



# System Z as the Hub for SOA

Enabling Innovation for System z

*Tom Rosamilia*

*Vice President, WebSphere*



## Innovation: The Top Focus for Business

- Due to competitive and market forces, CEOs plan to radically change their companies in the next 2 years.
- > 80% of CEOs stated their organizations have not been very successful at managing change
- 78% of CEOs believe integrating business and technology is fundamental for innovation

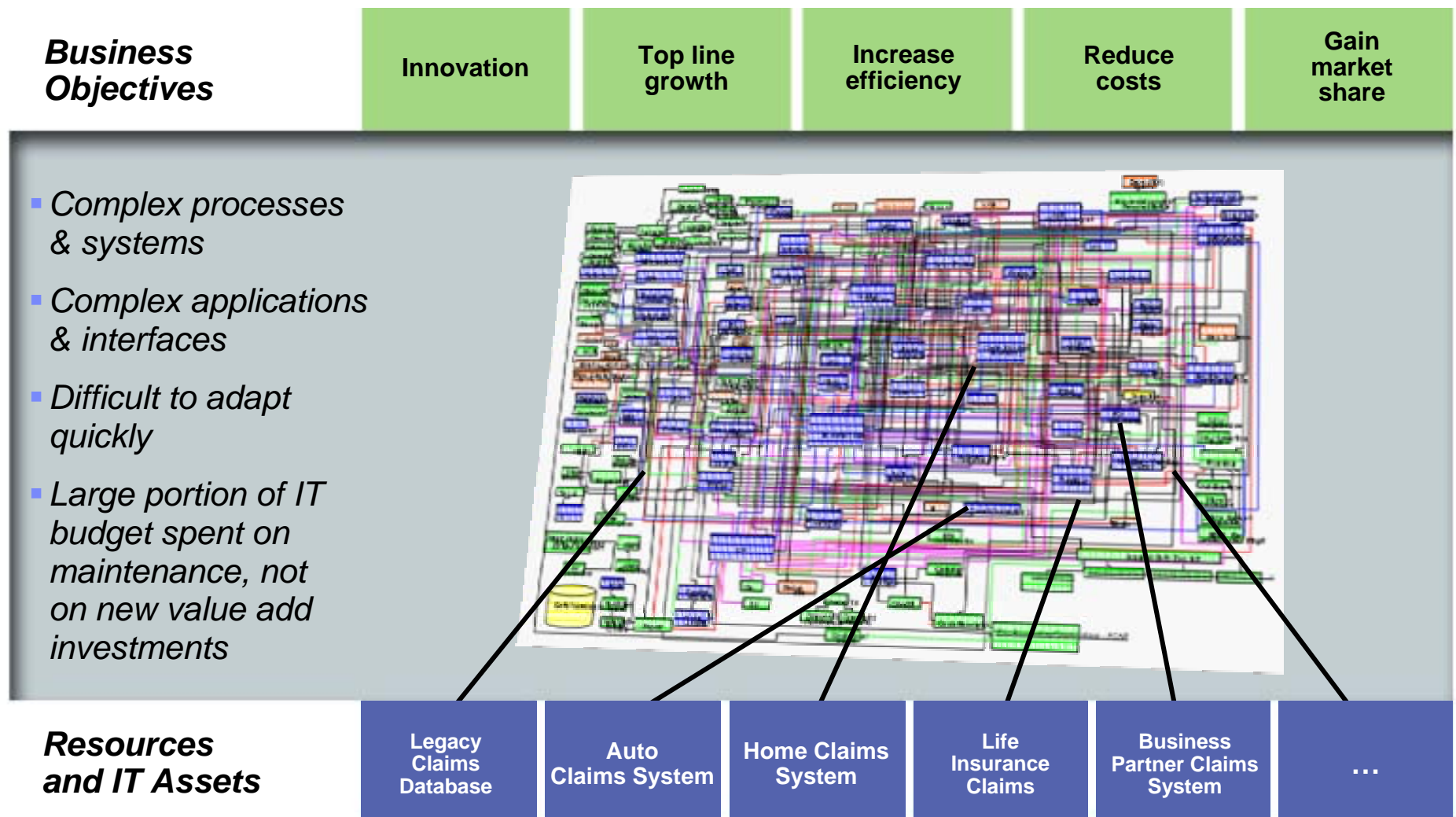


Source: IBM Global CEO Survey, March 2006

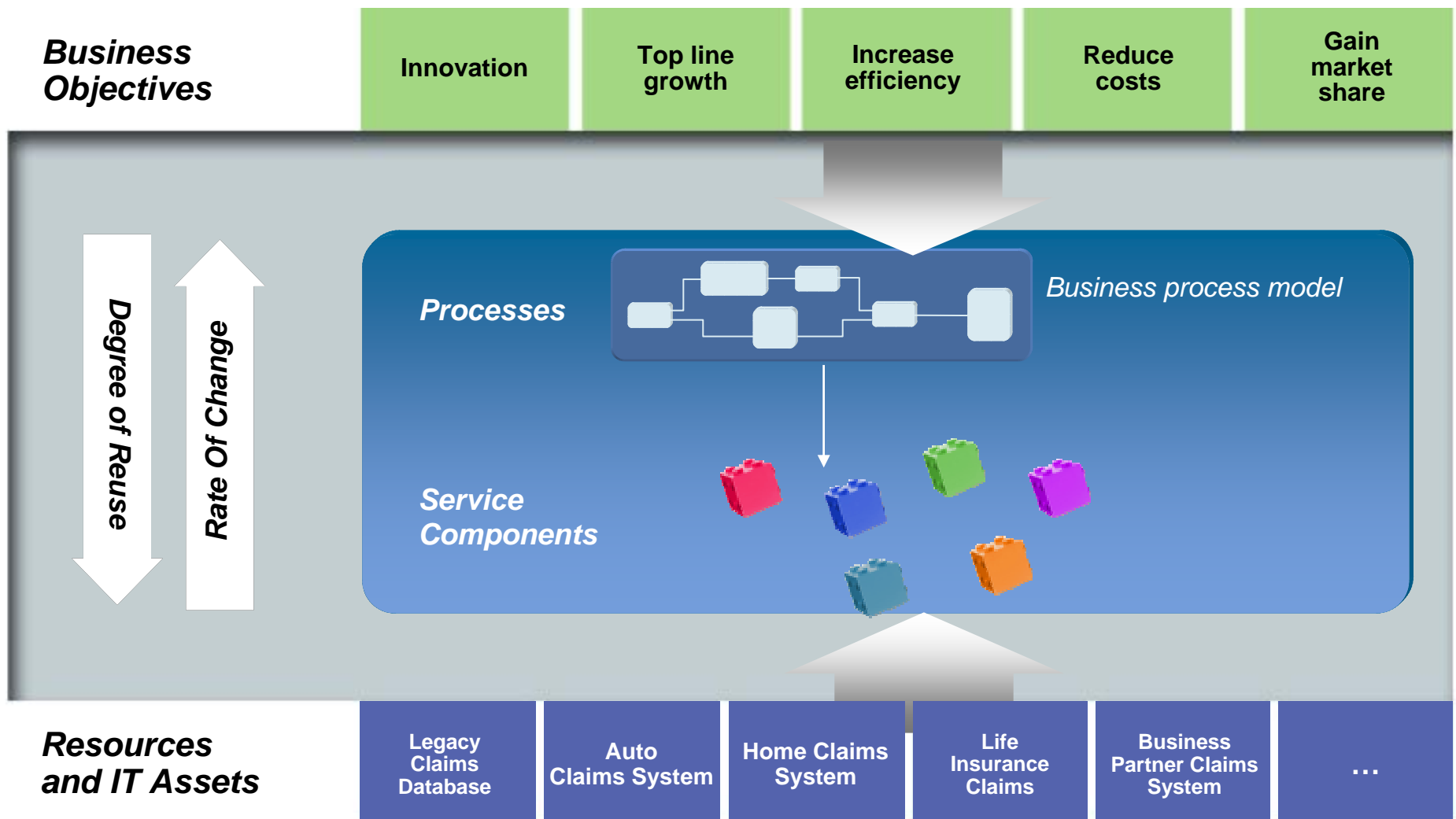
*The Goal: Strategic Flexibility Through Innovation*



