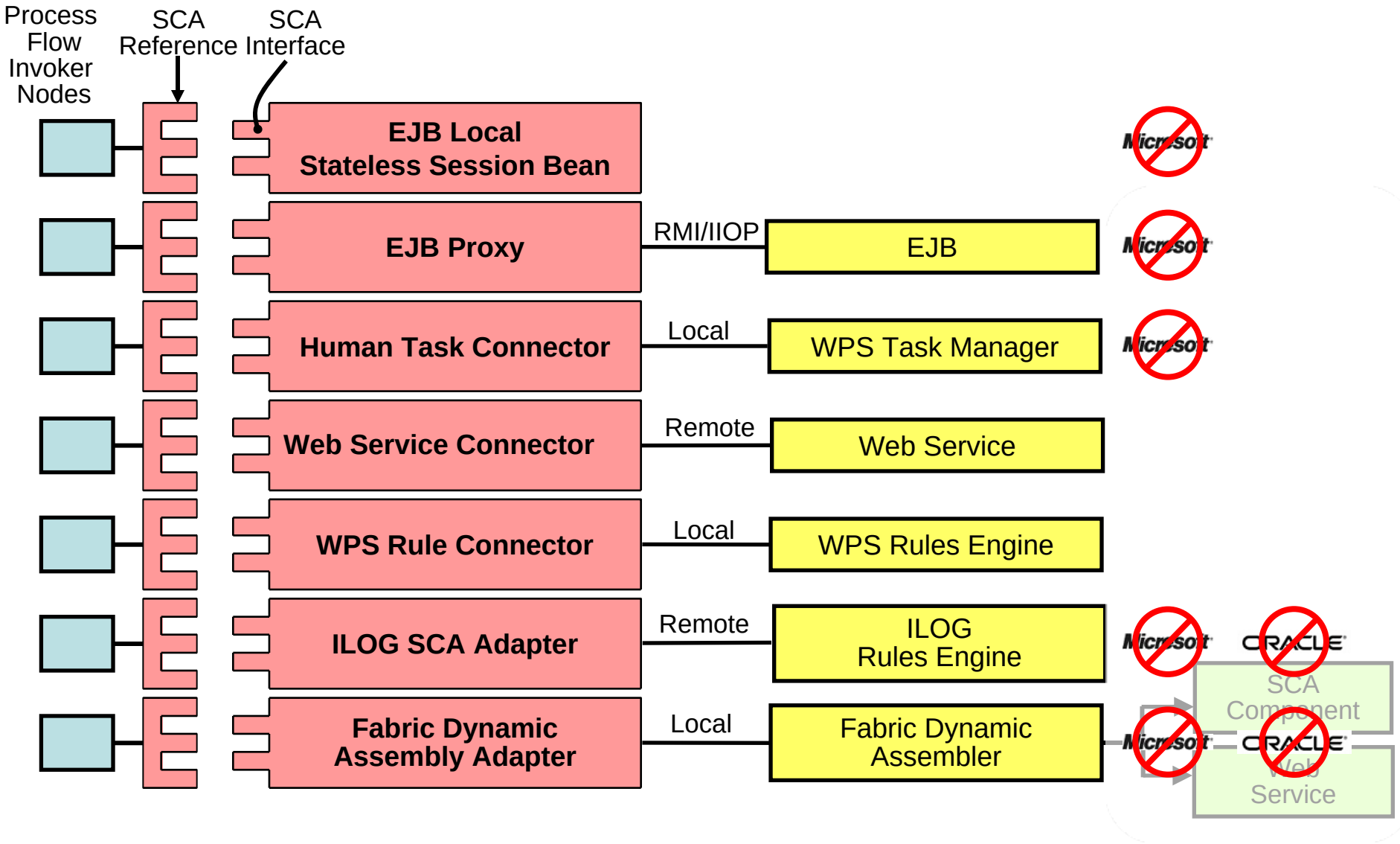
Service components can be

- Wired-in to the reference at assembly time
- Changed at assembly time
- And, as we'll see, selected or substituted at runtime

