# *Exploring a Shorter Path to Cost Savings – Leveraging Existing Assets for On Demand Applications*

James Rhyne, Director & Distinguished Engineer
Application and Integration Middleware Software

What We Have Accomplished

September 2005	Announced the new SOA LifeCycle Developed SOA Reference Architecture A series of products and services announcement
February 2006	SOA & Telecom announcement
March 2006	PartnerWorld announcement SOA Governance announcement
April 2006	Entry Points to SOA accelerated through SOA centric products, offerings, and services
May 2006	SOA and the System z Platform
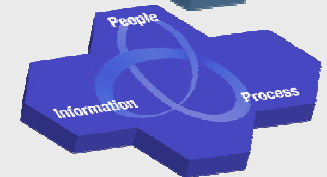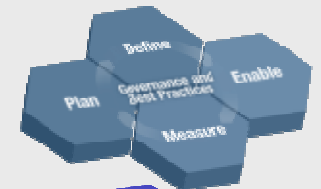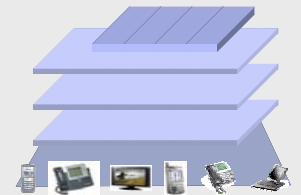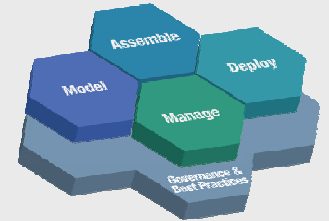
Key Takeaways

SOA is one of IBM's long term strategies to enable innovation

Customers are adopting SOA on System z

- *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 view of SOA is business centric

- People, process and information entry points
- Reuse and connectivity are critical

Entry points are accelerated by SOA Foundation products including…

- 4 enhanced System z products
- 3 new System z products
- 2 new adapters

The SOA Lifecycle

- **Discover**
- **Construct & Test**
- **Compose**

- **Integrate people**
- **Integrate processes**
- **Manage and integrate information**

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

Assemble

Deploy

Model

Manage

Governance & Processes

- **Manage applications & services**
- **Manage identity & compliance**
- **Monitor business metrics/KPIs**
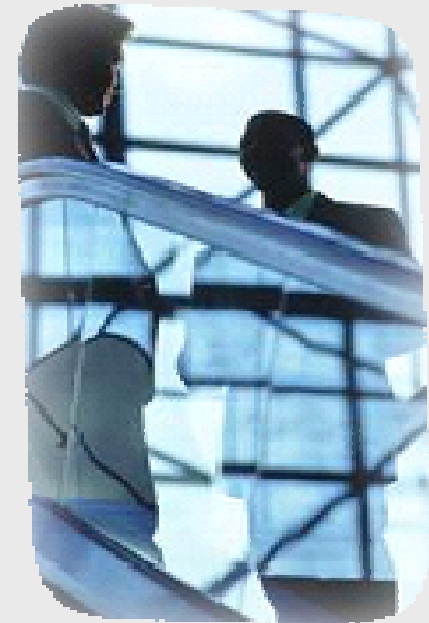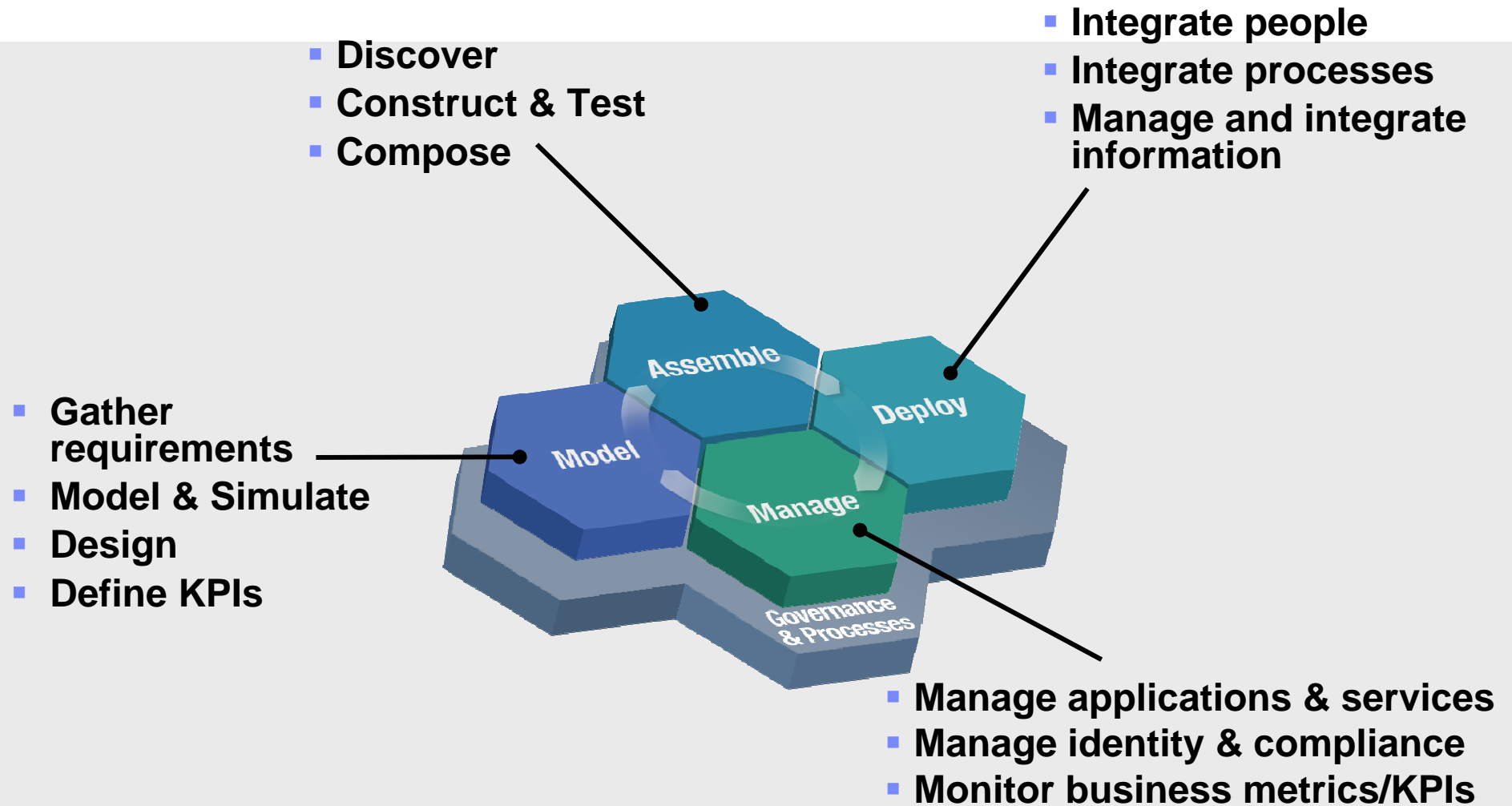
IBM's View of SOA: Business Centric
Built on SOA Lifecycle

- **Enable *human and process interaction* with consistent levels of service**

- **Deliver trusted information to provide *business insight* to enable innovation**

- **Achieve greater efficiency and effectiveness with *business model innovation***

