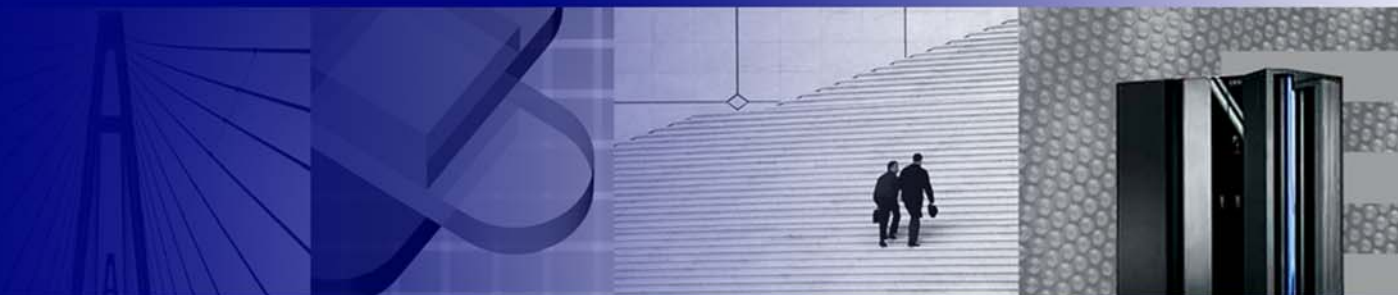




System z as the Hub for SOA – Enabling Innovation for System z



Yvonne Perkins

Vice President, Enterprise Platform Software



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

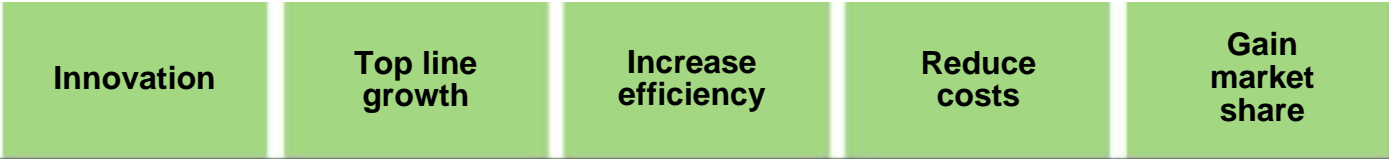


Source: IBM Global CEO Survey, March 2006

The Goal: Strategic Flexibility Through Innovation

The Challenge

Business Objectives



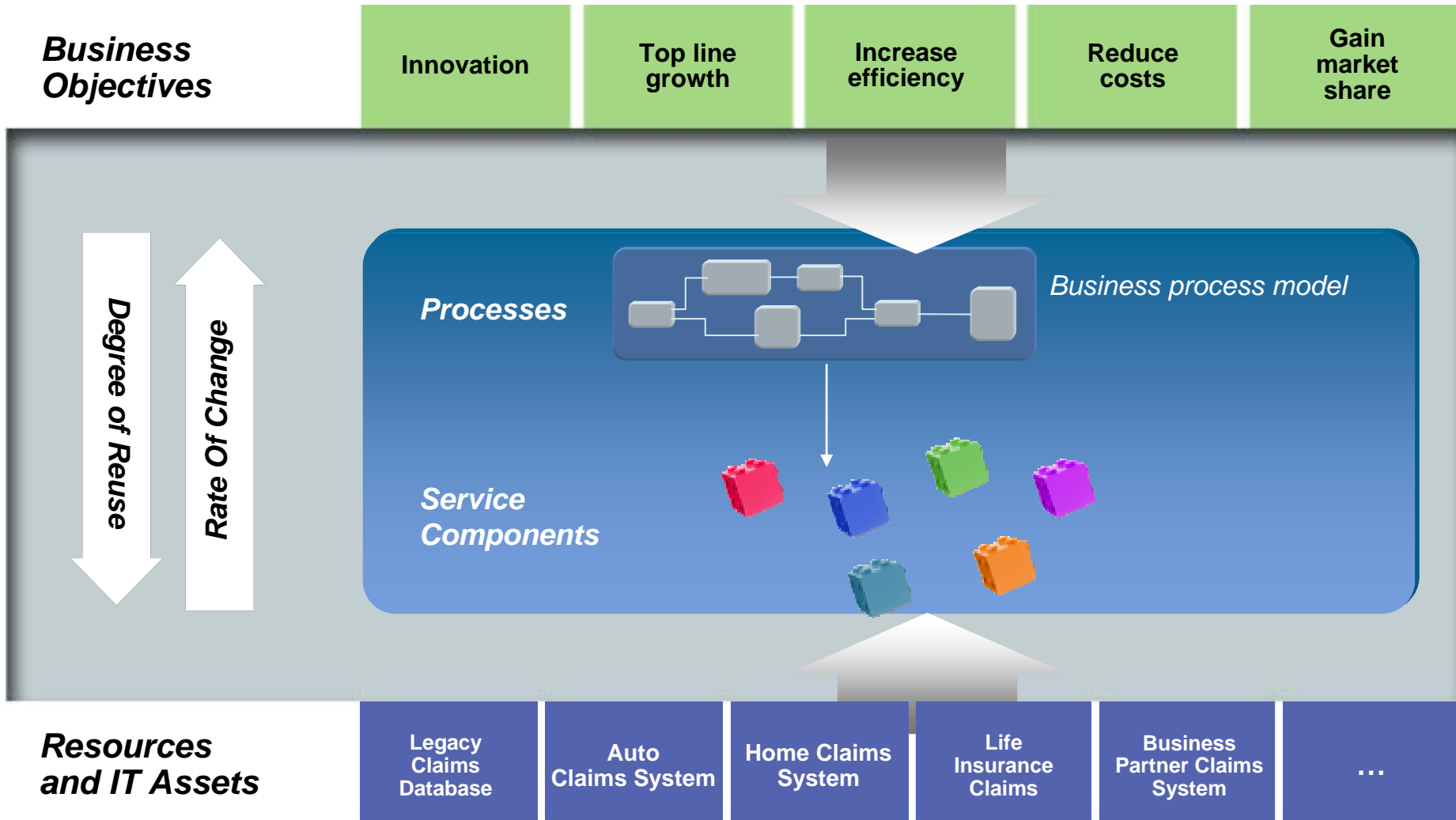
- *Complex processes & systems*
- *Complex applications & interfaces*
- *Difficult to adapt quickly*
- *Large portion of IT budget spent on maintenance, not on new value add investments*