# The Challenge



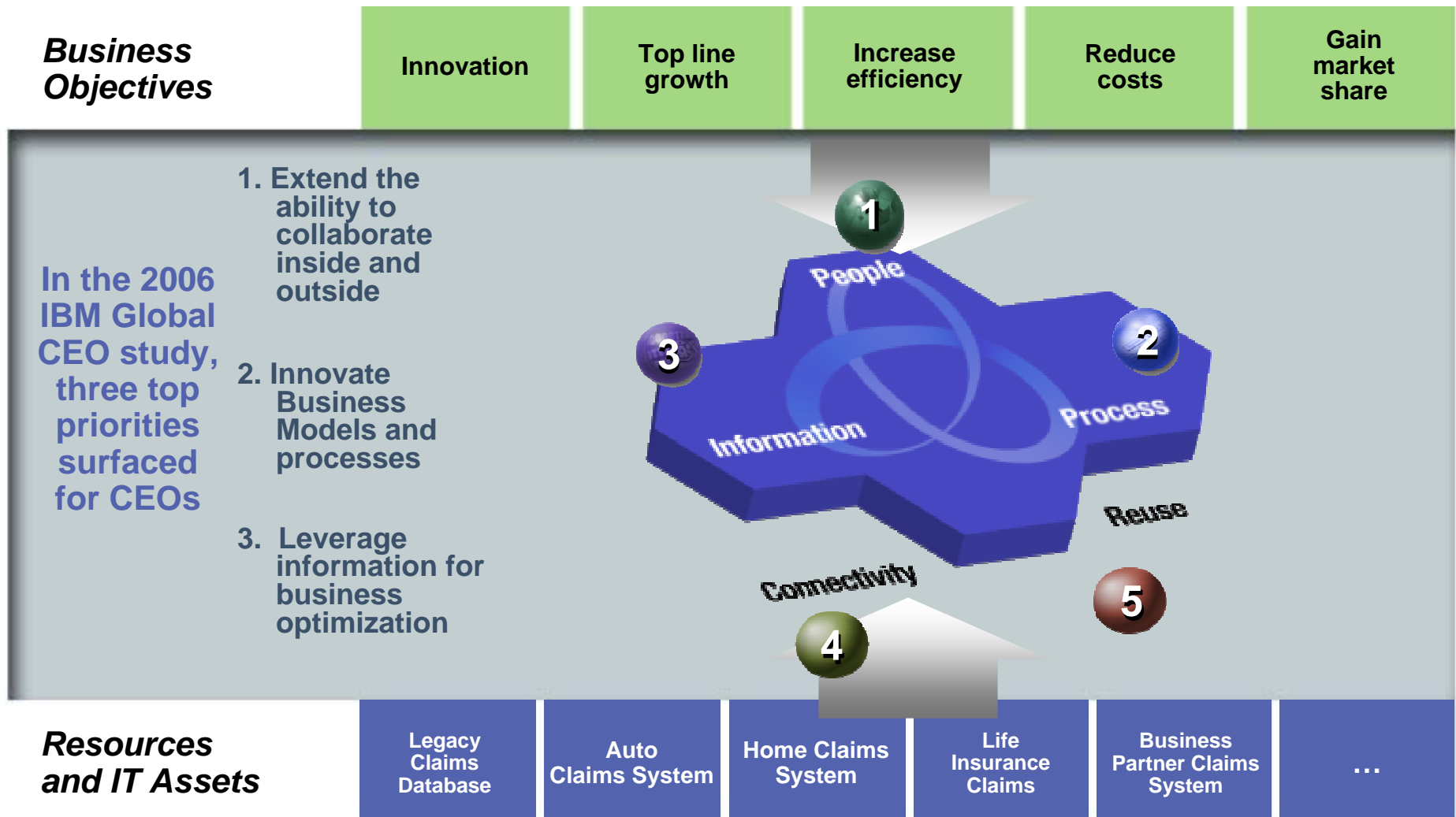
# Service Oriented Architecture Addresses this Challenge