(Diagram labels: People, Information, Process, Model, Manage, Deploy, Best Practices)
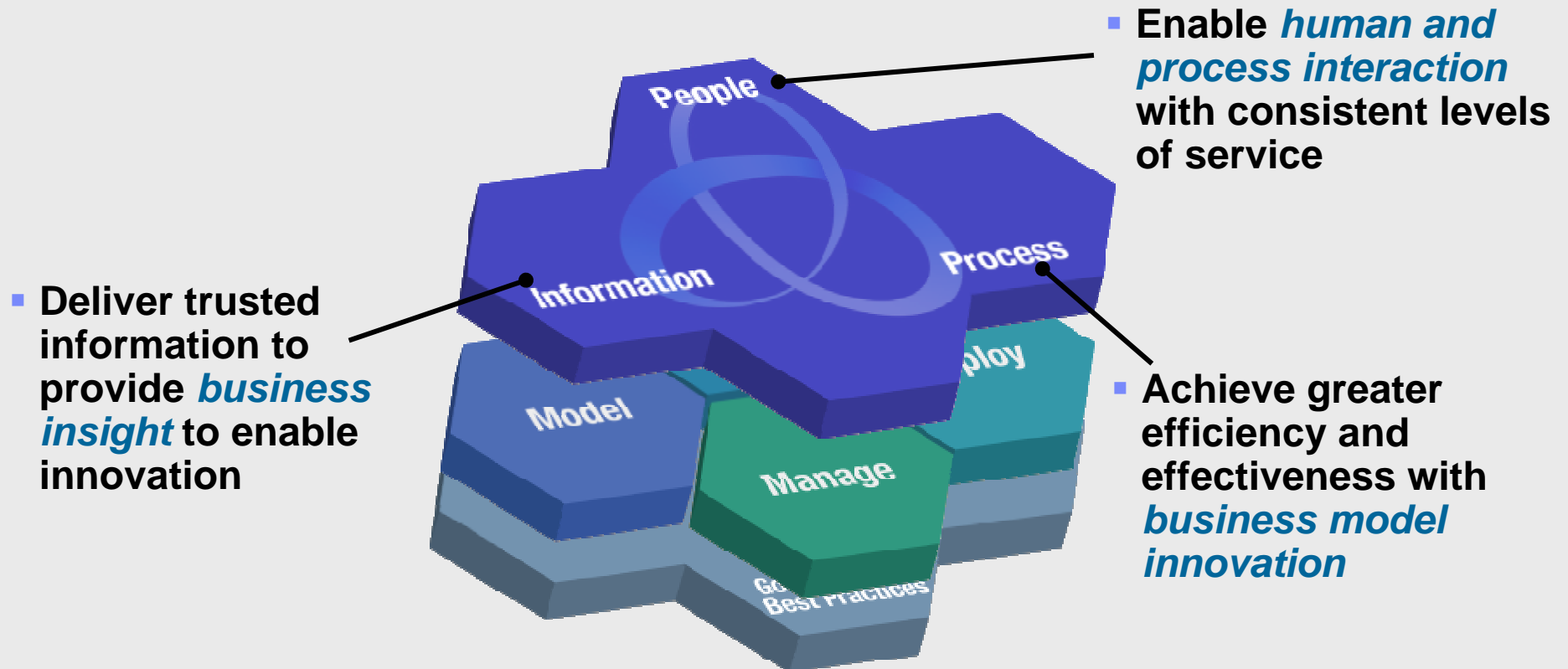
Recent studies of over 1900 customers showed SOA starting points of people, process, information or a combination of all three
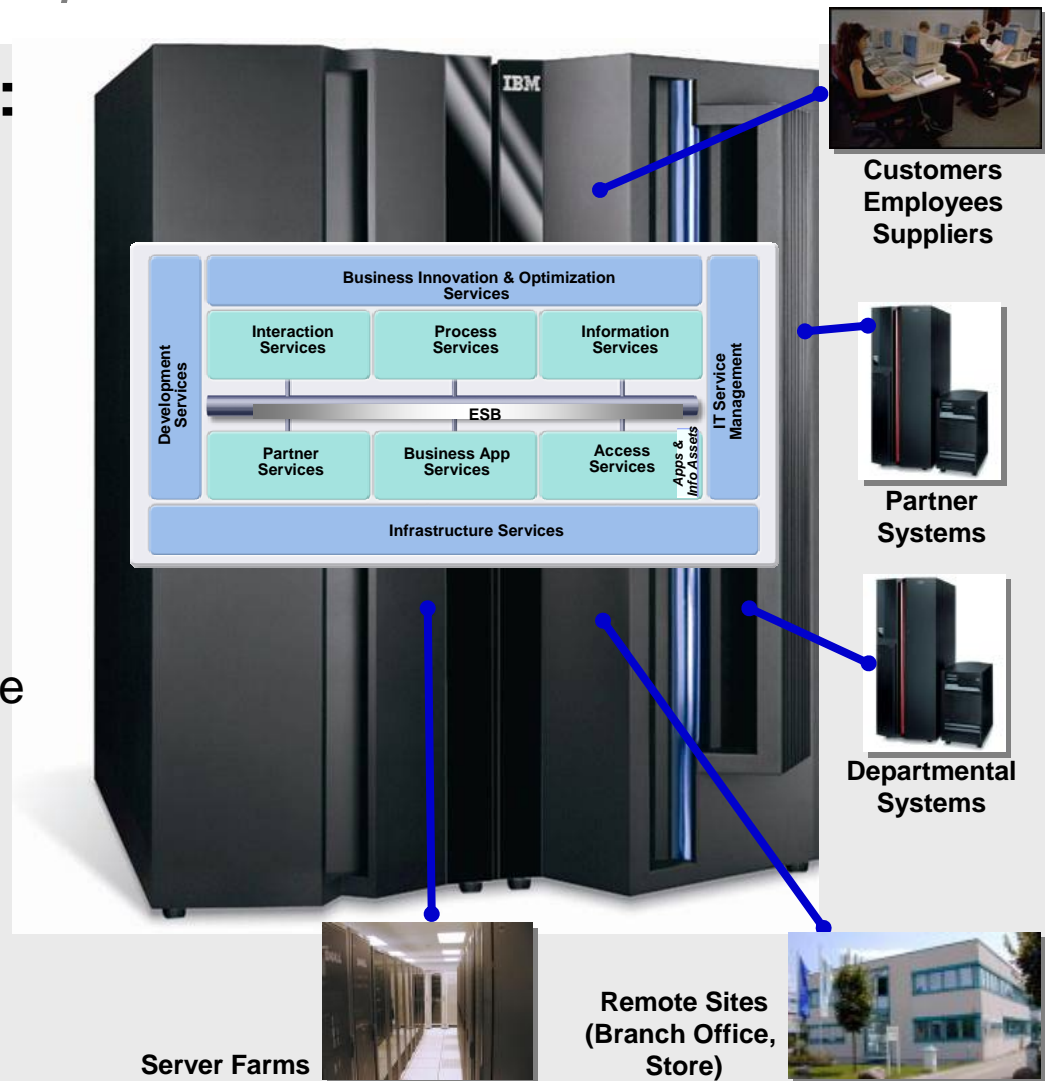
Platform for Business Centric SOA – System z
Delivers all the essential SOA qualities

Architecturally compatible:

- SOA Reference Architecture
- Architectural services
- Communications and integration
- Process control
- Reuse of core assets
- Industry standards compliant

Operationally superior:

- **Security** end-to-end in the enterprise
- **24/7 availability**
- Massive **scalability**
- **Automated recoverability**
- **Centralized** operations

Customers Employees Suppliers

Partner Systems

Departmental Systems

Development Services

Business Innovation & Optimization Services

Interaction Services	Process Services	Information Services

ESB

Partner Services	Business App Services	Access Services

Apps & Info Assets

IT Service Management

Infrastructure Services

Server Farms

Remote Sites (Branch Office, Store)