Types of service components

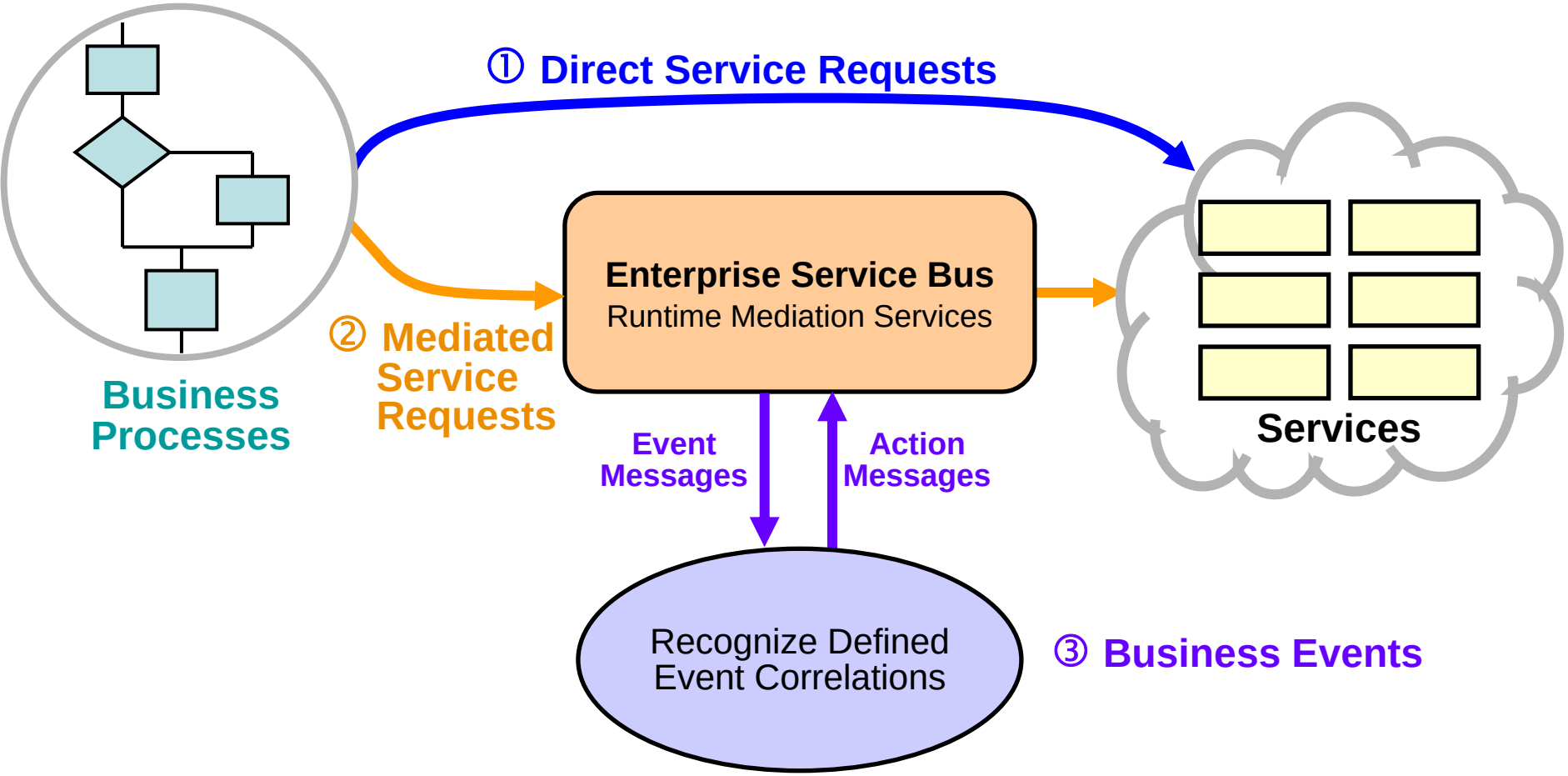
- EJB code
- Proxies to call Web services (e.g. a CICS transaction wrapped as a Web service)
- Proxies to send a task to a human
- Proxies that make decisions about what to do at run time