# SOA Entry Points Help Customers Get Started to Address this Challenge

*Both Business Centric and IT Focused*



# Customers realizing value across multiple industries

Half of the world's 30 biggest electronics companies

8 of the world's 10 biggest banks

9 of the world's 10 biggest telcos

80 SMB references

10 of the world's 10 biggest auto manufacturers



8 of the world's 10 biggest insurers

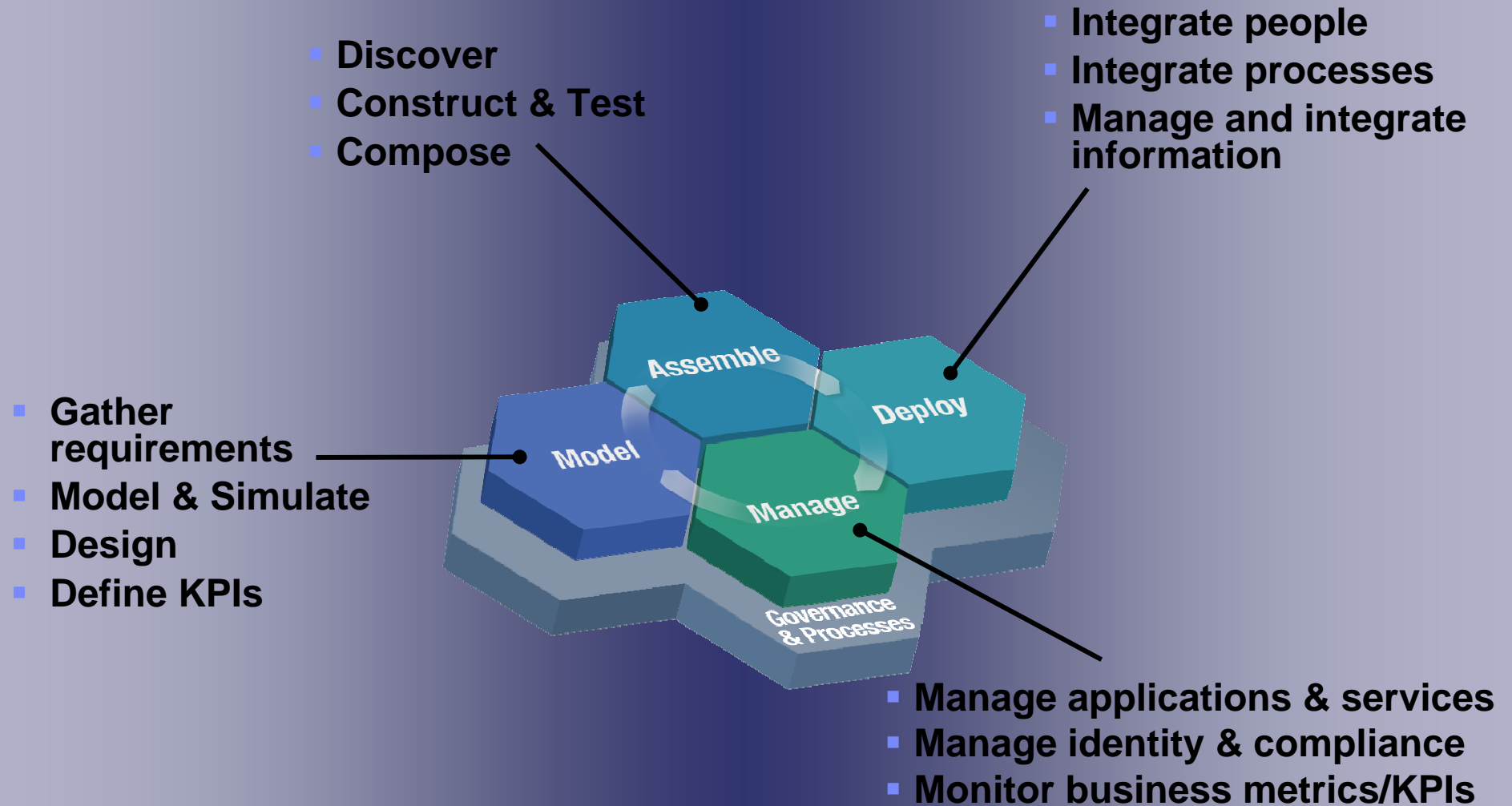
More than 2,500 SOA Business Partners

4 of the world's 10 biggest retailers

80% of the biggest US health plans

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

# The SOA Lifecycle

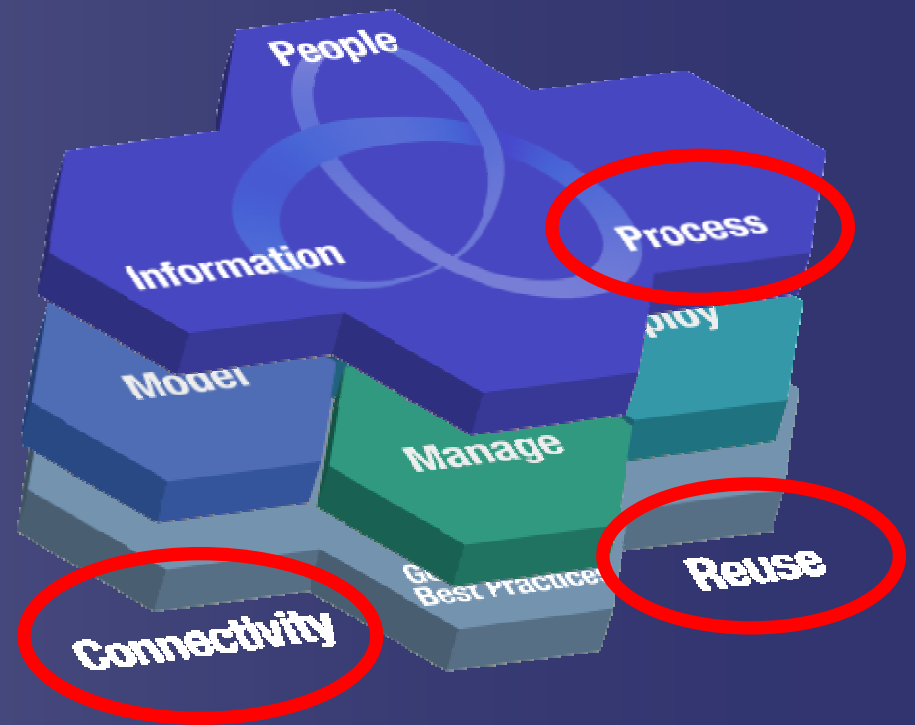


# SOA Entry Points in Process, Connectivity and Reuse

*IBM's strategic SOA investments in System z*

## **System z as the SOA Hub for:**

- *Reuse*
- *Connectivity*
- *Process*



# SOA Entry Points Help Customers Get Started

## *Both Business Centric and IT Focused*

### **Information**

WebSphere Information Server  
 DB2 Viper  
 WebSphere RFID Premises Server / Device Infrastructure  
 Master Data Management

### **People**

WebSphere Portal  
 Front End Tooling Innovation  
 SOA Dashboard Offerings

### **Process**

WebSphere Process Server for z/OS  
 WebSphere Business Modeler  
 WebSphere Business Monitor  
 WebSphere Integration Developer

### **Connectivity**

WebSphere MQ  
 WebSphere Enterprise Service Bus for z/OS  
 Web Sphere Message Broker  
 WebSphere Adapters for z/OS  
 WebSphere Service Registry/Repository



### **Reuse**

WebSphere Application Server V6.1  
 CICS Transaction Server V3.1  
 z/Transaction Processing Facility  
 WebSphere Developer for z/OS