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

Service Deployment and Reuse

WebSphere Application Server V6.1

CICS Transaction Server V3.1

IMS V9

z/Transaction Processing Facility

WebSphere Service Registry/Repository
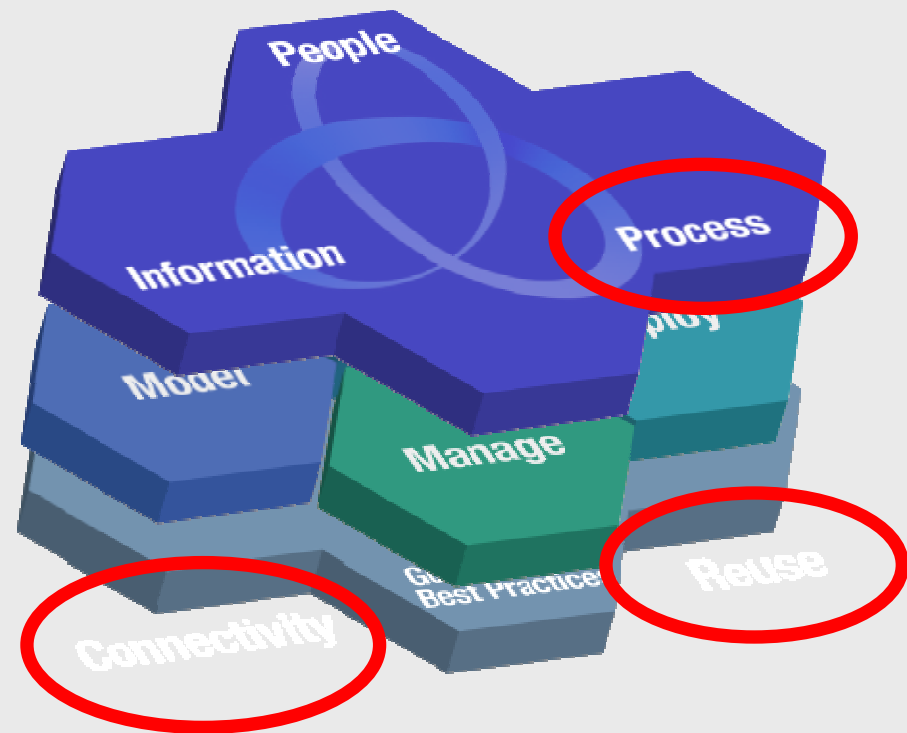
WebSphere Developer for z/OS

SOA Entry Points in Process, Connectivity and Reuse
IBM's strategic SOA investments in System z

System z as a platform for:

- *Business services*

- *Business connectivity*

- *Process Management*

# 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
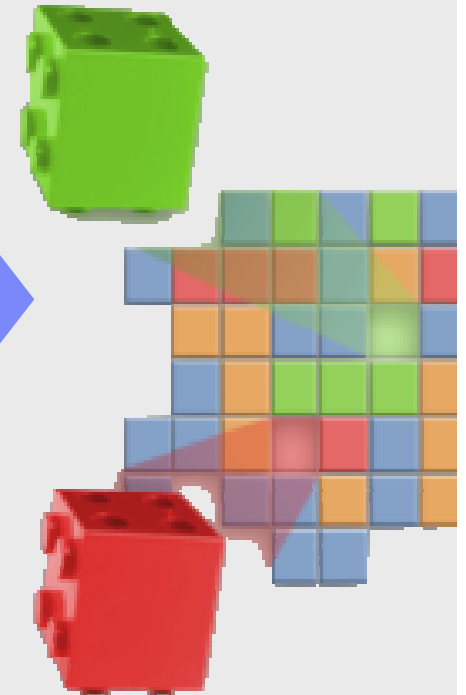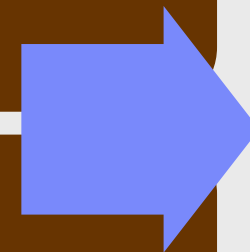
A bright and rising future for CICS Transaction Server
Rock-solid deployment platform, 100% aligned with SOA technologies

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 integration with WebSphere Service Registry/Repository

    ▸ Support for Event Driven Applications

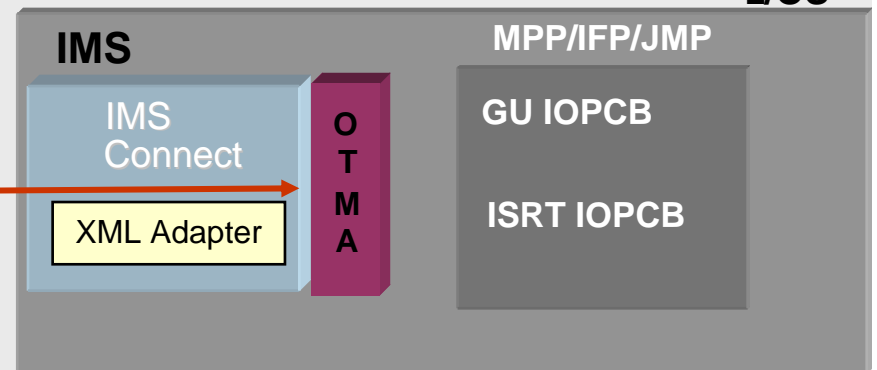# IMS Application Integration with IMS SOAP support

IMS V9 *enhanced*

- Enables Reuse of IMS Applications as Web Services
  - ▸ Support WebService specifications
  - ▸ Leverages open standards and utilizes flexible tooling support

- Provides IMS Transaction Interoperation with Client Applications
  - ▸ Independent of location, programming language, and platform
  - ▸ SOAP Clients can be Microsoft .Net, SAP, Java, etc.

z/OS

IMS

IMS Connect

XML Adapter

O T M A

MPP/IFP/JMP

GU IOPCB

ISRT IOPCB
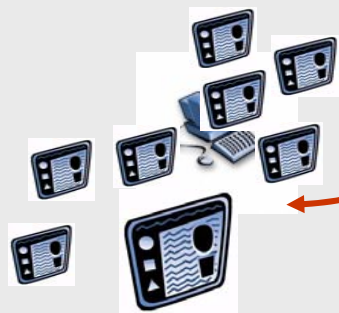
request via SOAP

IMS SOAP Gateway

IMS Soap Gateway
GA December, 2005
Download at **ibm.com/ims**

XML Adapter
Beta in progress
GA July, 2006

Drive your business: WebSphere Application Server

Add resiliency to critical business applications deployed to z/OS, while using open standards to prepare for the future

WebSphere Application Server V6.1

enhanced

- Common code base for application portability and consolidation to System z

- Ease-of-use features help accelerate time to value

- Have confidence applications are secure and available

- z/OS platform integration provides advanced availability, scalability, workload management, and security