Process Flex Points Are Built On Service Component Architecture

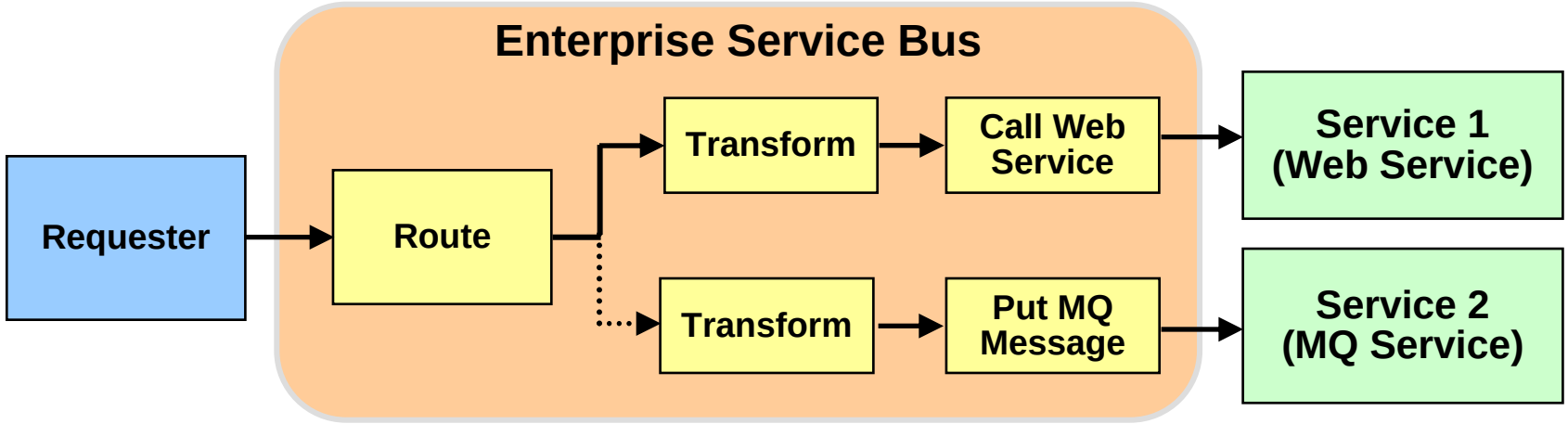


Flexible Smart Planet Solutions: The Bigger Picture

Three more programming patterns can be used together or separately



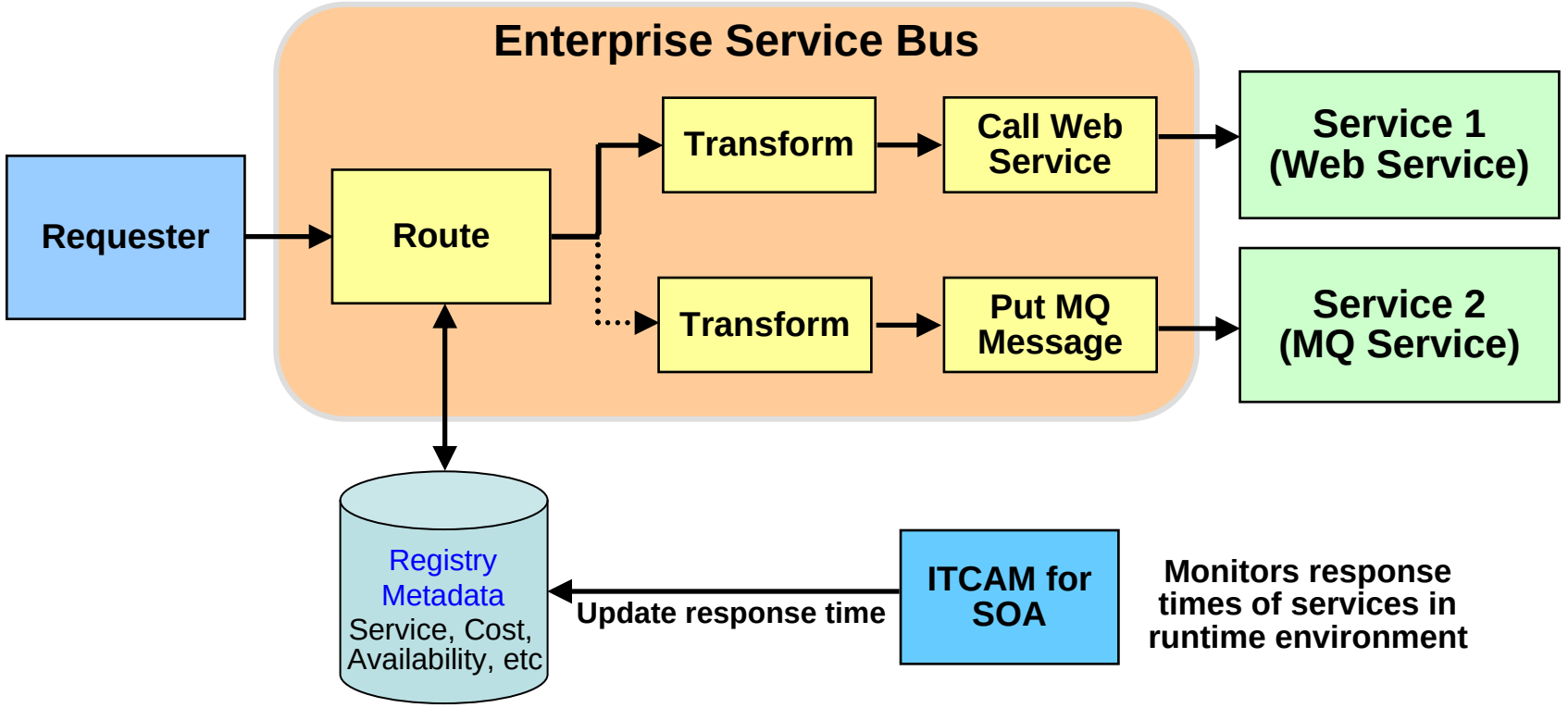
Enterprise Service Bus Provides Mediation Services At Runtime