Resources and IT Assets

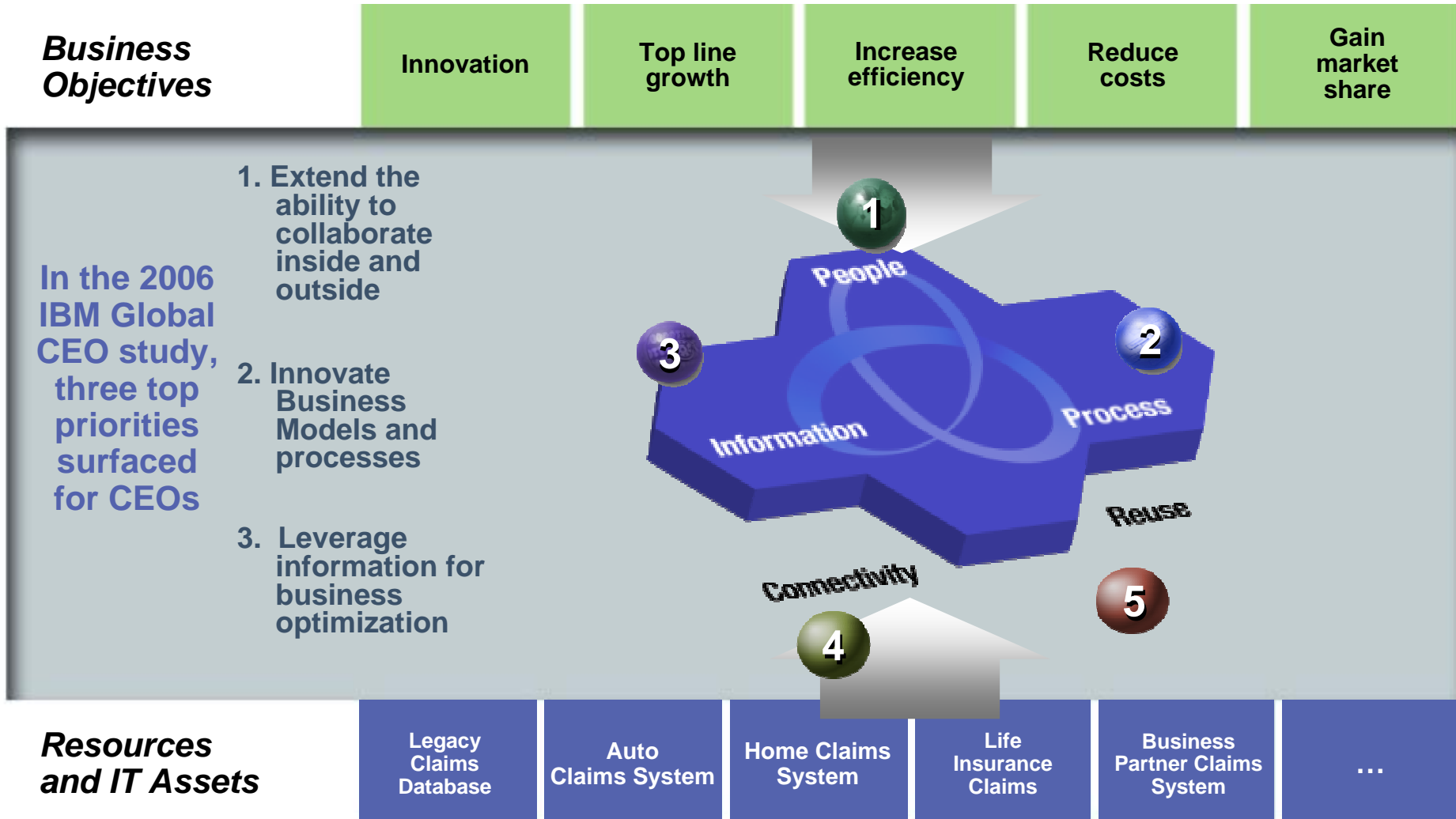


Service Oriented Architecture Addresses this Challenge



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

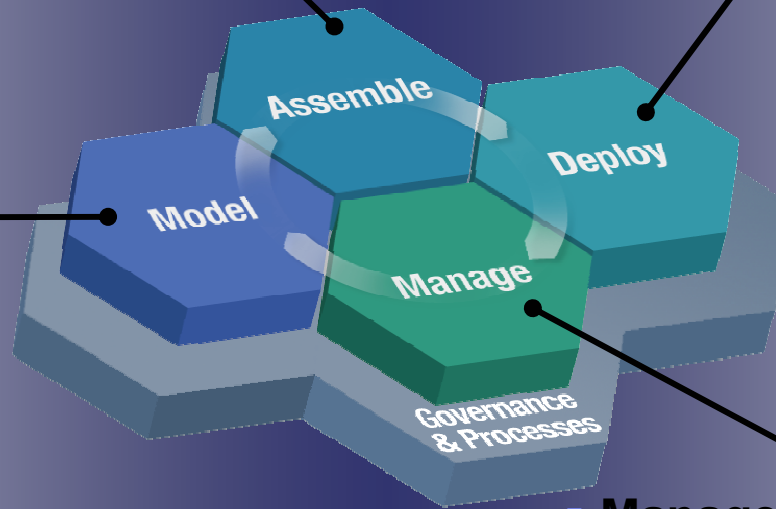
97% of customers justified their SOA project on cost
100% saw increased business flexibility
51% saw revenue growth

The SOA Lifecycle

- Discover
- Construct & Test
- Compose

- Integrate people
- Integrate processes
- Manage and integrate information

- Gather requirements
- Model & Simulate
- Design
- Define KPIs



- Manage applications & services
- Manage identity & compliance
- Monitor business metrics/KPIs



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

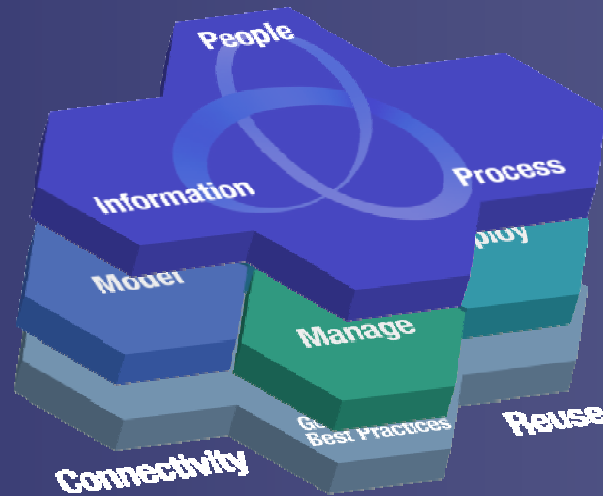
WebSphere Portal
 Front End Tooling Innovation
 SOA Dashboard Offerings

Process

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

Connectivity

WebSphere MQ
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 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

NEW!

64-Bit Support on WAS 6.1

- 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



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



SOA Entry Points Help Customers Get Started

Both Business Centric and IT Focused

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SOA Entry Point to Connectivity

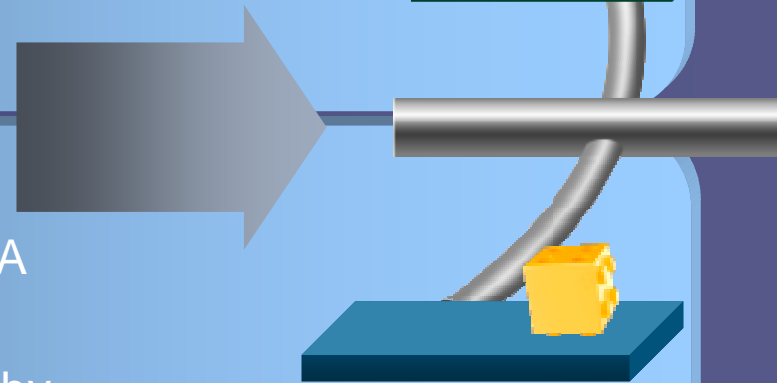
Connectivity to Support Business Centric SOA