WebSphere Extended Deployment V6.0

- Reuse core business logic with new business patterns

- Automate system responses to application health and business demands
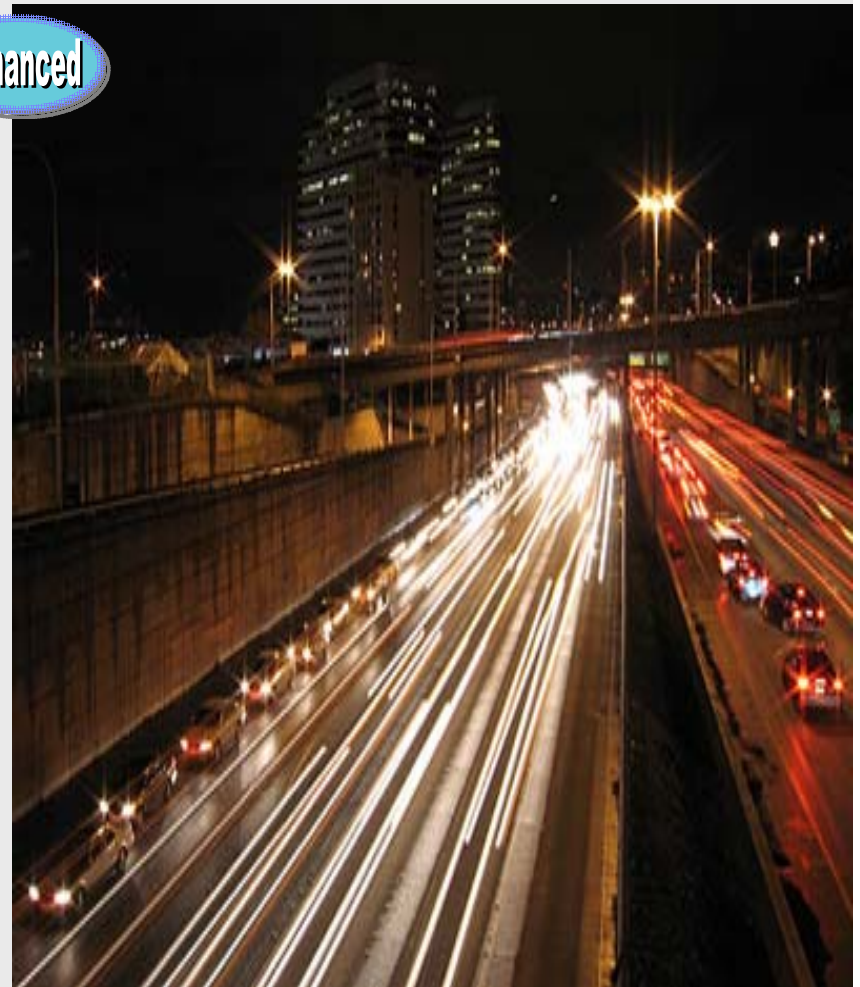
Bank of Montreal Exploits its Re-usable Assets
Integration with the mainframe is essential for BMO's SOA

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

BMO Financial Group

Identify Assets
WebSphere Service Registry and Repository

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

NEW!

- **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
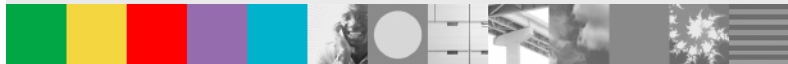
System z Application Lifecycle
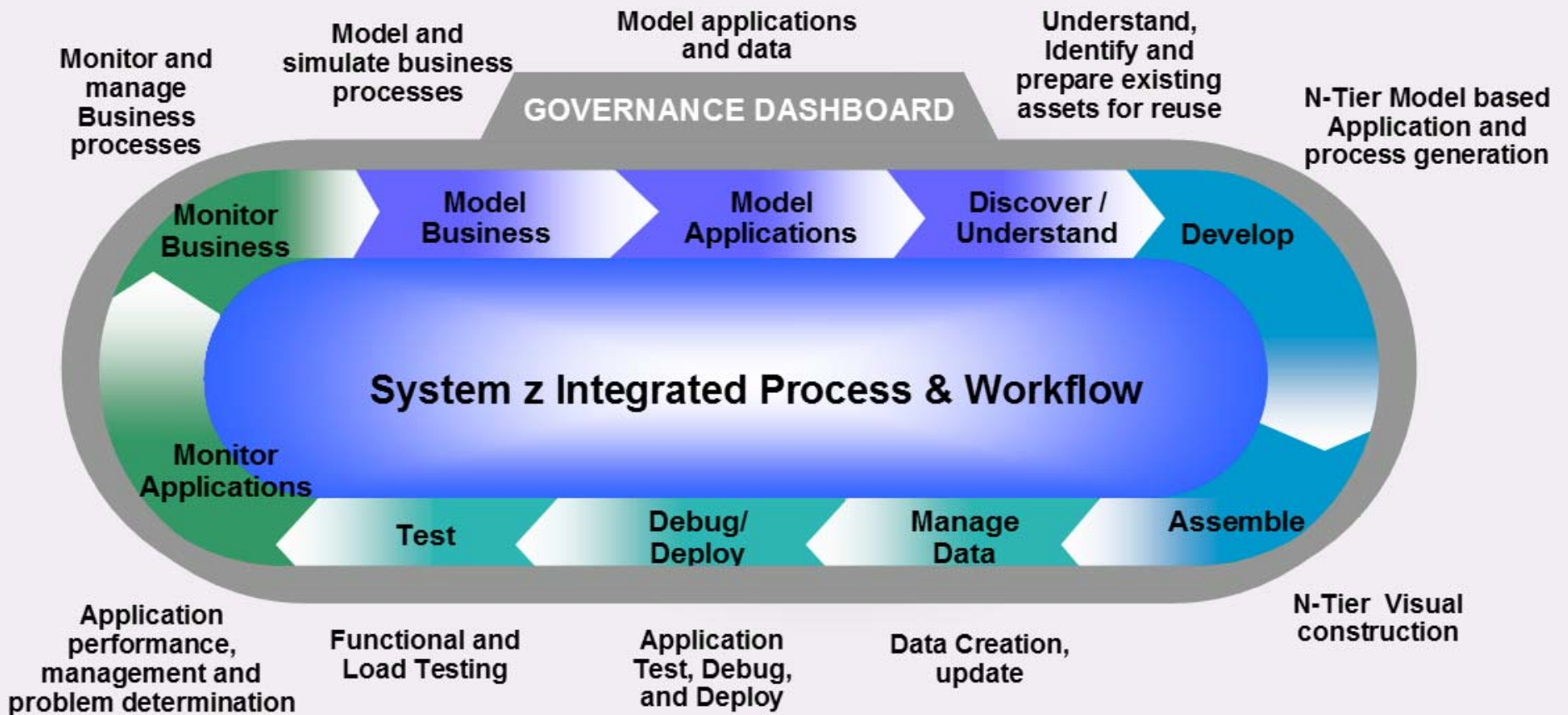## The scope of IBM tools for deploying SOA

Monitor and manage Business processes

Model and simulate business processes

Model applications and data

Understand, Identify and prepare existing assets for reuse

N-Tier Model based Application and process generation

GOVERNANCE DASHBOARD

Monitor Business

Model Business

Model Applications

Discover / Understand

Develop

System z Integrated Process & Workflow

Monitor Applications

Test

Debug/ Deploy

Manage Data

Assemble

Application performance, management and problem determination

Functional and Load Testing

Application Test, Debug, and Deploy

Data Creation, update

N-Tier Visual construction
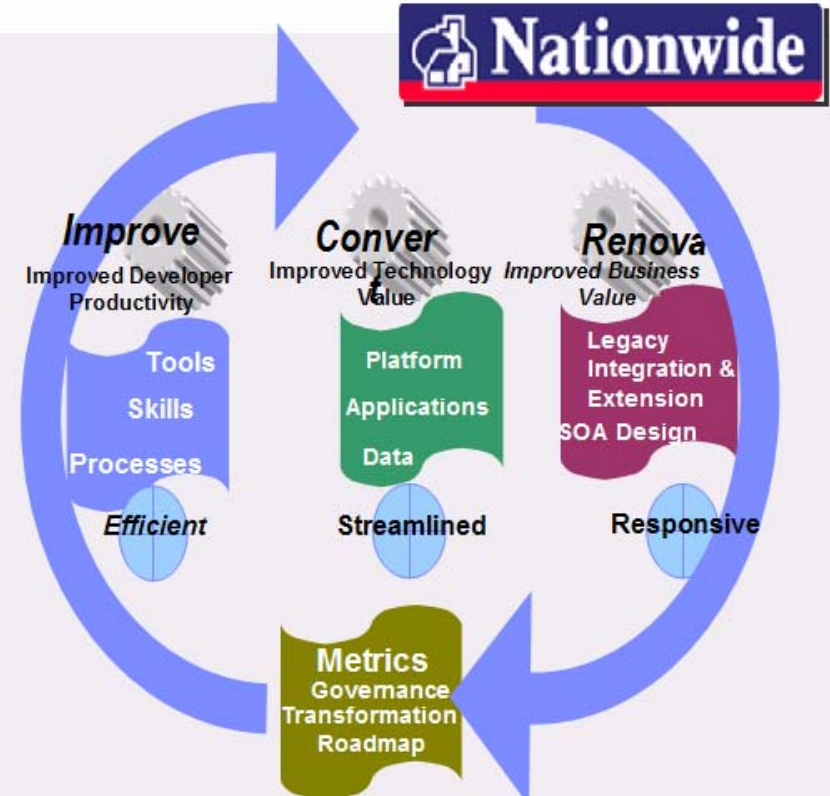
Nationwide establishes Mainframe Center of Excellence
Leverage and modernize the mainframe environment with IBM tools

- The enterprise understands that to simply abandon mainframe applications is to lose a significant competitive advantage.