Runtime Mediation Services:

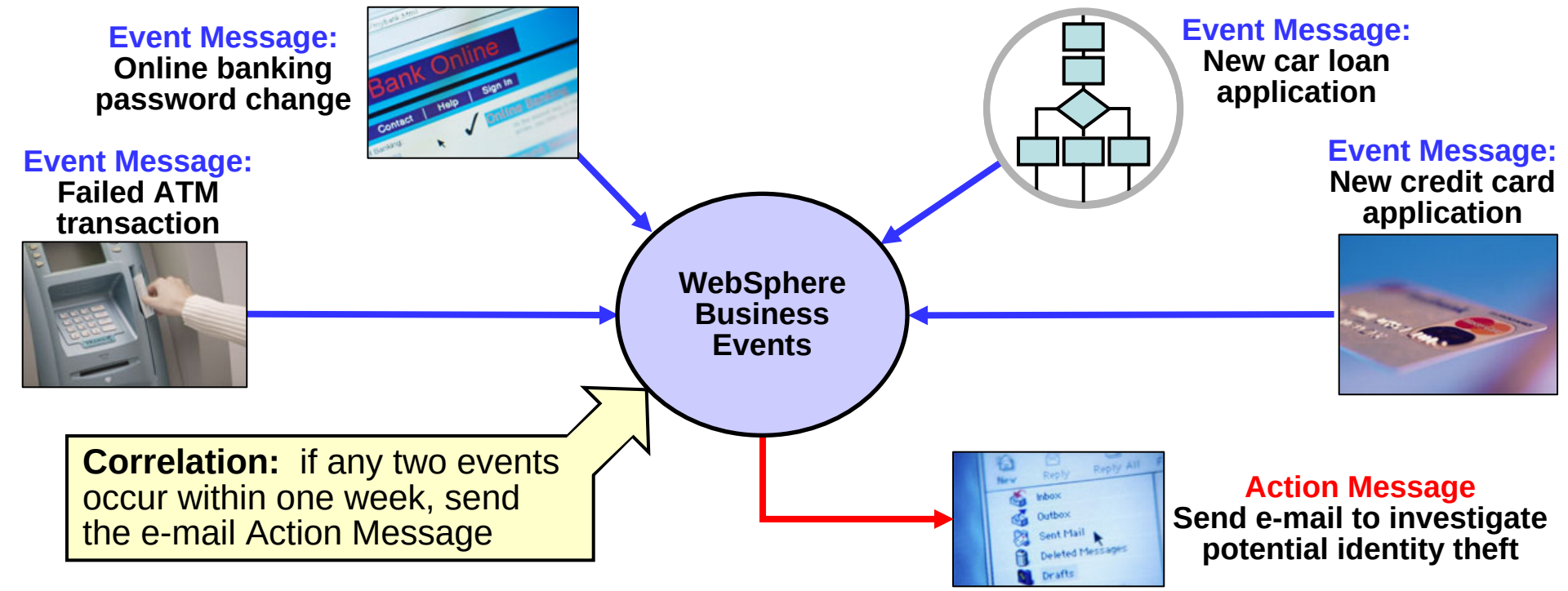
- Routing
- Message transformation
- Protocol Conversion
- Data Augmentation