# SOA Entry Point to Creating & Reusing Services

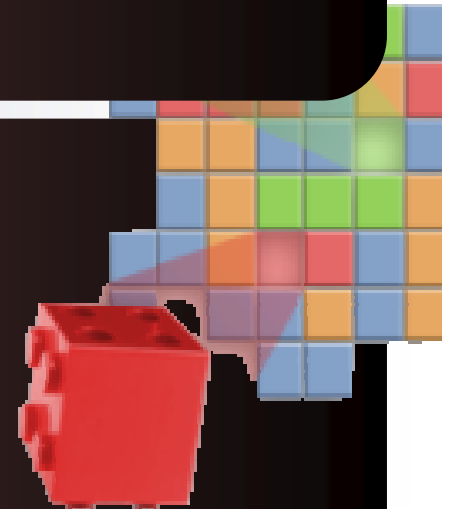
*Create and Deploy Flexible, Service-based Business Applications*

## **z Value**

- Flexibility and elimination of duplication for reduced cycle times and lower project risks
- Expanded access to core applications and business rules
- Consultant studies have found it 5X less expensive to re-use existing applications than to write new applications

## **Start with**

- Identify high-value existing enterprise assets and service-enable them for reuse
- Fill in gaps by creating new services for today's business needs and future reuse
- Registry/repository to facilitate centralized access and control of reusable services





# A bright and rising future for CICS Transaction Server

*Rock-solid deployment platform, 100% aligned with SOA technologies*

## **CICS Transaction Server V3.1**

enhanced

- Build Web services with no change to existing applications
- Highest levels of data integrity and security
- Optimized throughput and performance
- Simple and intuitive management
- New SOA Statement of Direction
  - ▶ Extended integration of the CICS Service Flow Runtime with WebSphere Process Server
  - ▶ CICS support of WebSphere Service Registry/Repository
  - ▶ Support for Event Driven Applications



# WebSphere Application Server v6.1

*Powering your SOA for the Ultimate in Business Flexibility*

## Standards Based and Open

- J2SE 5.0
- Web services standards
  - WS-Interop Basic Security
  - WS-Notification
  - WS-BusinessActivity
- JSR168 Portlets
- JSR116 SIP Servlets

## Platform Capability

- Proxy Server Enhancements
- Integrated User Registry
- Government Standards

## Consumability

- Common code base for application portability and consolidation to System z
- Application Server Toolkit, including automation tools and Command Assistance
- Simplified Administration
  - Steps for many tasks reduced +50%
- Simplified SSL Key/Certificate Management
- Security enhancements
- IHS administration enhancements
- Integrated Support Assistant
- Install Factory



**WebSphere  
Application Server  
V6.1**



# Advancing the Application Server to the next level

## **64-Bit Support on WAS 6.1**

**NEW!**

- Allows WebSphere Application Server to run in a 64-bit virtual addressing Mode
- Removes restriction on amount of virtual storage available to both the applications and the server
- Currently in Beta
- December deliverable

## **“Apache HTTP Server on z/OS” on WAS 6.1**

- Provide and easier to use HTTP server on z/OS
- Port of distributed code base onto z
- Currently in Beta
- December Deliverable



# WAS v6.1 Feature Packs

*Bringing State-of-the Art Technology to Market Quickly!*

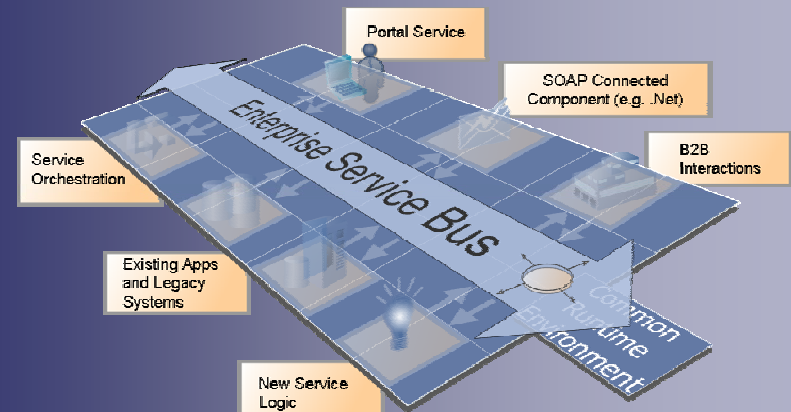
## Web Services- Alpha, June '06

- Windows & Linux, February '07 GA, all platforms
- Delivery of Reliable Asynchronous Messaging Profile
- Provides secure, reliable business process integration with those of customers and suppliers allowing interactions to span long durations
- Java and SCA programming models
- Community Centric Profiles delivered in WAS 7.0

## SOA- Alpha, June '06

- ▶ Windows & Linux, 2Q07 GA, all platforms
- ▶ Tuscany code base on WAS 6.1
- ▶ SCA and SDO Samples
- ▶ Whitepapers, BLOGs – to detail IBM's plans for SCA and SDO within an SOA environment
- ▶ Includes SOA Core from WPS 6.0 (for interoperability)

**NEW!**



# WebSphere Extended Deployment for z/OS V6.0.1

## Service mixed environments more efficiently

- *Enables REAL IT environments*
  - *Mixed application servers (WebSphere and non-WebSphere)*
  - *Mixed workloads (J2EE transactional batch and OLTP)*
- *Enhances quality of service management for a mixed application servers and data sources*

## Easily manage large scale production implementations

- *At-a-glance assessments of system vitality and improved application management*
- *Interruption-free application updates to manage deployment of multiple application versions*

## Improve the performance and throughput of your transactions

- *Near linear scalability for **high-end transaction processing***
- *Enhanced data access for accelerating throughput*
- *Partitioning facility enables development of highly scalable, high performance J2EE applications*

## Accommodate peaks in demand by better utilizing existing resources

- *Compliment the value of z/OS workload manager (WLM) with granular prioritization of J2EE workloads and enhanced cross-LPAR routing capabilities*
- *Functions with Intelligent Resource Director (IRD)*



# Bank of Montreal Exploits its Re-usable Assets

## *Integration with the mainframe is essential for BMO's SOA*

### Actions & Benefits:

To increase customer satisfaction, BMO needed a new teller application that integrated with its sales and CRM systems

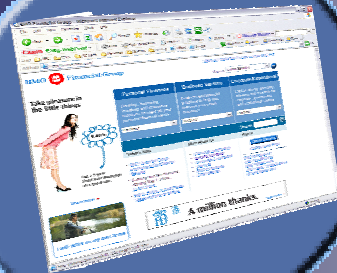
“WebSphere was very attractive to us because of its ability to integrate with our existing main-frame legacy systems.”  
 — Randy Oswald, senior vice president, technology and solutions, BMO Financial Group



Used flexible **Web services** to transform core CICS systems to integrate with Siebel CRM



Built an SOA using **WebSphere's** open standards for interoperability between disparate products and platforms