- The enterprise prefers a strategy to preserve and renovate critical business processes by developing and managing an incremental modernization roadmap.

- Modernization encompasses not only the applications but also the architecture, processes, tools, infrastructure and developer community.

Nationwide

Improve
Improved Developer Productivity

Tools
Skills
Processes

Efficient

Conver
Improved Technology Value

Platform
Applications
Data

Streamlined

Renova
Improved Business Value

Legacy Integration & Extension
SOA Design

Responsive

Metrics
Governance
Transformation
Roadmap

Architecture & Design Excellence

Application Excellence Process & Tools

Infrastructure Excellence

People Excellence

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
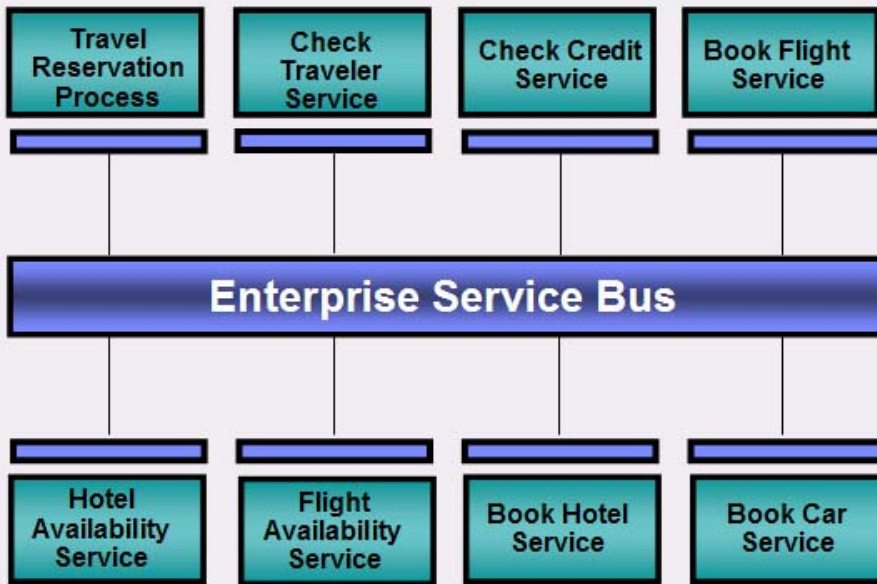
Start with

- Messaging backbone as the foundation for SOA connectivity

- Enable mediated exchange between services, by leveraging an ESB

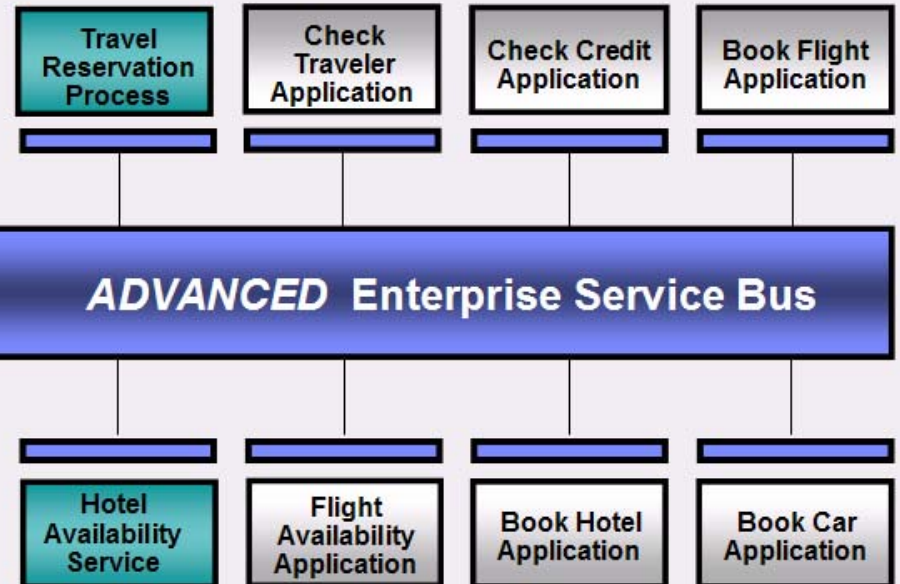- SOA appliances integrate for ESB functions in a hardware form factor
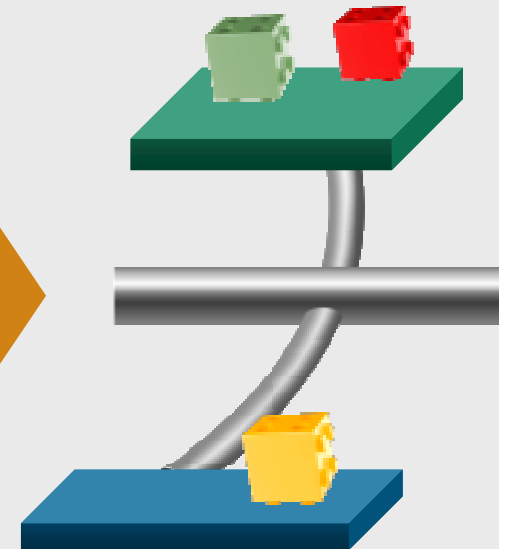
Connect Services

Connecting People, Process and Information

1 If all your applications conform to the Web Services standards…

Travel Reservation Process	Check Traveler Service	Check Credit Service	Book Flight Service

Enterprise Service Bus

Hotel Availability Service	Flight Availability Service	Book Hotel Service	Book Car Service

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

2 If <u>not</u> all your applications conform to the Web Services standards…

Travel Reservation Process	Check Traveler Application	Check Credit Application	Book Flight Application

ADVANCED **Enterprise Service Bus**

Hotel Availability Service	Flight Availability Application	Book Hotel Application	Book Car Application

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

Connect Services
Quickly service-enable your assets with versatile adapters

Broad support, including Linux

- WebSphere Adapters for JDBC (J2EE 1.5) and FlatFile support Linux on System z

- Widening the depth of IBM's BPM and application integration portfolios

Pre-built adapters

- For PeopleSoft Enterprise, SAP Software, Siebel Business Applications,

- Enterprise Metadata Discovery (EMD) specification support, with wizard-driven metadata configuration using WebSphere Integration Developer V6.0

Build your own adapters

- WebSphere Adapter Toolkit to facilitate development of custom JCA 1.5-compatible adapters

Connect existing and new services & other assets
Avis creating value with their System z assets

Actions & Benefits:

AVIS — We try harder.