Dynamic Decisions At Runtime With WebSphere Service Registry And Repository



Use information about the run time environment to make dynamic routing decisions

Correlate Banking Events To Detect Potential Fraud

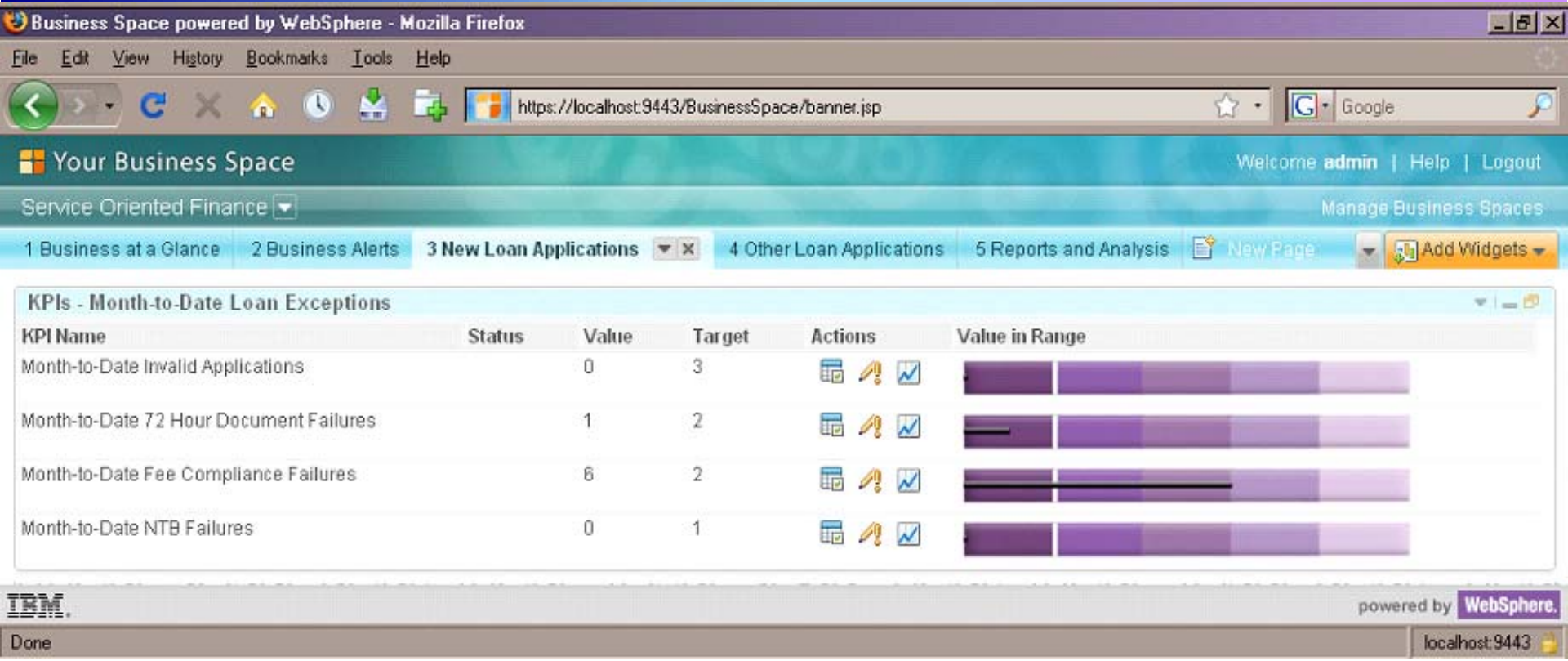


- **Business events** are discovered and described in **business terms**
  - Event recognition patterns can be specified by a **business analyst**, using included codeless, graphical authoring tools with straightforward expression of business event interaction logic
  - Delivers simple and integrated **dashboard visualization** of results