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**

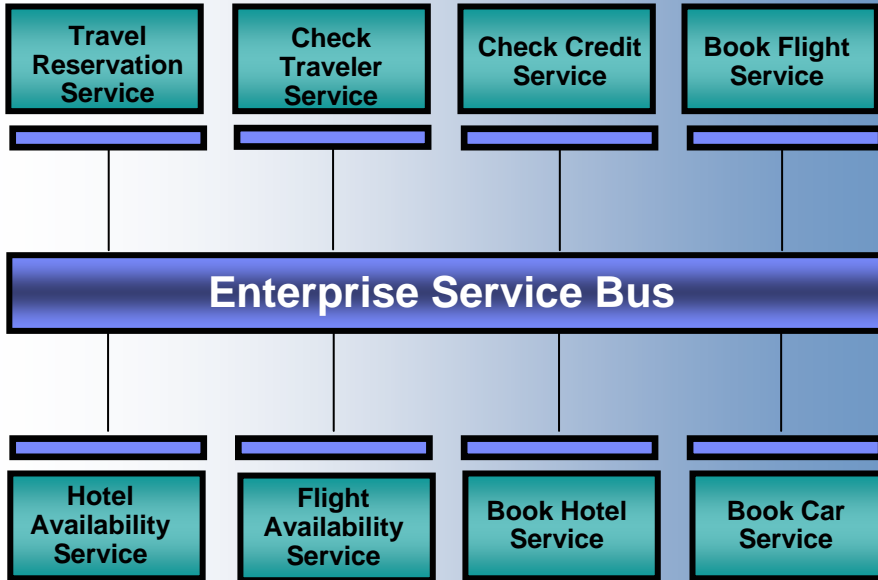


WebSphere ESB and WebSphere Message Broker

Connecting People, Process, and Information

1

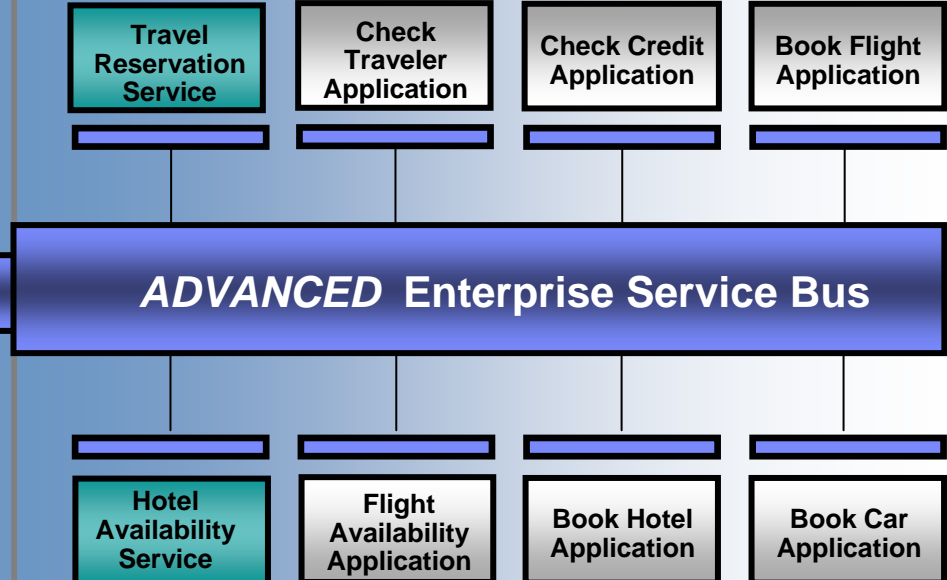
If all your applications conform to the Web Services standards...



...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.

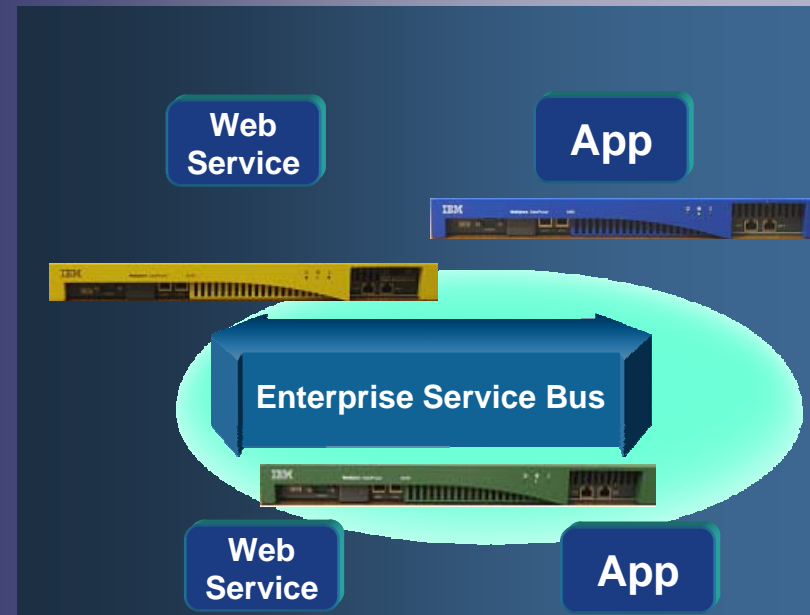
DataPower Appliances

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



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

SOA Entry Points Help Customers Get Started

Both Business Centric and IT Focused

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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.

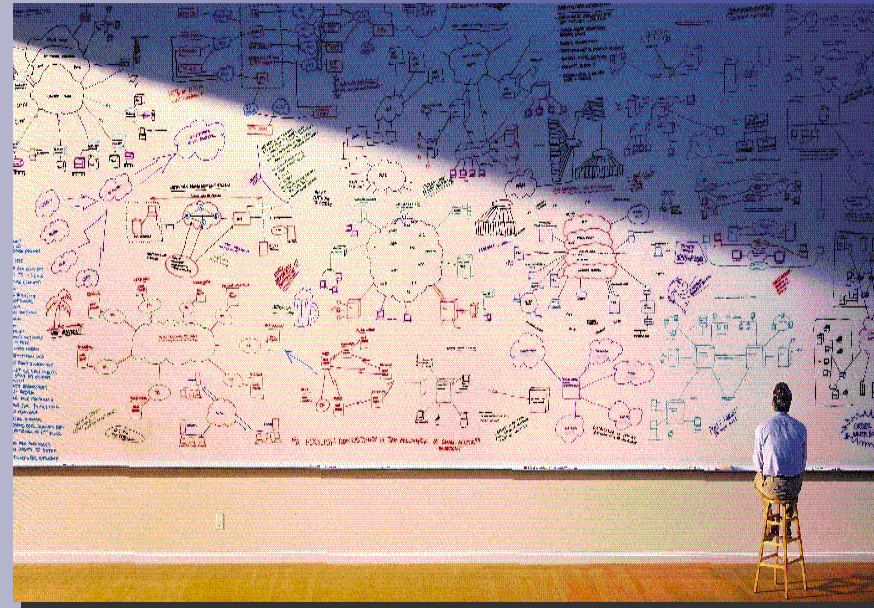
WebSphere Process Server for automated SOA runtime