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 Point to a Process Centric Approach
Business Process Management for Continuous Innovation

z Value

- Innovative, SOA driven business models deployed quickly with flexible processes

- Centralize business critical processes with the 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

WebSphere Process Server for z/OS   NEW!

- 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
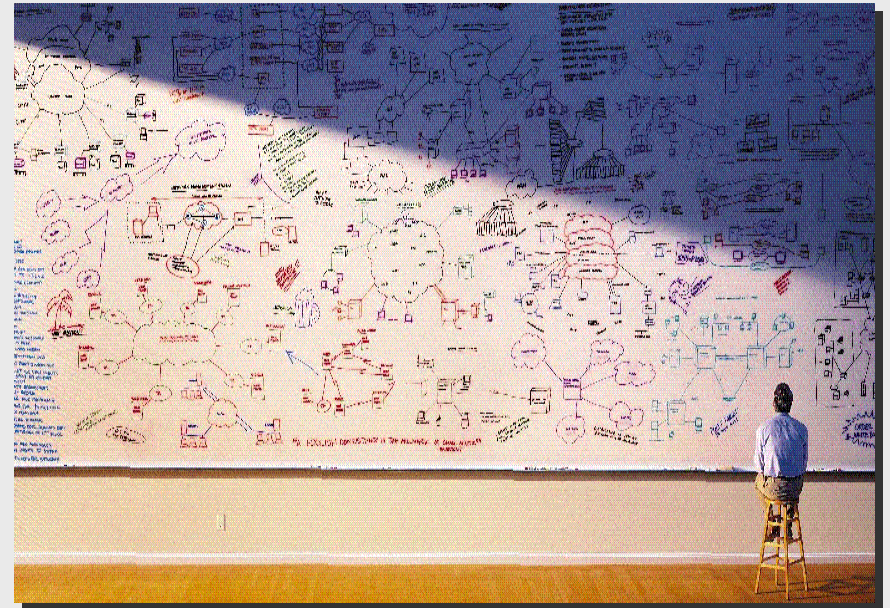
System z for when your processes absolutely must be available

ISVs on System z
A strong SOA ecosystem

"We have many customers engaged today in SOA Proof of Concepts. To meet the increased interest, we are expanding our SOA skills and offerings."
— *Joe Mertens,*
Executive Vice President

"Our move to the zOS world was boosted by the IBM ISV Partnership programs which allowed us to benefit from excellent IBM benchmarking centers such as Montpellier for zOS and the IIC-Paris for AIX."

"AFS … relies on zSeries hardware, WebSphere Application Server and DB2 to power the largest ASP for commercial lending in the US with over $1.3 trillion in loans being processed per day. The zSeries platform also supports our development with multiple environments including Linux"
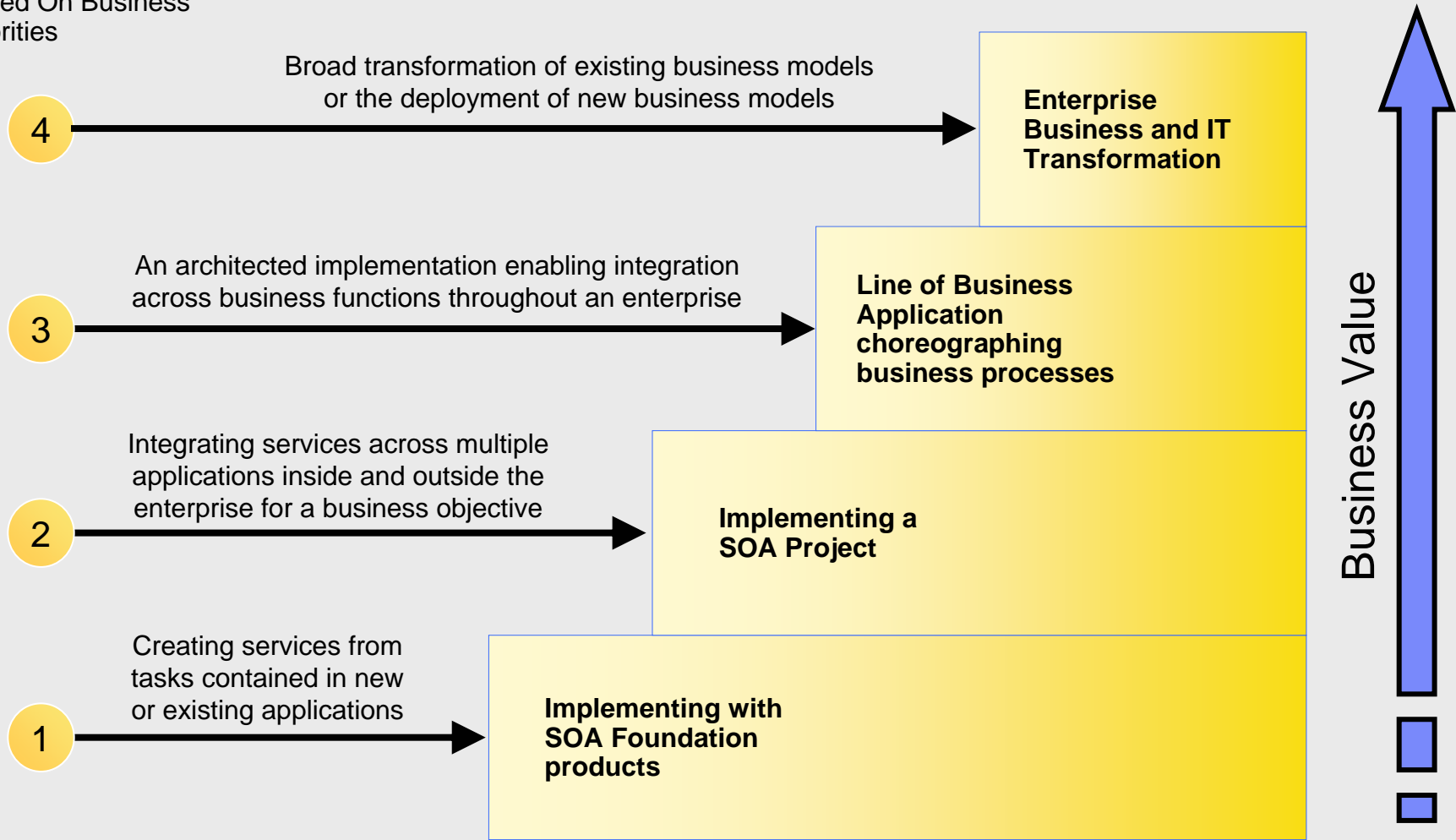

"IBM is once again demonstrating its commitment to the System z platform, by delivering Software that enables a SOA and helps customers manage the underlying infrastructure. Vicom Infinity has made SOA our #1 priority …."

Organizations can take different paths to eventual adoption of SOA depending on your business goals and IT constraints.

Entry Points
Based On Business
Priorities

4 — Broad transformation of existing business models or the deployment of new business models → **Enterprise Business and IT Transformation**

3 — An architected implementation enabling integration across business functions throughout an enterprise → **Line of Business Application choreographing business processes**

2 — Integrating services across multiple applications inside and outside the enterprise for a business objective → **Implementing a SOA Project**

1 — Creating services from tasks contained in new or existing applications → **Implementing with SOA Foundation products**

Business Value

What is a System z Infrastructure Architecture Workshop?