Microsoft No capability

ORACLE IT-focused, not for business user

Business Space Uses Web 2.0 Technology To Provide Role-Based User Interfaces Quickly



- Provides user interfaces into flexible process solutions
- Build views quickly using Mashup technology for integration at the browser
- Flexibility to customize for local variations and business roles
- Widgets use RESTful access to runtimes

Business Space Supports Role-Specific User Interfaces

Specific Roles:

1. Business Leader
2. Business User
3. Business Analyst
4. Process Owner
5. IT Leader
6. IT Architect
7. IT Developer
8. BPM Administrator

Browser-based User

Business Space Application

REST API | WebSphere Process Server

REST API | WebSphere Business Modeler Publishing Server

REST API | WebSphere Business Monitor

REST API | WebSphere Business Fabric

REST API | WebSphere Enterprise Service Bus

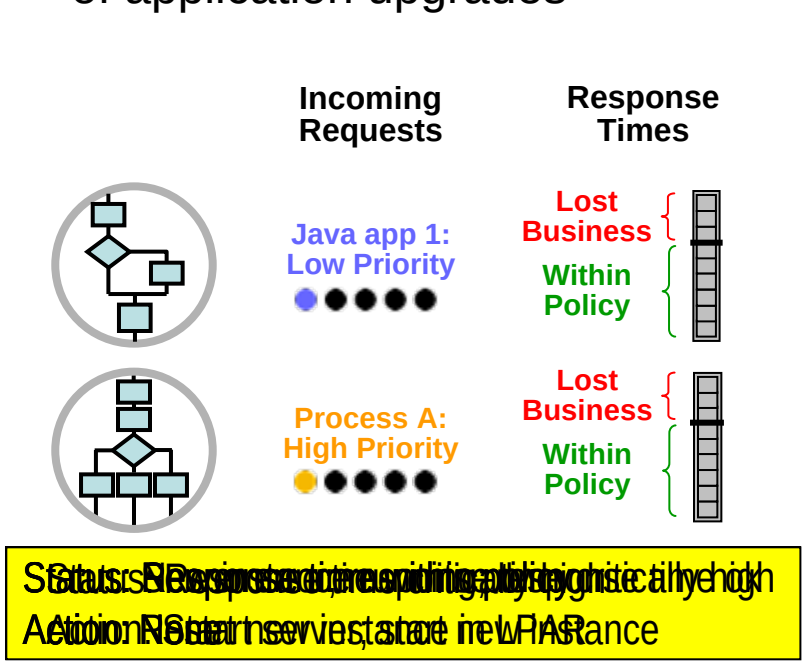
Version 6.2

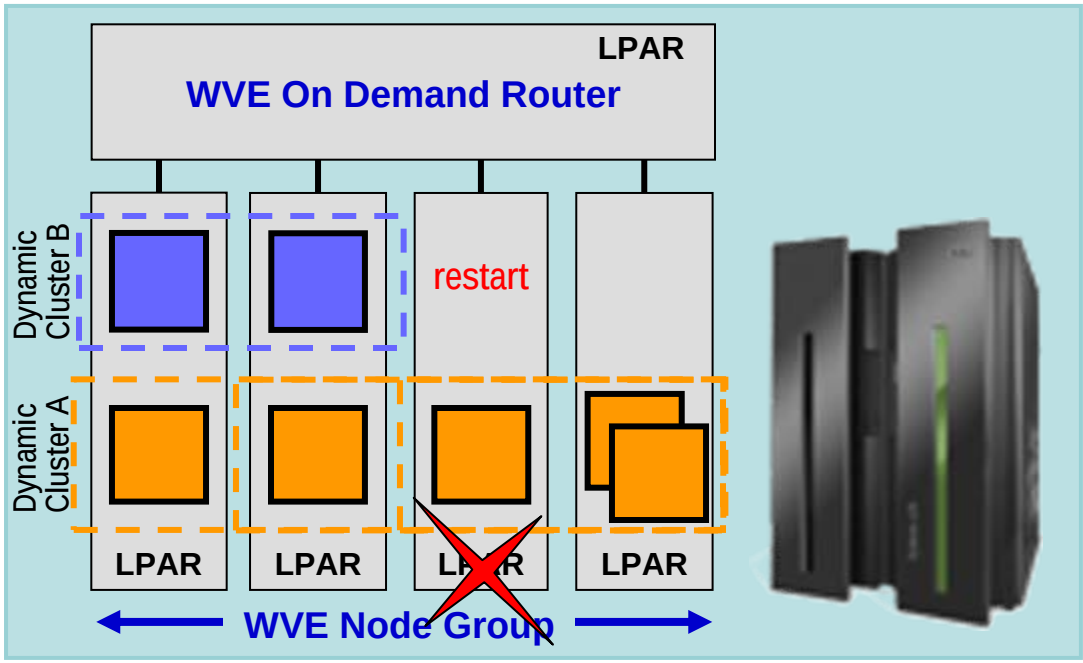
BPM REST Platform

Microsoft No capability

IBM WebSphere Virtual Enterprise Can Flexibly Scale Up WebSphere Process Server

- **Manages workload** distribution based on SLA policies and request prioritization
- **Reduces costs** by maximizing utilization of system resources
- **Monitors health** and automatically restarts instances without operator intervention, providing **continuous availability**