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

enhanced

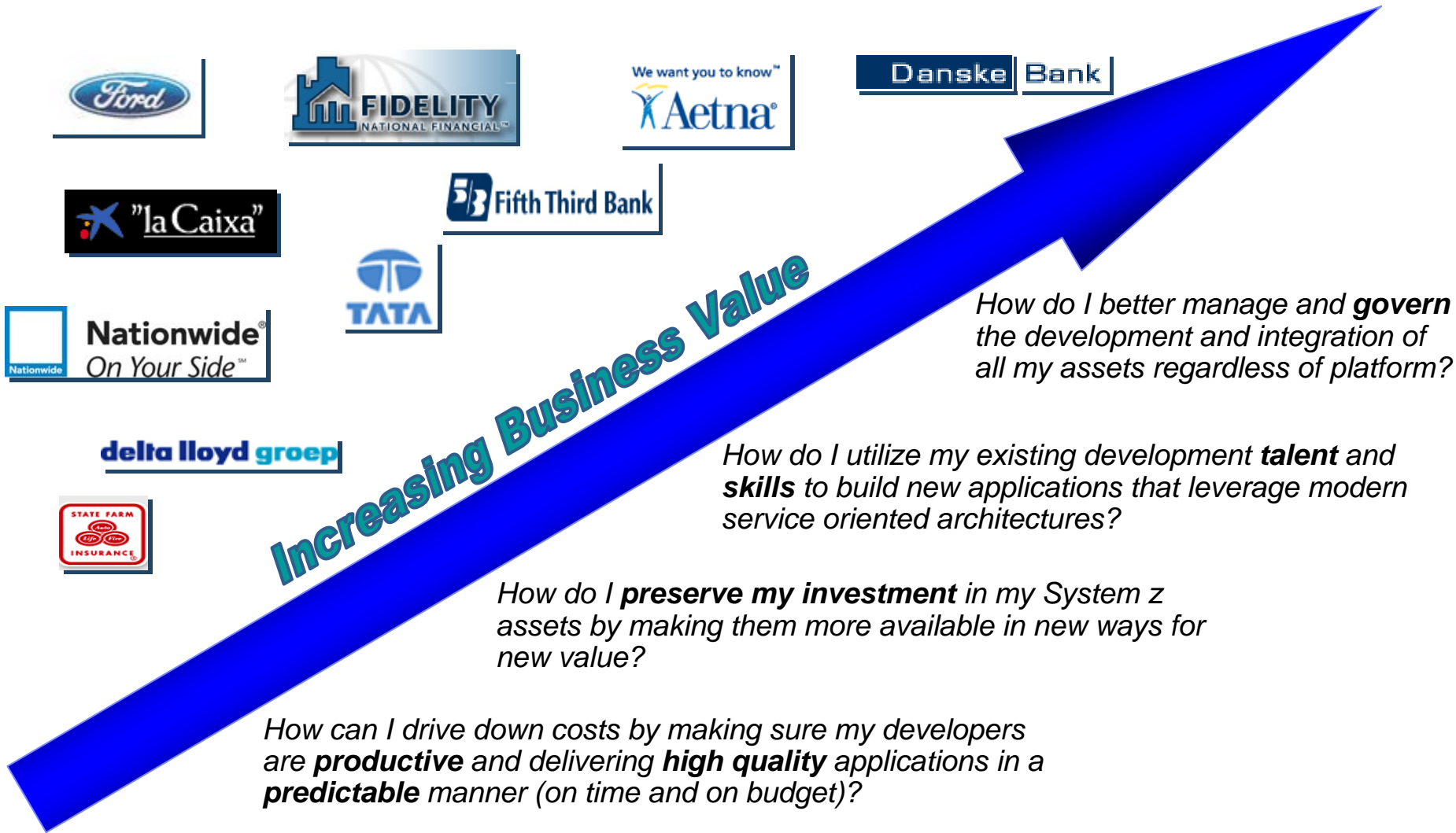
WebSphere Process Server for z/OS

- 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

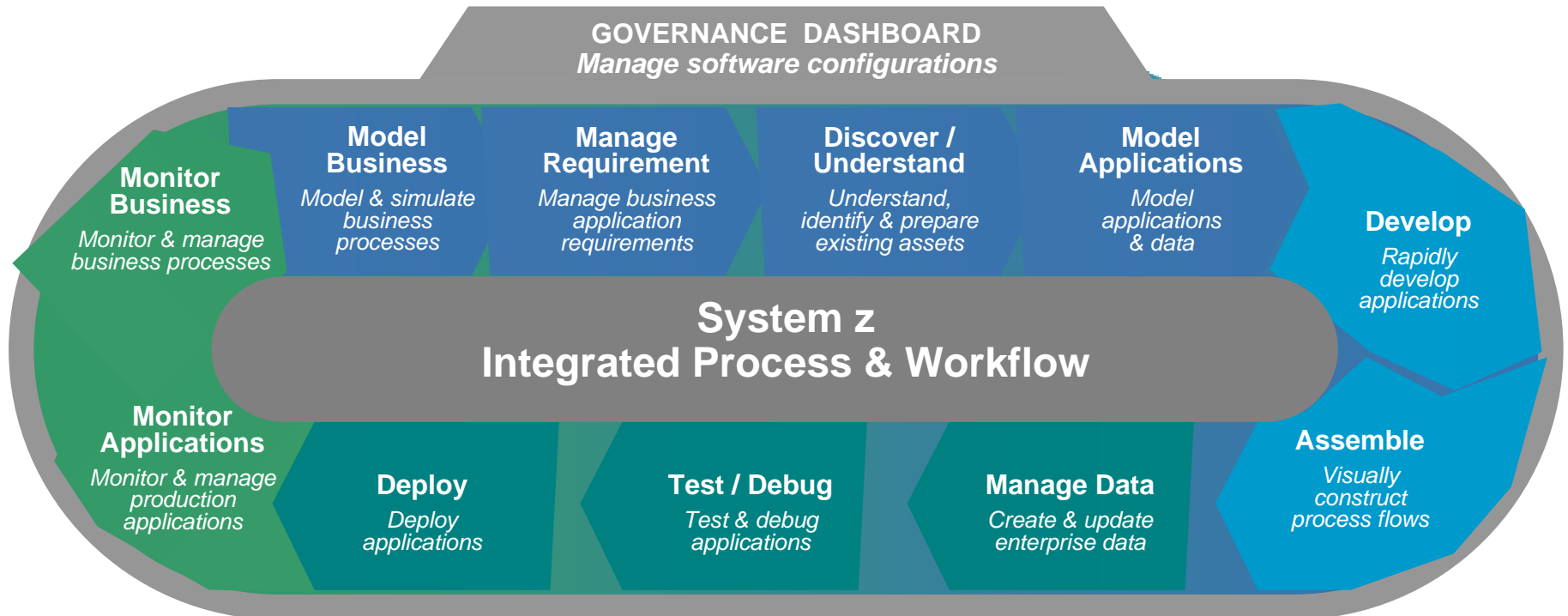
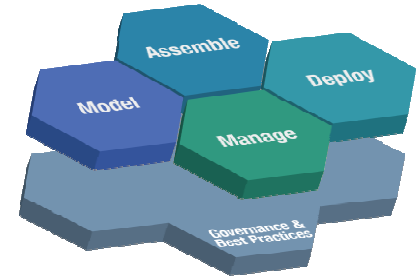


System z for when your processes absolutely must be available

What we hear ...