Consultative, solutions based approach that is business problem focused; non-industry specific (typically 1-2 days)

- Uses established methodologies, concepts, and patterns based on proven results
  - ▶ Identify and document the current (AS-IS) environment
  - ▶ Develop a proposed future state (TO-BE) architecture
  - ▶ Discover and document needed capabilities to arrive at (TO-BE) architecture

- Combination of white boarding, presentations, subject matter expertise (includes both client & IBM resources)

- Interactive, collaborative "JAD" session

- Positions IBM's SOA Reference Architecture and Cross Brand SWG product capabilities

- Focuses on leveraging mainframe assets and maximizing value of System z as a platform

- Promotes internal client dialogue and brainstorming
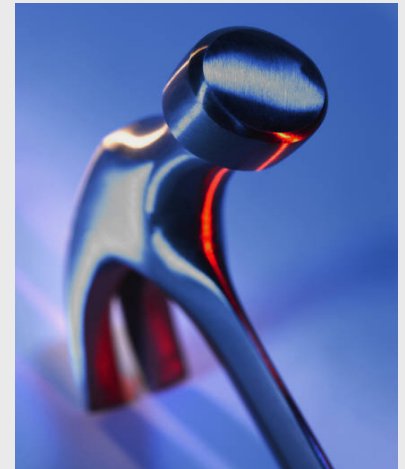
System z Focus: Leveraging existing assets and platform capabilities…

CICS On Demand Seminars - CODS

- Hear from CICS experts on how CICS can support your SOA

- Agenda tailored for your environment

- Great opportunity to get CICS developers, system programmers and architects together to explore how CICS could fit into your SOA architecture

CICS in an On Demand Environment Seminar Agenda (Sample)

Integration with CICS using Web Services

Application Development for Composite CICS Applications

WebSphere Developer for System z

Services Flow Modeller

Using CONTAINERs and CHANNELs to break free of the 32KB limit

Optimize your CICS systems for mixed workloads with CICS Tools

Next steps to an on demand environment

CICS in Action
→ a brief tour of CICS
Transaction Server

System z and System z9 Center of Excellence
zCoE – Is ready to help you!

- Modernize and Extend Legacy Assets
  - ▸ Improve User Interface and Connectivity
  - ▸ Improve Application and Data Integration
  - ▸ Provide SOA Solutions
- Extend Usage of Platform
  - ▸ Create new application code on System z
  - ▸ Host Linux applications on System z
  - ▸ Invest in new applications and solutions
- Improve Operational Efficiencies
  - ▸ Improve TCO across Hardware / Software
  - ▸ Improve platform skills
  - ▸ Improve operational and management processes

Contact: Brian Senn – senn@us.ibm.com

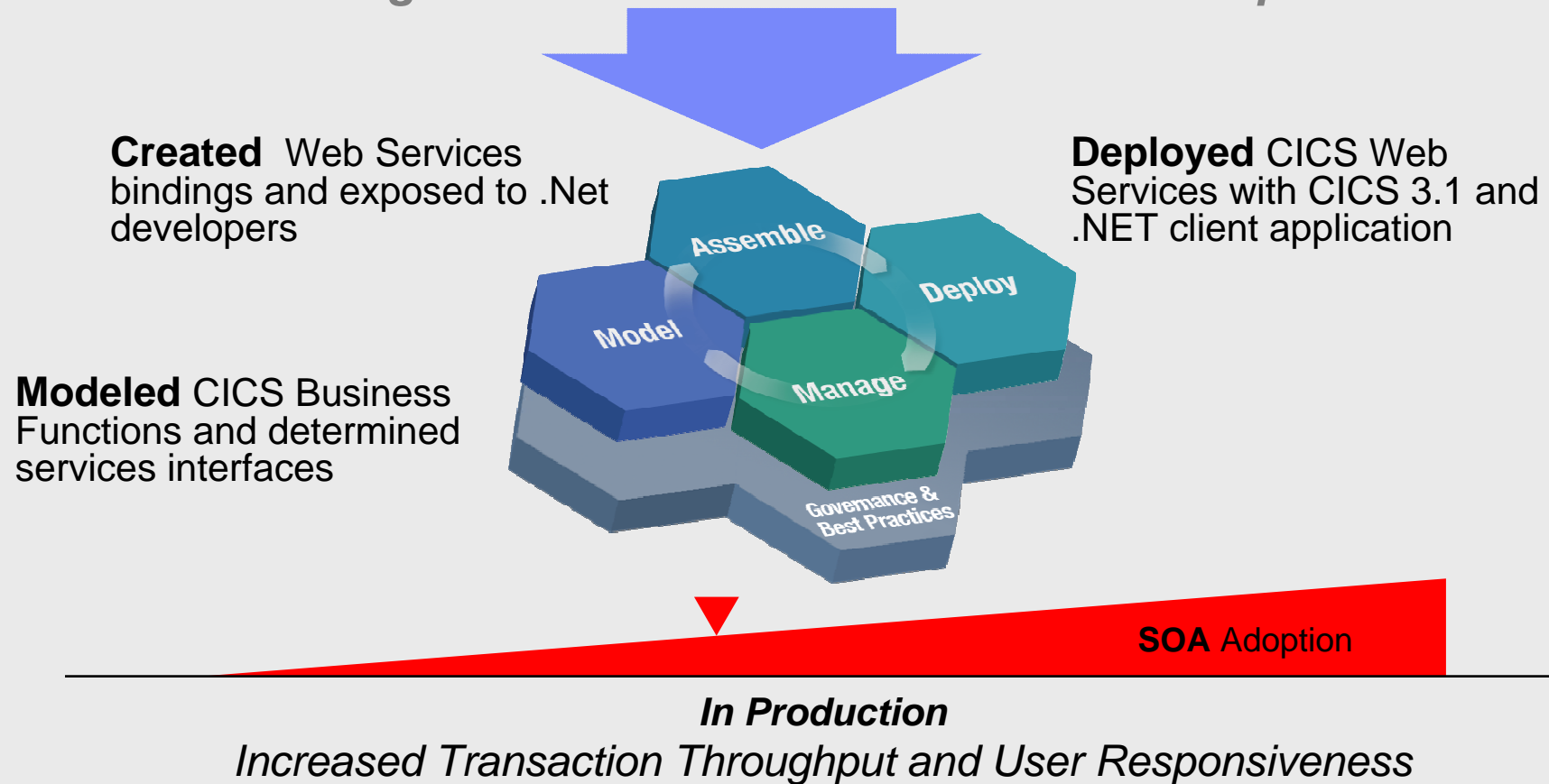Partnering across IBM brands and organizations to provide YOU a single point of contact for System z Services