**Improved productivity & efficiency** with reduced operating costs using WebSphere integration on z/OS

Capabilities used: WebSphere Message Broker, WebSphere Application Server, CICS





# Standard Life's Re-usable Assets

## *Transactions reused as Web services*

### Actions & Benefits:



Flexible integration through **WebSphere MQ Message Broker**, invoking CICS and IMS applications as Web services



Offer agents timely value-loaded portal access to data through **WebSphere Application Server**



Lowered development costs and risk by reusing **Web services based** code assets



Over 50% of Business Services are re-used, **saving >\$5M** in development costs

Capabilities used: IBM WebSphere Message Broker, WebSphere Application Server, CICS and IMS



# SOA Entry Points Help Customers Get Started

## *Both Business Centric and IT Focused*

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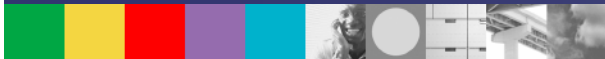
### **Connectivity**

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 WebSphere Service Registry/Repository



### **Reuse**

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# SOA Entry Point to Connectivity

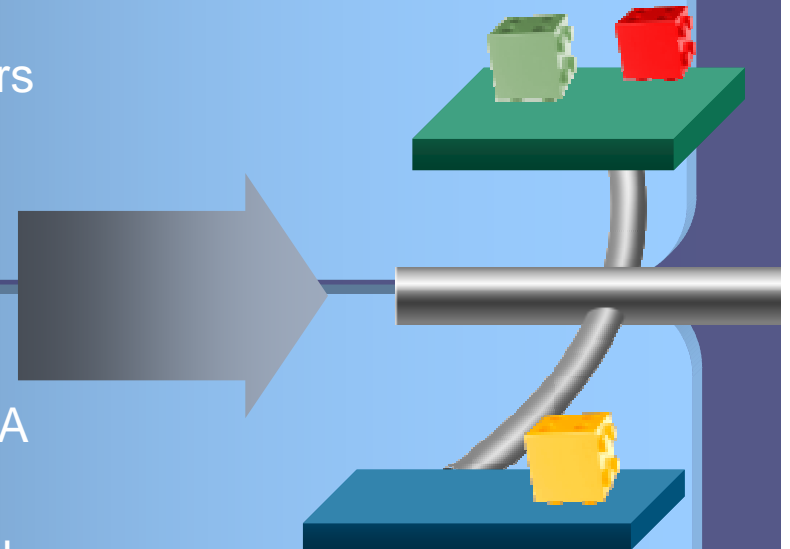
## *Connectivity to Support Business Centric SOA*

### **z Value**

- Deliver services through new business channels for a secure, consistent user experience
- Service-based connections with trading partners
- Potential savings of 2 – 4x over custom-built integration or FTP

### **Start with**

- Messaging backbone as the foundation for SOA connectivity
- Enable mediated exchange between services, by leveraging an ESB
- SOA appliances integrate for ESB functions in a hardware form factor



# Connect Services

*with WebSphere ESB and WebSphere Message Broker*

**Break through limits to deliver end-to-end reliable and secure connectivity with integration to all applications, systems, and services**

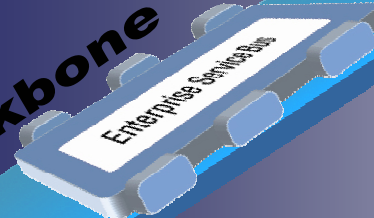
**ENHANCED!**

## **WebSphere ESB**

(for Web services including the latest WS-\* standards)

- **Web Services connectivity, JMS messaging and Service Oriented Integration**
- **Seamless integration with the WebSphere platform**
- **Improved time to value**

**Messaging Backbone**



**ENHANCED!**

## **WebSphere Message Broker**

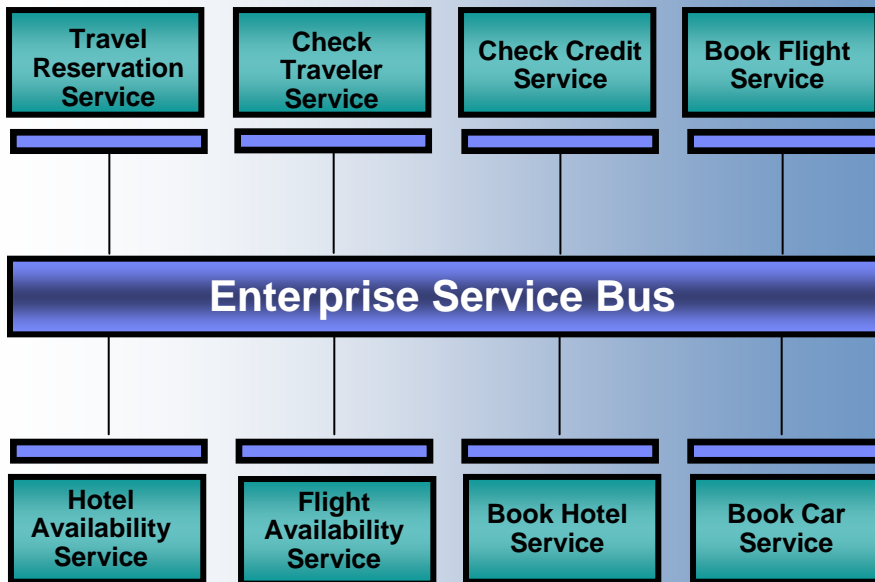
(the advanced ESB for high performance integration of Web services and non-Web services assets)

- **Provides Web Services connectivity and non standard interface connectivity**
- **Unmatched in integrating heterogeneous systems, platforms, devices, APIs, etc...**
- **Universal transformation, high performance, and integrated complex event processing**

# WebSphere ESB and WebSphere Message Broker

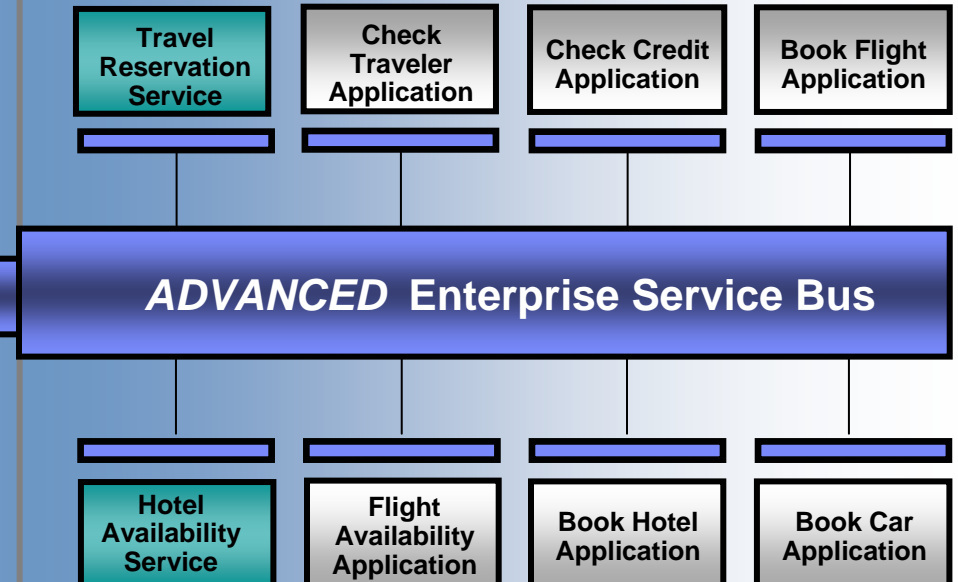
## Connecting People, Process, and Information

**1** If all your applications conform to the Web Services standards...



...then all you may require is an **ESB** focused on standards-based service integration.