- Application Edition Management provides **interruption-free rollout** of application upgrades





This approach lowers costs AND keeps your business running non-stop

Why Deploy This Process On System z?

- A Smart SOA implementation requires high quality of service from the deployment platform
  - Workload Management to handle peak demand
  - Scalability and Clustering
  - Continuous Availability/Disaster Recovery
  - Rock-solid Security
- Running on the same server provides performance advantages
- Lowest cost!

IBM Smart SOA Software Runs On System z

Product	Linux on System z	z/os
WebSphere Process Server	x	x
WebSphere Enterprise Service Bus	x	X
WebSphere Application Server	v7	v6
WebSphere Service Registry and Repository	x	x
WebSphere Business Events	x	
WebSphere Business Services Fabric	x	x
WebSphere Business Modeler Publishing Server	x	
WebSphere Business Monitor	x	
ILOG jRules	x	x

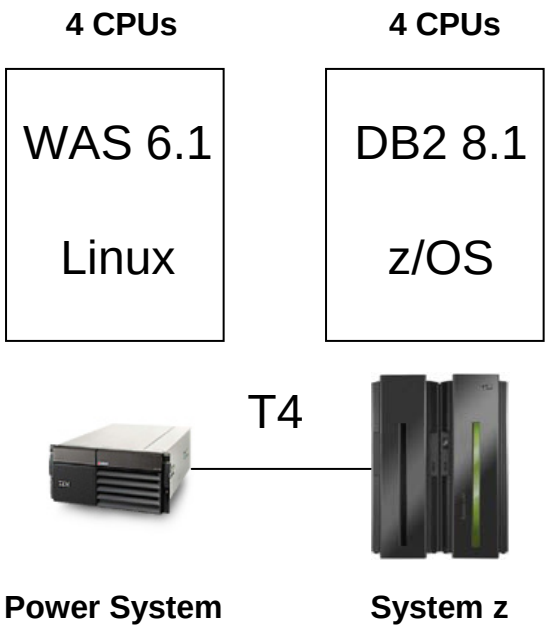
Co-location Performance Advantages

- Mainframes already house the core DB2, CICS and IMS applications and data for the business
  - Quickly expose these assets as services
- Deploying WebSphere Process Server, WebSphere Portal Server, and the assets they use in close proximity provides better performance and throughput
- HiperSockets technology greatly reduces network overhead
  - Direct memory-to-memory communication avoids layers of network code for fast performance
  - Better networking security (no wires)