IBM Global Services

STG Services
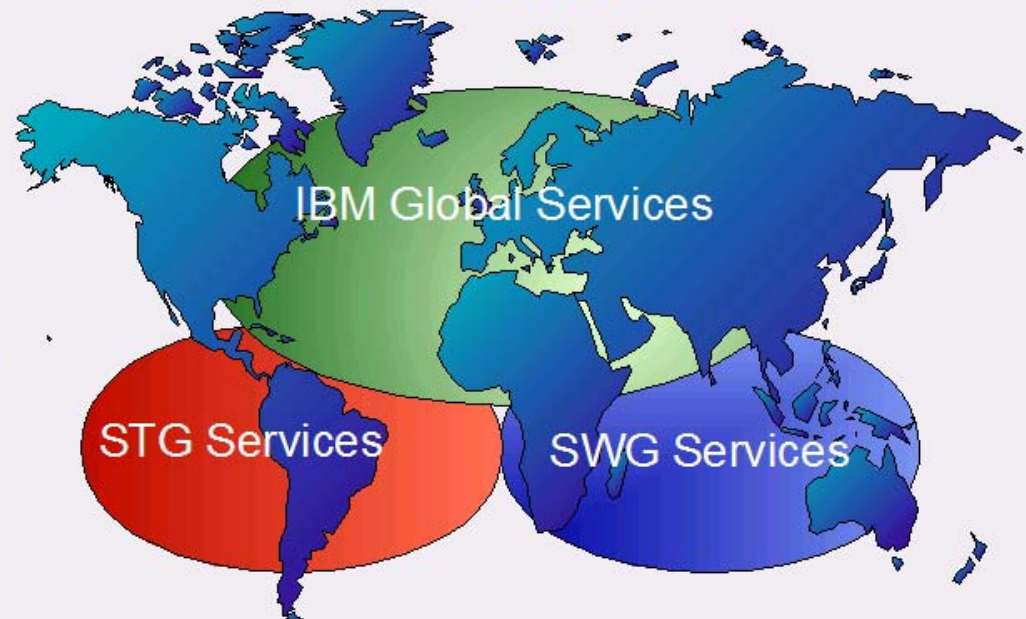
SWG Services

System z and System z9 Center of Excellence

SOA lifecycle in action at a State Agency
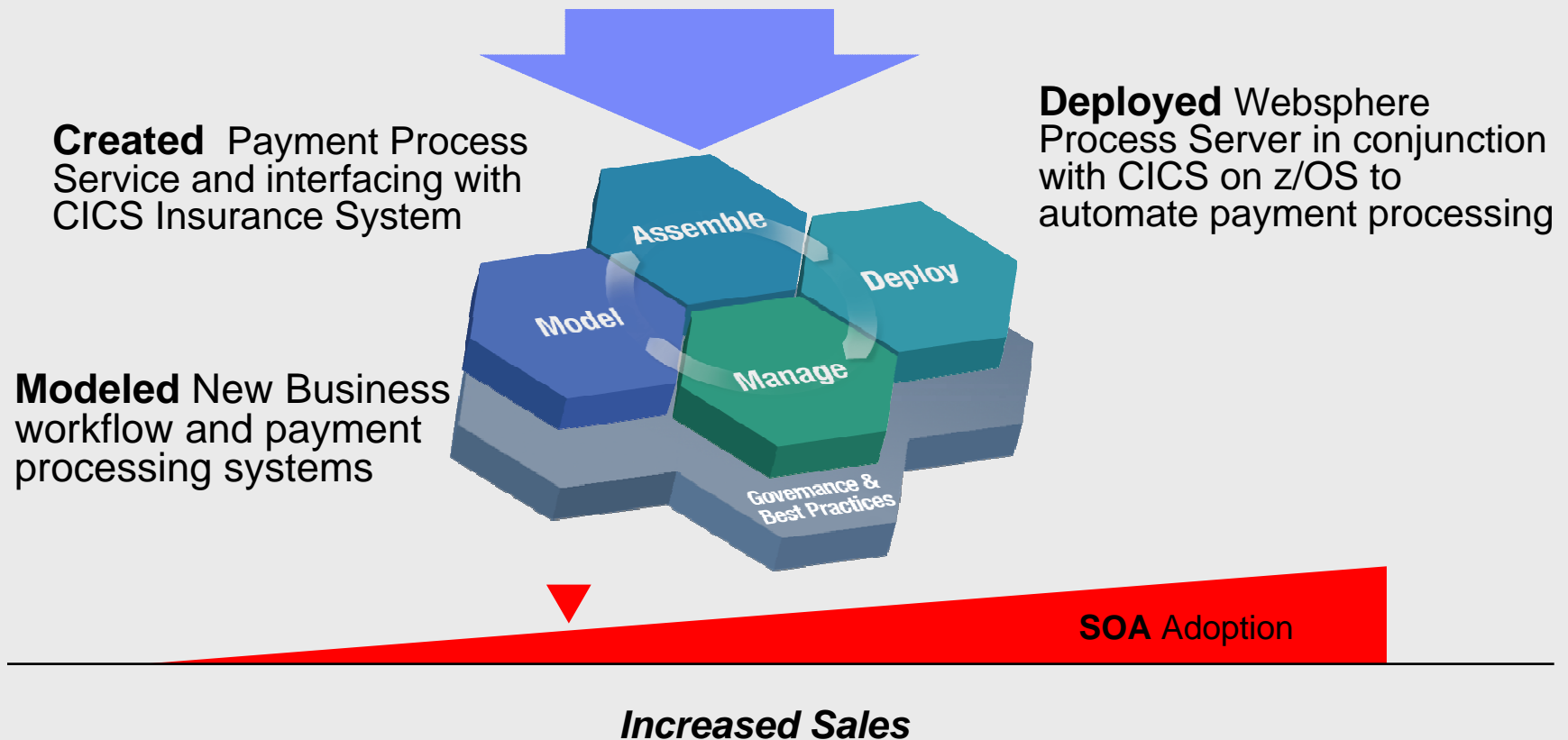*Enhancing throughput and user responsiveness*

Interfacing CICS WebServices with .NET development

Created Web Services bindings and exposed to .Net developers

Deployed CICS Web Services with CICS 3.1 and .NET client application

Modeled CICS Business Functions and determined services interfaces

Assemble

Deploy

Model

Manage

Governance & Best Practices

SOA Adoption

In Production
Increased Transaction Throughput and User Responsiveness

SOA lifecycle in action at a Major Insurance Company
Automating Initial Insurance Payment with Credit Card System

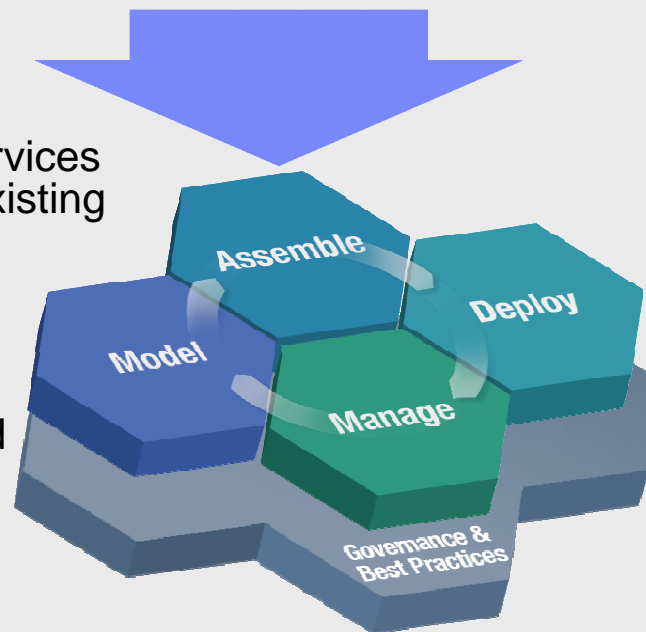**Integration of CICS into New Business Workflow with WPS**

Created Payment Process Service and interfacing with CICS Insurance System

Deployed Websphere Process Server in conjunction with CICS on z/OS to automate payment processing

Modeled New Business workflow and payment processing systems

Assemble

Deploy

Model

Manage

Governance & Best Practices

SOA Adoption

Increased Sales

SOA lifecycle in action at Office Supply Company
Enhancing customer order management using SOA

Worked with business end users to define project

Created new Web services and assembled with existing transaction systems

Deployed through an Enterprise Service Bus with high availability, failover, and high-volume throughput

Assemble

Deploy

Model

Manage

Governance & Best Practices

Modeled hardware and software infrastructure

Managed traffic load & version control

SOA Adoption

4 Month Project
Part of a plan expected to save over $20M!

Enabling innovation that matters for System z

- IBM's view of SOA is business centric

- IBM is investing in System z as a SOA platform

  ▶ Business centric entry points for People, Process, Information

  ▶ Deployment of business services

  ▶ Enterprise Connectivity

  ▶ Process and Systems management

  ▶ Application Development for System z

  ▶ System z9 Enterprise Class and Business Class

- IBM customers are rapidly **converging on SOA and System z**