**2** If not all your applications conform to the Web Services standards...



...then you may require a more **advanced ESB** focused on the integration of services with existing non-services assets.



# WebSphere ESB and WebSphere Message Broker

**ESB:**

**WebSphere ESB**

**Advanced ESB:**

**WebSphere Message Broker**

**Web Services connectivity  
and data transformation**

**Universal connectivity  
and data transformation**

**HTTP      JMS**

**WebSphere MQ**

**Web Services      XML**

**WebSphere Adapters**

**HTTP      JMS      WebSphere MQ**

**Web Services      XML      WebSphere  
Adapters**

**Plus the following:**

Weblogic JMS®      Biztalk®      TIBCO Rendezvous®

MQe      Multicast      Tuxedo®      FTP      TIBCO EMS JMS®

COBOL      HIPAA      EDI-FACT      HL7      SonicMQ JMS®

Copybook      ACORD      Real-time IP      AL3      Word/Excel/PDF

SWIFT      FIX      ebXML      EDI-X.12      MQTT      Custom Formats

***Customers face a range of ESB requirements. As a result, any given project might require an ESB or an Advanced ESB... OR BOTH.***





# Data Transformation to Meet your Needs **NEW!**

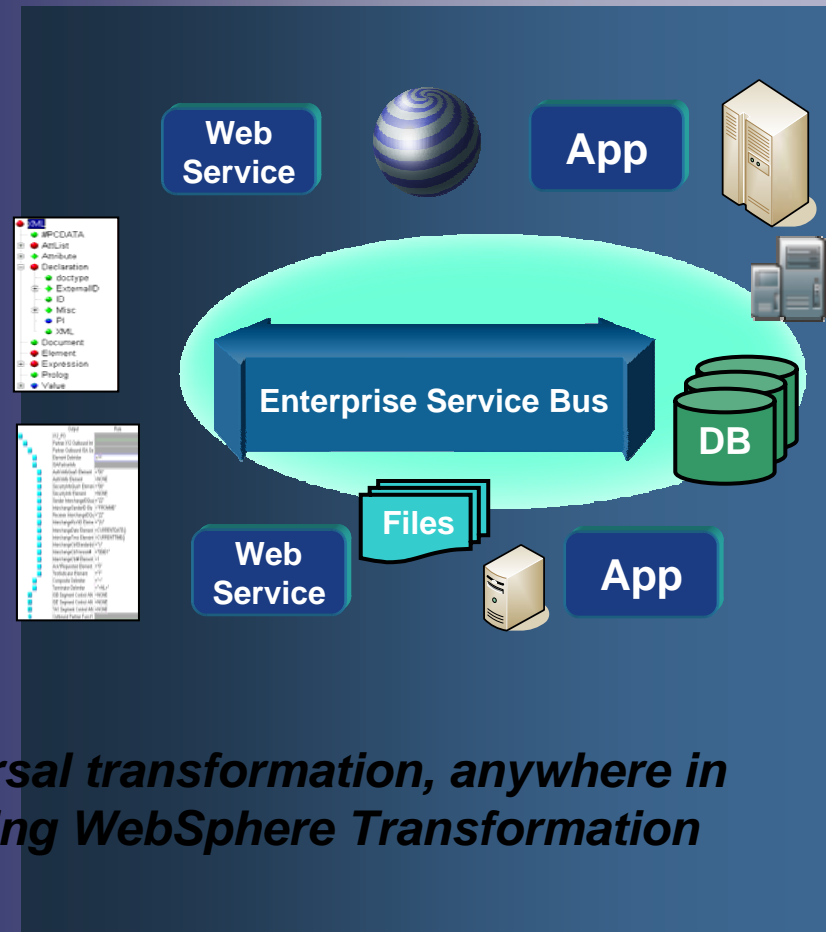
*with WebSphere Transformation Extender*

## Map and Transform any data to multiple formats anywhere in your SOA

- ▶ Flexible and integrated transformation
- ▶ Embed within applications
- ▶ Execute from scripts
- ▶ Drive with Events
- ▶ Deliver as Services or deploy on Appliances



***Flexible options for universal transformation, anywhere in your SOA with an ESB using WebSphere Transformation Extender.***



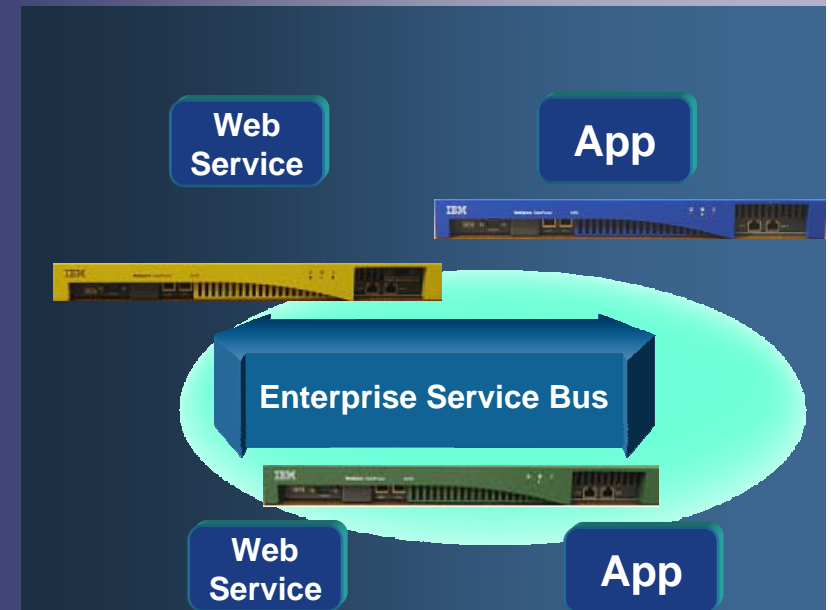
# DataPower Appliances

*Specialized SOA Hardware to Extend ESB Capabilities*

**NEW!**

## Extend ESB functionality in a hardware form factor using appliances

- ▶ Simplify SOA
- ▶ Help Secure Web services
- ▶ Accelerate SOA with wire speed performance
- ▶ Easy-to-deploy appliances
- ▶ Robust Service Level Management & Web Service Management