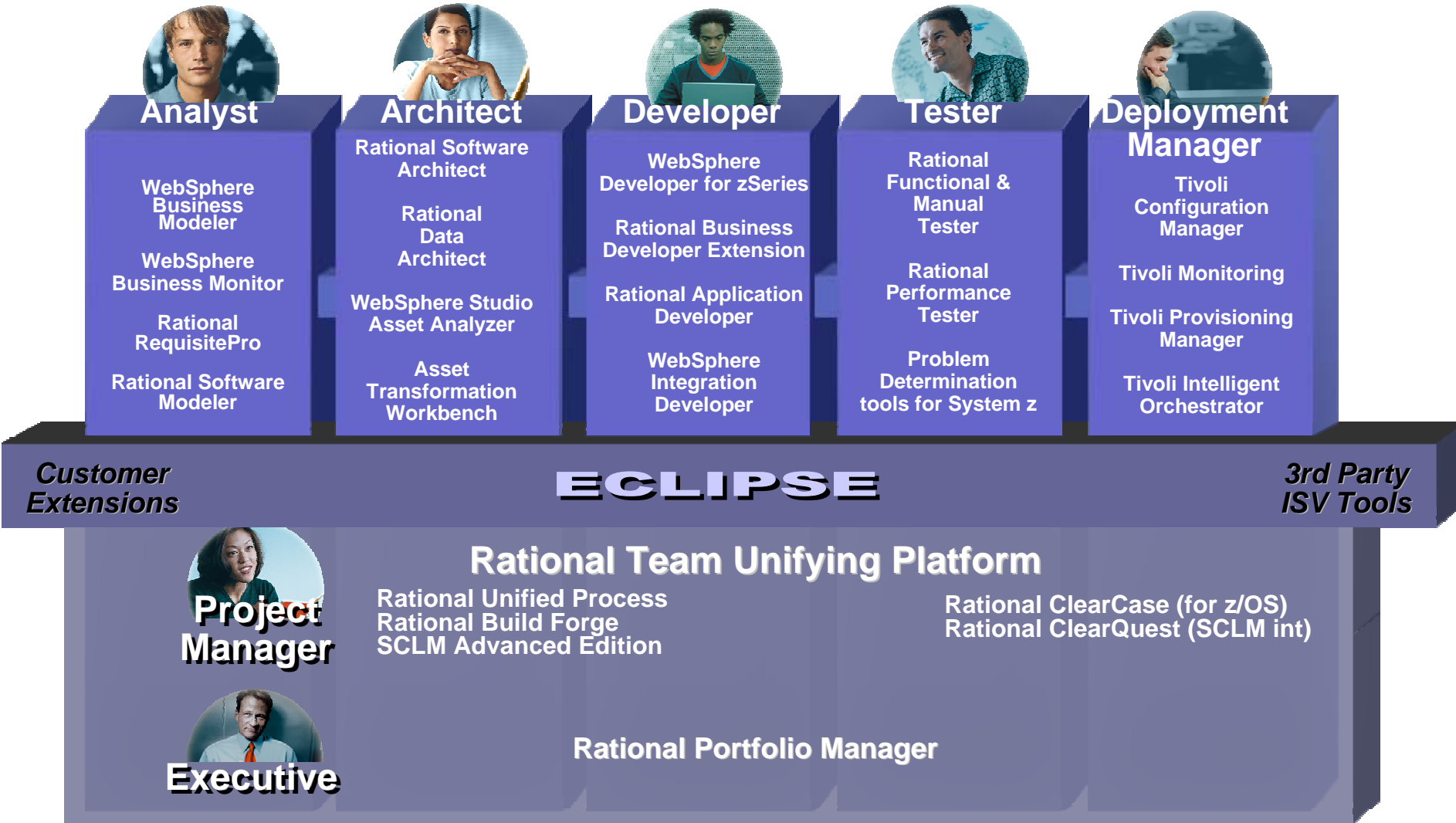
Software Development Lifecycle



ISPF was good yesterday...the SDP carries you into the future...

The IBM Software Development Platform

Integrated and role-specific tools for SOA, z and multi-platform



Manage Requirements

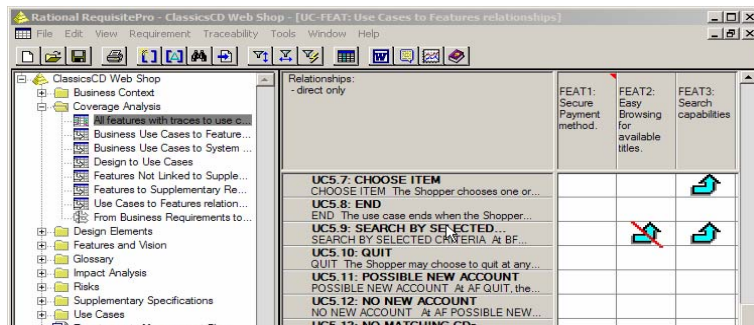
Understand what needs doing, and ensure it gets done

► Scenario:

- We need to formalize requirements management and trace requirements to designs, code, testcases, build records and deployment plans.

► What's here:

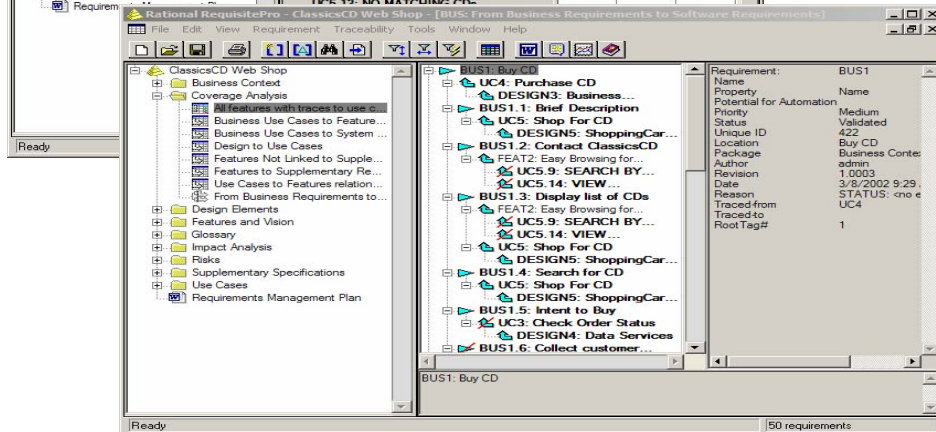
- Rational RequisitePro – handle requirements management for project teams



✓ Graphical trace matrix

► What's coming:

- Rational RequisitePro – use DB2 for z/OS



✓ Graphical trace tree

ReqPro just works, regardless of whether development is for System z, System i or distributed. Same for other parts of the SDP: RPM, WBM, RMT, etc.

Model and Simulate Business Processes

Model process changes and simulate savings before committing resources

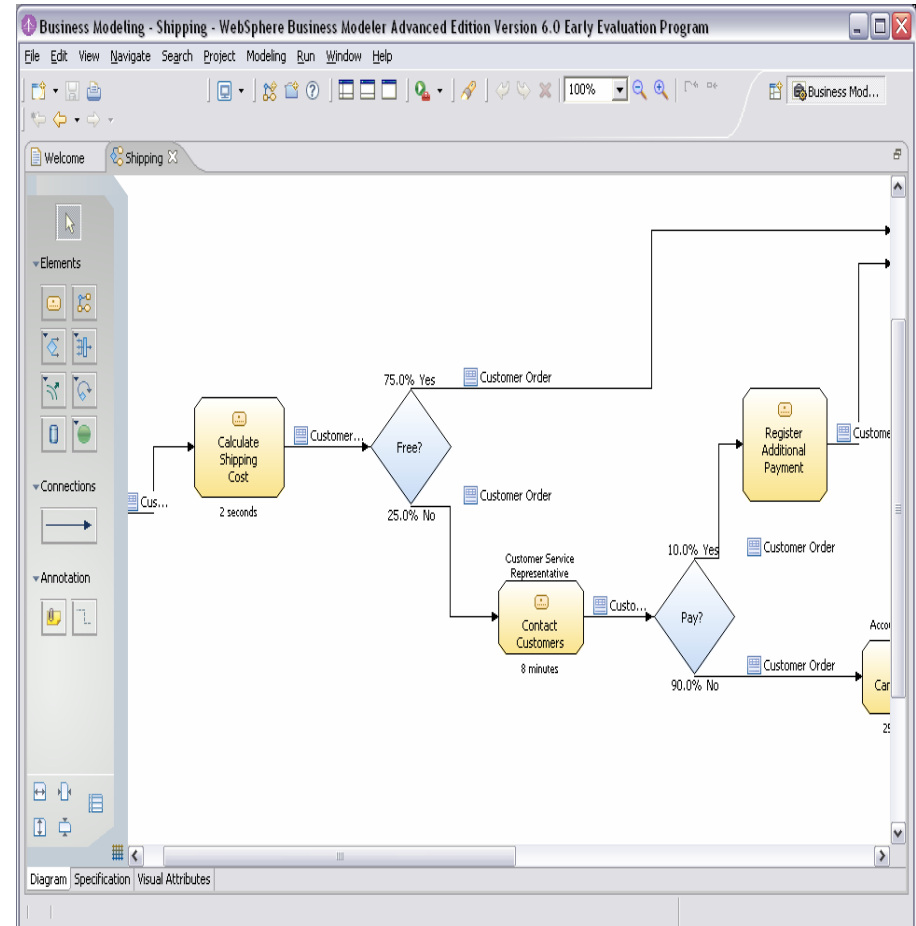
► Scenario:

- We need to visualize our critical business processes, and use modeling, simulation, and analysis to evaluate potential process enhancements prior to implementing changes.

► What's here:

- WebSphere Business Modeler - visualize, comprehend, document and improve your business process events. Implementations can be deployed to WPS on z/OS.

WebSphere Business Modeler



Assemble Composite Applications with WebSphere Integration Developer



Streamlining process design hand-off between business and IT

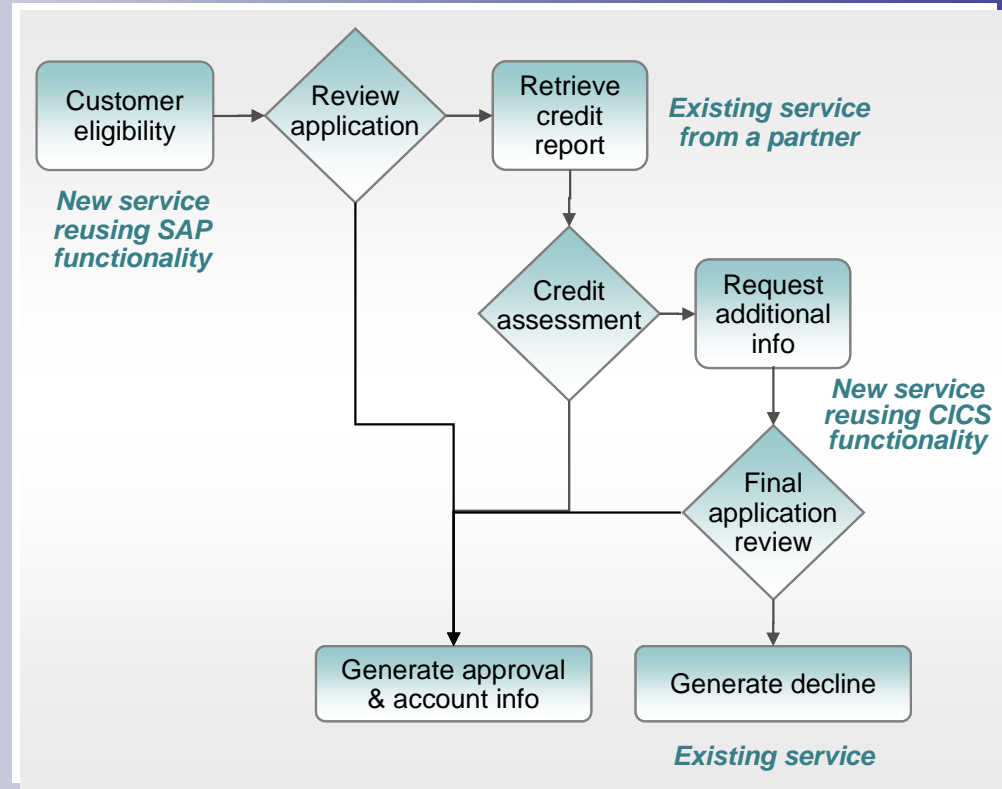
- Import and work with business process models directly from the business analyst (WebSphere Business Modeler)

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 Business Monitor

Monitoring business performance across your SOA



Improve business visibility

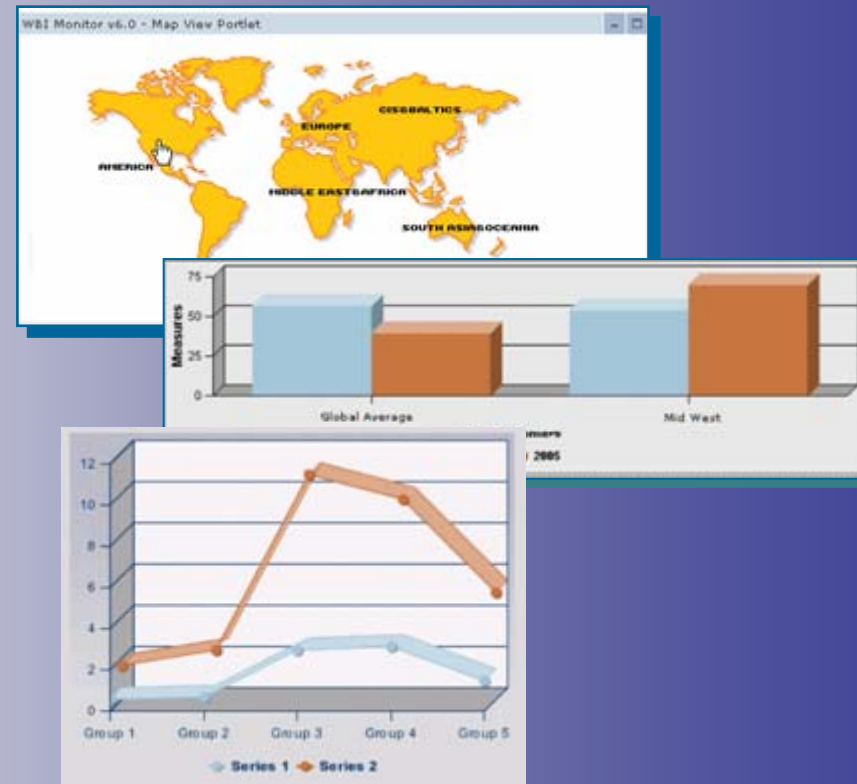
- Management dashboards and reporting capabilities, including trending information
- Tools to define or customize your dashboards
- See how your business is performing before issues arise