On-Line Banking Benchmark Demonstrates Performance Advantages Of Co-location

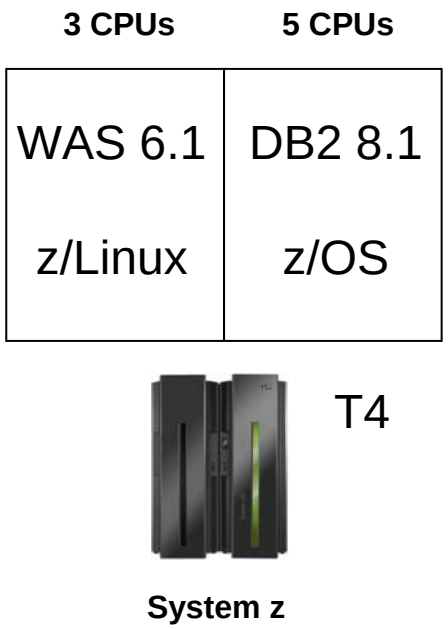
Separate Machines

150 tps



Same Platform

186 tps



z Series Server : z9-EC, 8 X 1.7 GHz, 64 GB RAM

Deploy WebSphere Process Management Application On Mainframe vs. HP Servers

Existing Mainframe

Existing z10:
2 GP 1,720 MIPS
DB2 and utilities
With 20TB storage

Existing Disaster Recovery Site

Existing:
1 GP processor for hot disaster switch-over
1 "dark" DR processor
With 20TB storage

Add LPAR for New Web Application w 1.28 TB storage

Prod

1,624 MIPS additional workload

Incremental:

1 zAAP	920 MIPS WPS & Portal (85%)
1 GP	541 MIPS DB2
	163 MIPS WPS & Portal (15%)

2 GB memory

And Add Disaster Recovery w 1.28 TB storage

Prod

Capacity Backup:
1 GP
1 zAAP

3 year cost of acquisition $4.06M

Or Add HP Integrity Superdome 9140 Server w 1.67 TB storage

Prod

201,977 Performance Units*

And Add Disaster Recovery w 1.67 TB storage

Prod

201,977 Performance Units*

3 year cost of acquisition $14.36M

**Production Performance Units required = 1,624 x 122 = 198,128*

WebSphere Process Management Incremental Cost Breakdown

Mainframe Incremental Hardware

OTC		ANNUAL	
GP	$1,358,000	Processor Maintenance * (For year 2, 3)	$90,142
zAAP	$125,000		
DR Processors	$27,000		
Memory (2 GB)	$4,500	Storage Maintenance (For year 2, 3)	$5,272
IBM Storage (1.28TBx2)	$141,750		
TOTAL	$1,656,250	TOTAL	$95,414 (year 2, 3)

Mainframe Incremental Software

OTC		ANNUAL	
DB2 Utilities	$346,565	Utilities S&S	$49,931
WebSphere Process Server	$403,030	Process Server S&S	100,860
		Portal Enable S&S	$48,380
		DB2 MLCx12	$107,088
WebSphere Portal Enable	$241,900	z/OS MLCx12	$52,296
		QMF MLCx12	$47,724
TOTAL	$991,495	TOTAL	$406,279

Distributed Incremental Hardware

OTC		ANNUAL	
HP Integrity Superdome 9140 Server	$2,682,242	Server Maintenance (Prepaid in year 1 for 3 years)	$309,948
HP storage (1.67TBx2)	$749,805	Storage Maintenance	$44,400
TOTAL	$3,432,047	TOTAL	$974,244 (year 1) $44,400 (year 2,3)

Distributed Incremental Software

OTC		ANNUAL	
Oracle EE & Utils	$1,168,500	Oracle S&S	$257,070
Oracle BPEL Process Server	$2,220,000	Oracle BPEL Process Server S&S	$488,400
Weblogic Portal	$2,220,000	Weblogic Portal S&S	$488,400
Unix	$265,440	Unix S&S (prepaid in year 1 for 3 years)	$96,843
TOTAL	$5,873,940	TOTAL	$1,524,398 (year 1) $1,233,870 (year 2, 3)

** Mainframe Processor Maintenance includes the maintenance for general purpose processors and specialty engines*