*Simplify, help Secure and Accelerate SOA and your ESB, with WebSphere DataPower SOA Appliances*

# WebSphere Service Registry and Repository

*Promotes SOA Governance through management of assets*

*Platform for  
Business Connectivity*

***An enterprise-wide service registry and repository improves visibility, reusability, adaptability, and manageability of services***

## The WebSphere Service Registry and Repository ...

- **A repository** for service metadata
  - ▶ for example, WSDL and XSD
- **For publication** of services
  - ▶ to advertise their capabilities
- **For finding** suitable services
  - ▶ for reuse and runtime agility
- **For capturing** service dependencies
  - ▶ to support change management
- **An extensible** framework
  - ▶ to support validation and notification

**NEW!**



# Connect existing and new services & other assets

*Avis creating value with their System z assets*

## Actions & Benefits:



Provided shared access to **corporate-wide data** across SOA Infrastructure

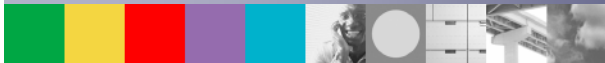
Flexible integration through **WebSphere MQ Message Broker**, reusing existing applications as Web services



Objective to be **first to market** with new capabilities, lower development time and costs

**Accelerated service delivery time** to address customer requirements and competitive pressures

Capabilities used: IBM WebSphere Message Broker, WebSphere MQ, WebSphere MQ, DB2, and Tivoli on Z/OS



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# SOA Entry Point to a Process Centric Approach

## *Business Process Management for Continuous Innovation*

### z Value

- Innovative, SOA driven business models deployed quickly with flexible processes
- Automate and integrate core processes
- Centralize business critical processes with core services and communications hub necessary to support the enterprise



### Start with

- A single process – model an underperforming process, and deploy as an enhanced process.
- Flexibly link multiple processes across the enterprise & to suppliers / partners. Monitor the process to measure & track performance.



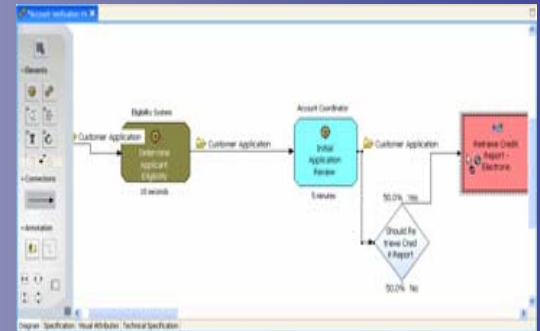


# Model Business Processes for SOA roll-out with WebSphere Business Modeler



## ■ Modeling For Compliance/Documentation

- ▶ Document processes for use by a business to understand the business process
- ▶ Customers use output for training, collaboration, documentation requirements for compliance regulations (Sarbanes-Oxley and Basel II)
- ▶ Linkage to real-time monitoring provides a feedback mechanism for reporting requirements needed for compliance



## ■ Modeling For Redesign

- ▶ Document both the current state and future state business process and the comparison to determine Return on Investment (ROI) analysis
- ▶ Six Sigma and Process Improvement are common methodologies

Subject	Status	Priority	Type	Author	Responses	Created	Modified
Comment on the Account Verification As Is Process	Open	High	Suggestion	wspreadmin	1	Sat Jul 09 20:26:42 EEST 2005	Sat Jul 09 20:26:42 EEST 2005

## ■ Modeling For Execution

- ▶ Modeler can create artifacts from the business model and make them available in technology development tools to reduce the overall implementation time of new business processes.

**Set KPI's based upon key performance objectives**



# Assemble Composite Applications with WebSphere Integration Developer



## Streamlining process design hand-off between business and IT

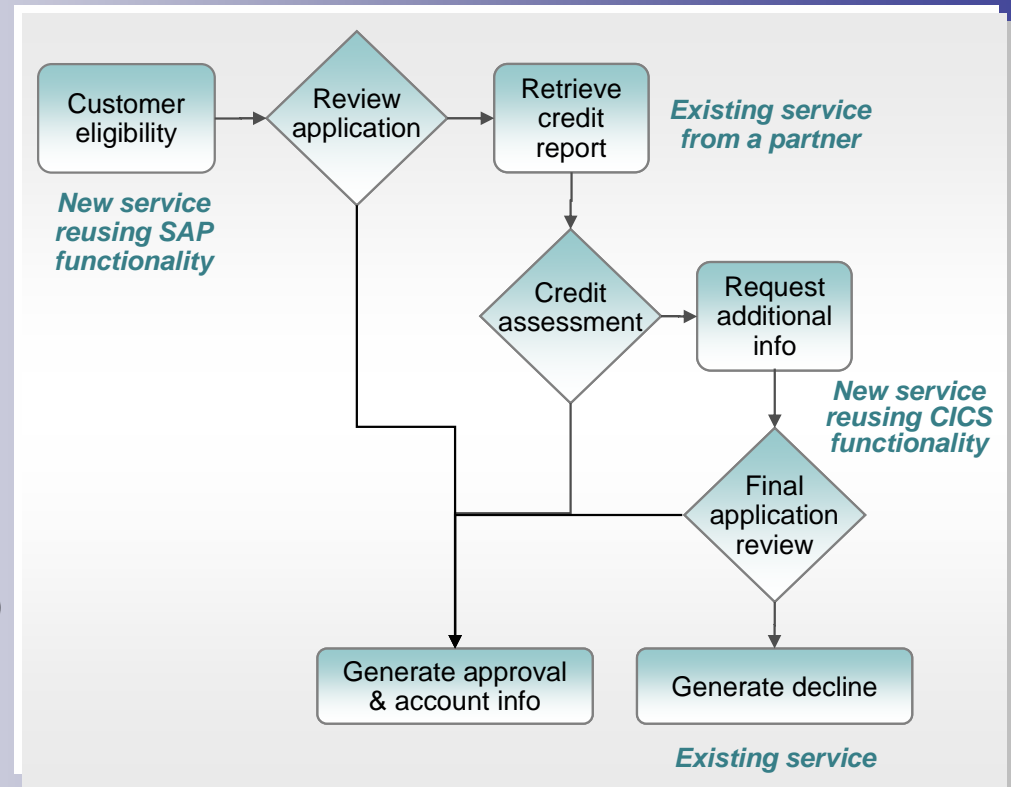
- Import and work with business process models directly from the business analyst (WebSphere Business Modeler)

## Simplifying and speeding development

- Easy to use tools where everything can be done through the GUI
- Single way to define all types of processes (human, automated, rules, etc.)