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

Discover, Understand & Reuse Assets

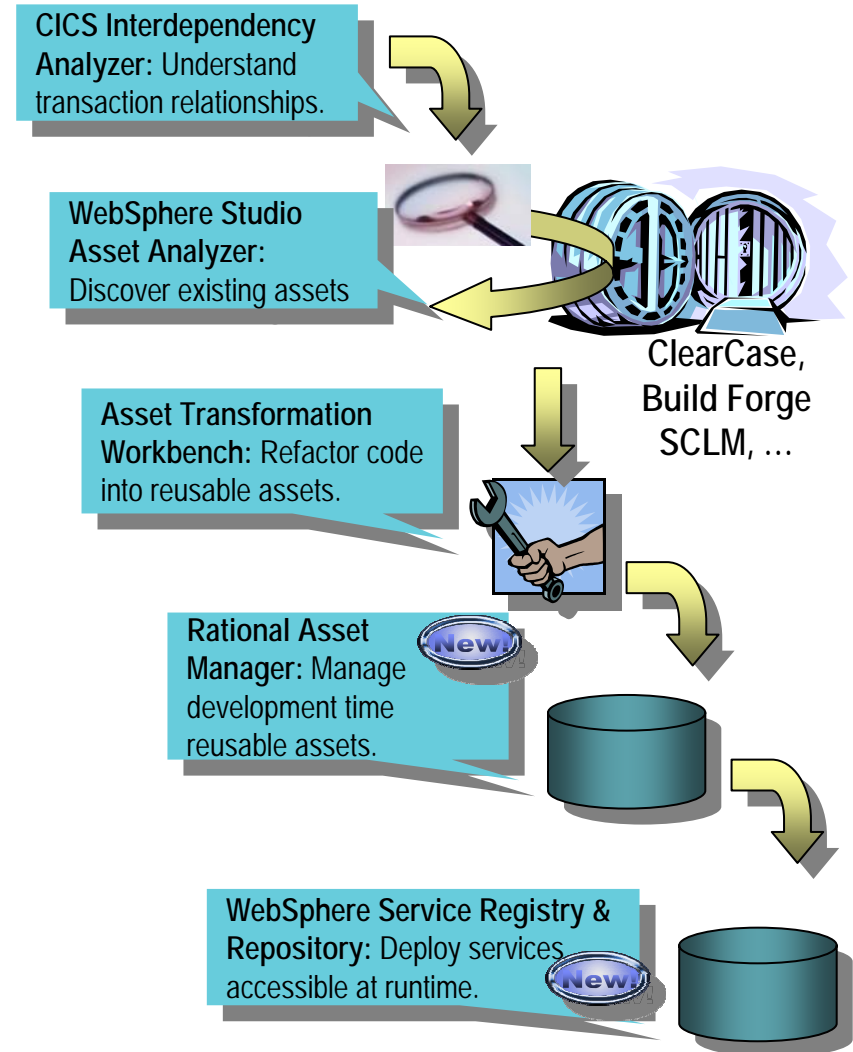
Optimize development investments

► Scenario:

- We need to understand the impact of changes to existing code, and leverage it more fully. When building new assets / services, we need to publish them for reuse.

► What's here / coming:

- CICS Interdependency Analyzer – capture interdependency information and analyze transaction affinities
 - *New in v2.1: Eclipse-based user interface to view runtime relationships*
- WebSphere Studio Asset Analyzer – perform impact analysis across the enterprise
- Asset Transformation Workbench – perform pattern identification, extract business rules, assess suitability for reuse in SOA
 - *New in V2.1: Reuse analyzer to identify potential services in COBOL code*
- Rational Asset Manager – manage reusable assets during development
- WebSphere Service Registry & Repository – store, access, and manage info. about services





WebSphere Developer for zSeries

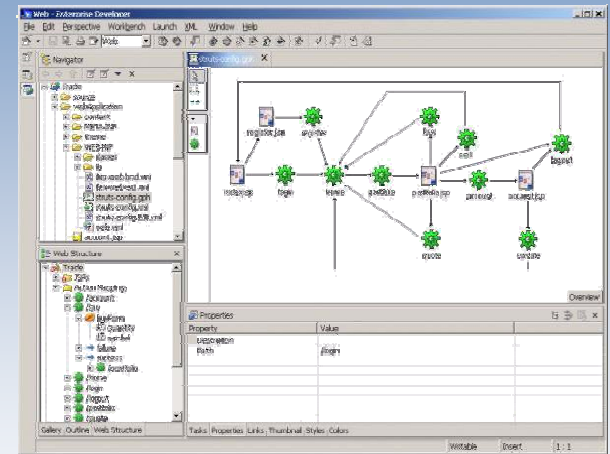
Assemble Services Across Platforms

Create composite applications with Core Assets

- Bridges mainframe and client-server development
 - ▶ For end-to-end integrated processes running across platforms
 - ▶ Shared developer repositories and tooling framework

- For deployment to WebSphere, CICS, IMS, DB2 and batch
 - ▶ Cross platform development
 - ▶ Workstation based development tool
 - ▶ Workstation based mainframe application analysis tool

- Develop SOA systems that combine Web services, web applications and traditional applications
 - ▶ Cobol, PL/1, EGL (4GL)
 - ▶ Java, J2EE, WSDL, Java Beans, XML adapters
 - ▶ Portlets and complex user interfaces
 - ▶ Service flow modeler for CICS and HATS



WebSphere Developer for zSeries became generally available in June 2005.

Manage Source Code, Config Mgmt across the Enterprise

Integrate configuration management, problem tracking for all platforms

► **Scenario:**

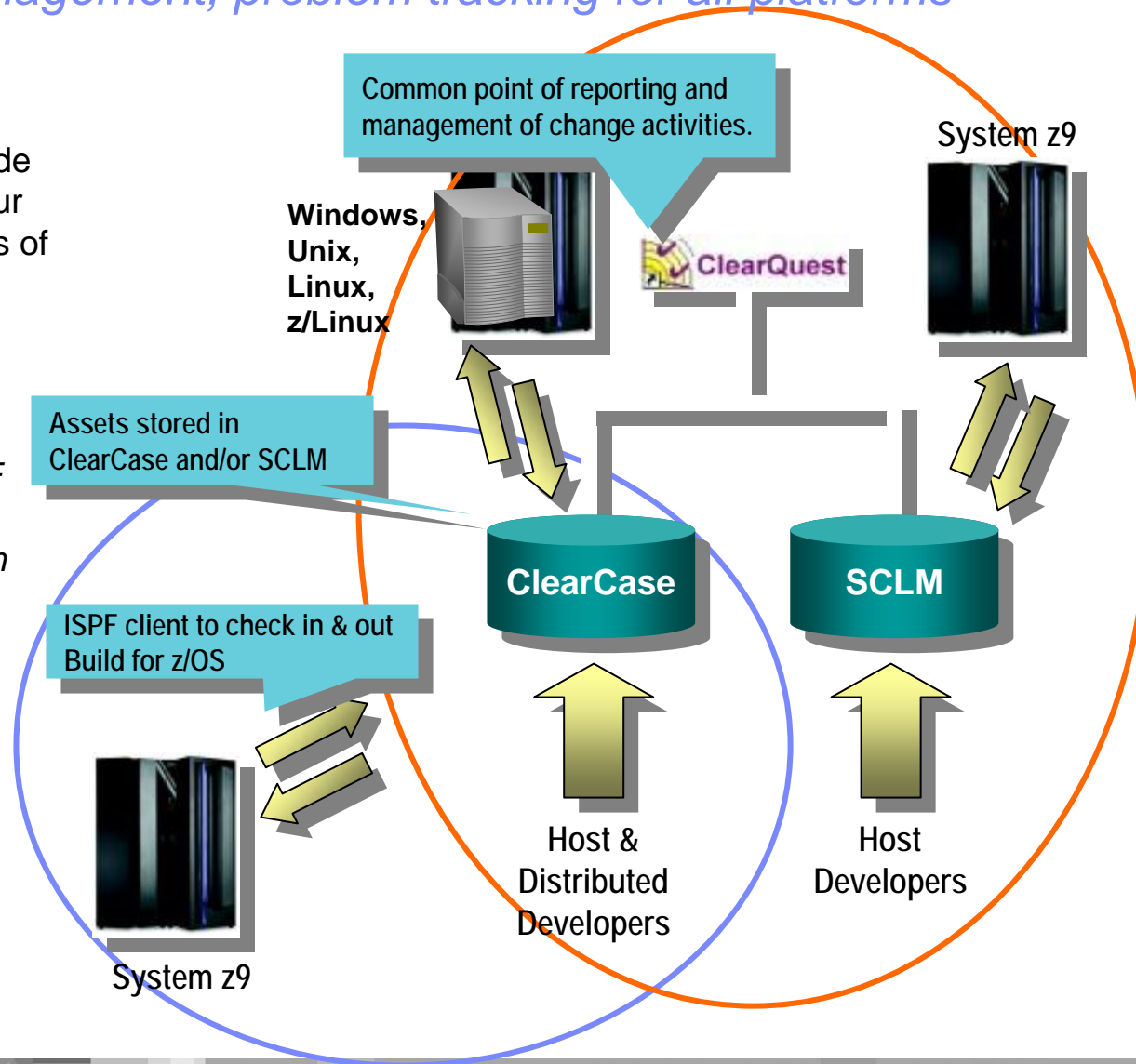
- We need a consistent source code management solution for all of our business applications, regardless of platform