## Maximizing re-use

- Ability to leverage existing services and develop for future reuse



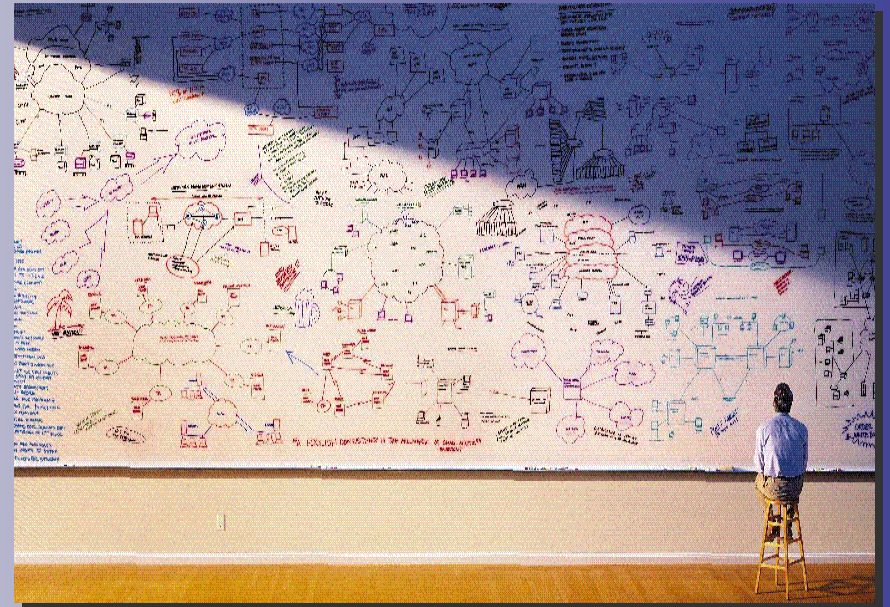
# WebSphere Process Server for automated SOA runtime

*A deployment environment for composite applications to ensure maximum flexibility at the speed of business*

## WebSphere Process Server for z/OS

- Centralize your business process and share them across the enterprise
- Extend the value of core applications and databases, with the qualities of System z.
- Add connectivity and mediation support for Web services and JMS applications anywhere
- Innovate new standards-based solutions for easy assembly/deployment of service components

enhanced



**System z for when your processes absolutely must be available**



# WebSphere Business Monitor

*Monitoring business performance across your SOA*



## Improve business visibility

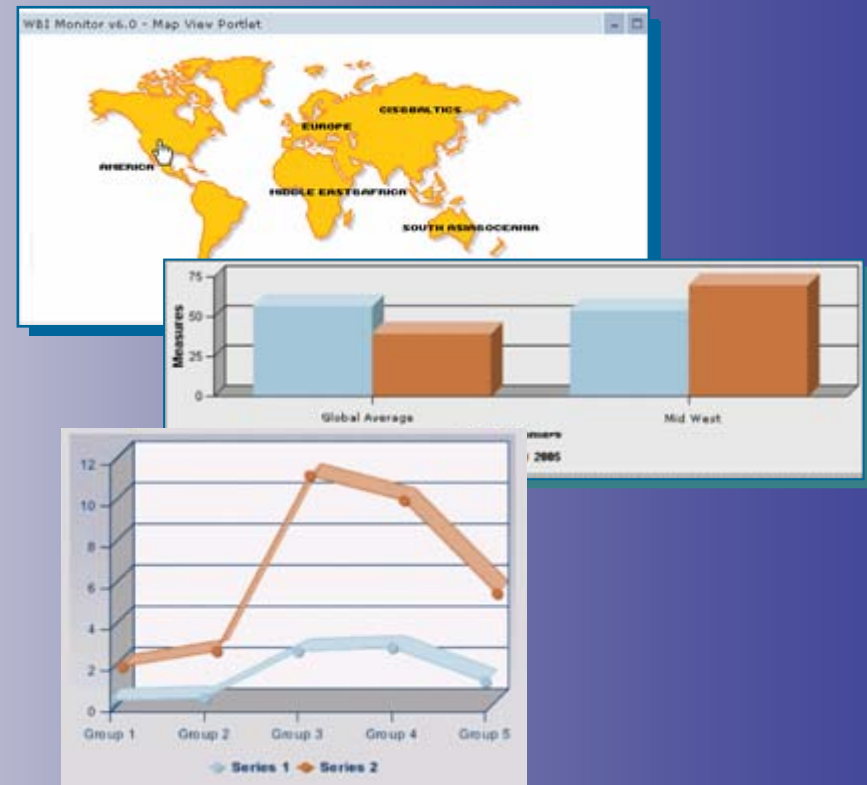
- Management dashboards and reporting capabilities, including trending information
- Tools to define or customize your dashboards
- See how your business is performing before issues arise

## Ability to intervene in deployed processes

- Action Manager – supporting real-time response and action as performance data is received

## Optimize flow of information

- Ability to export data to WebSphere Business Modeler for analysis and process improvement
- Run modeling simulations based on real data from the business monitor



***Monitor KPI's based upon key performance objectives***



# IBM Get Started with SOA on zSeries

- **SOA Assessment Workshop**
    - ▶ Identify business goals, technical requirements, leverage existing systems, identify new development opportunities
  - **SOA Architecture and Design Workshop**
    - ▶ Gain a deeper understanding of your project requirements, evaluate existing infrastructure, develop recommended architecture
  - **SOA for Project Scoping Workshop**
    - ▶ Identify enterprise applications as an SOA zSeries project, identify skills and resources, develop a comprehensive project plan
  - **Advanced SOA and Web Services Mentored Workshop**
    - ▶ On-site advanced mentoring workshop for architects and developers focused on SOA for zSeries and Web Service technologies and skills.
- SOA Center of Excellence**
- ▶ Provide assistance with improving your SOA for zSeries software development, delivery and operations



## Key Takeaways

### **IBM and our Business Partners are the leaders in SOA**

- ▶ Over 3,000 engagements and 1,300 new partners
- ▶ Over 300 customers deploying SOA on CICS Transaction Server V3.1 ... and the fastest uptake of any version of CICS TS
- ▶ WebSphere Application Server for zSeries had 21% growth in 2005.... and 25% penetration in z accounts
- ▶ zAAPs outperformed expectations by 36% in 2005
- ▶ New System z9 processor range from 26 to 18,000 MIPS

**IBM's SOA approach of "Flexible Entry" enables customers to deploy SOA with z at the rate and pace they need with real business results**





THANK  
YOU