► **What's here:**

- ClearCase - build for z/OS, ISPF client, run on z/Linux
- ClearQuest & SCLM - integration
- Source Code Library Manager (SCLM) - Eclipse client

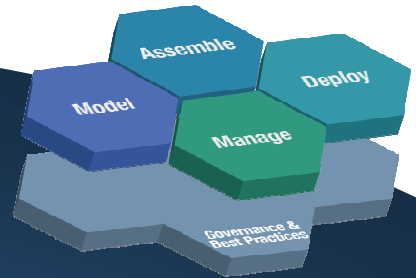
► **What's coming:**

- ClearQuest – use DB2 for z/OS
- ClearCase – run on z/OS



Share a Process across your Enterprise

Leverage platform uniqueness across a common process

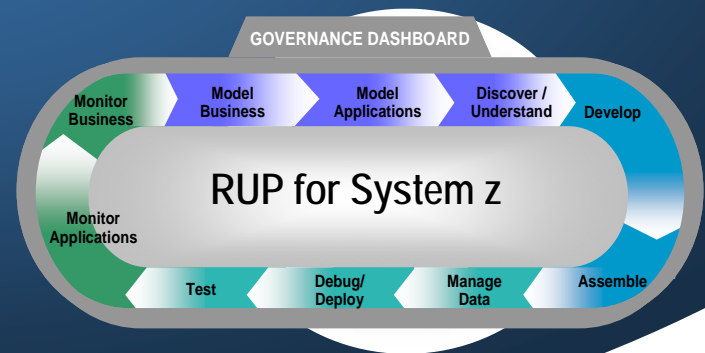
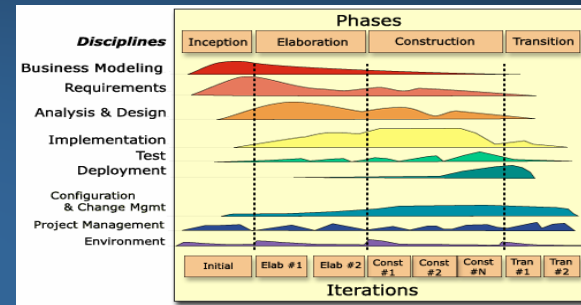


Scenario:

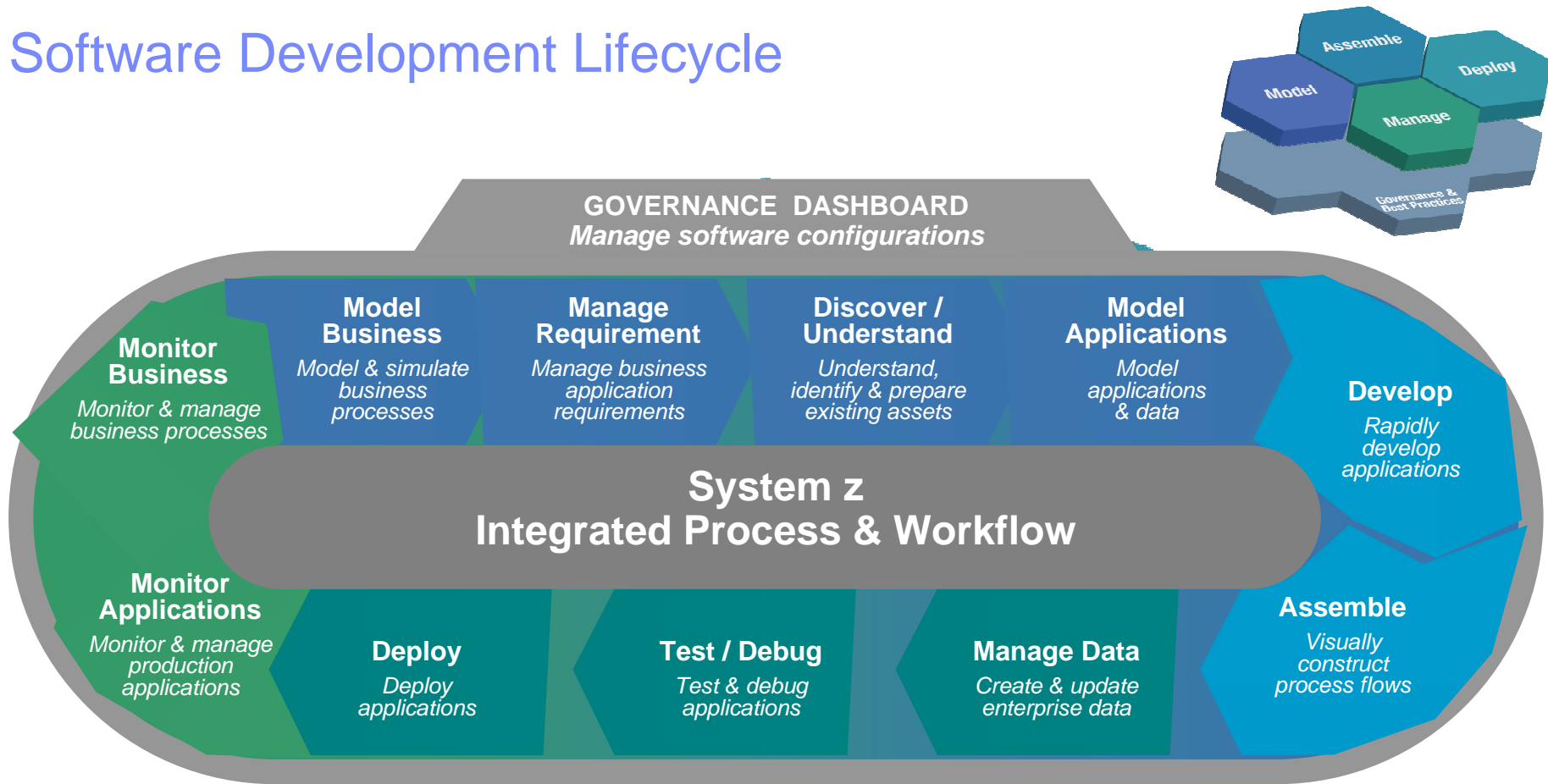
- We need a common development process across my enterprise that considers platform uniqueness

What's coming:

- A specialization of RUP for SOA targeting development for System z
- Best practices for discovery, reuse and service creation from existing COBOL and PL/I code
- Integrates with
 - Rational Portfolio Manager for project execution and management
 - Eclipse-based development environments for non-intrusive practitioner guidance



Software Development Lifecycle



▶ The IBM SDP provides

- Coverage of the complete software development lifecycle
- Products that support System z, System i, and distributed platforms via platform-specific and platform-agnostic support

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