



IBM SOA

Using WebSphere to achieve an SOA for reuse and service generation on the mainframe

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The basics: What is SOA?

... a service?

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



... **service oriented architecture (SOA)?**

An **IT architectural style** that supports
integrating your
business as linked
services

Why are IT Organizations Embracing SOA?

600+ Company Respondents Across 4 Studies

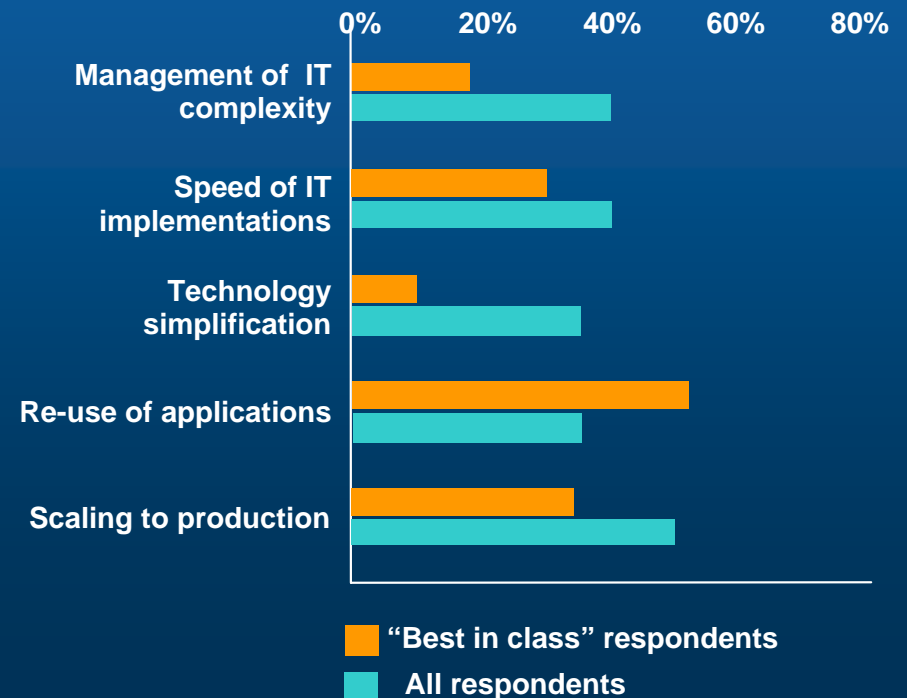


Business Drivers for IT Adoption of SOA

- Management of IT complexity
- Speed of IT implementations
- Technology simplification and consolidation of legacy middleware
- Re-use of applications via Web Services

Top Technology Challenges

- Scaling to production volumes, reliability & availability



Business Flexibility Depends on IT Flexibility

Application Infrastructure is the Cornerstone of an SOA Deployment

■ Application infrastructure

- ✓ Middleware software that controls runtime execution of business applications
- ✓ A well designed infrastructure provides the ability to enhance & reuse assets for new business opportunities

IBM delivers the broadest range of capabilities to meet your application needs



How can I...

...meet my business objectives?

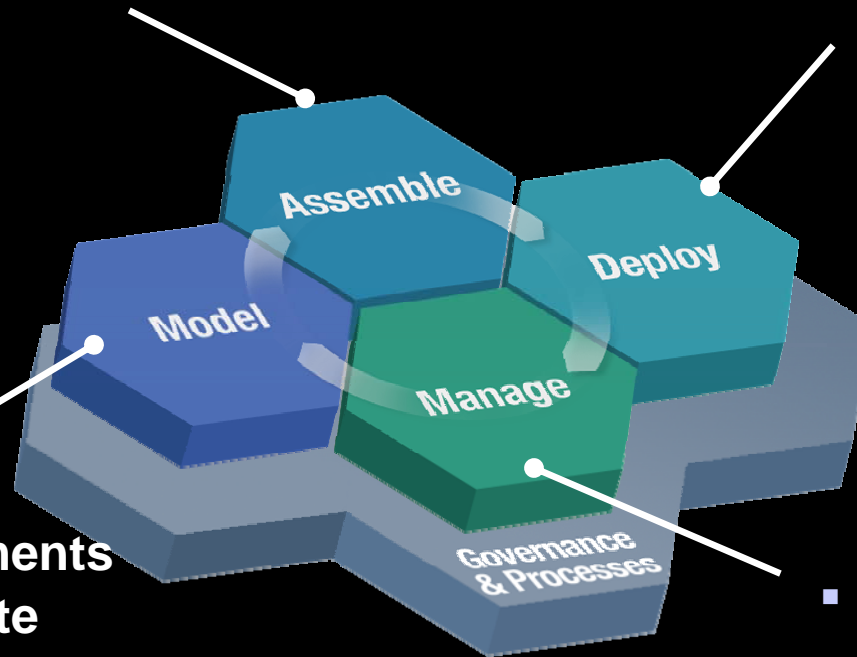
...leverage my existing resources and IT systems?

...deliver at a pace and cost which outwits my competition?

The SOA Lifecycle

- Discover
- Construct & Test
- Compose

- Integrate people
- Integrate processes
- Manage and integrate information

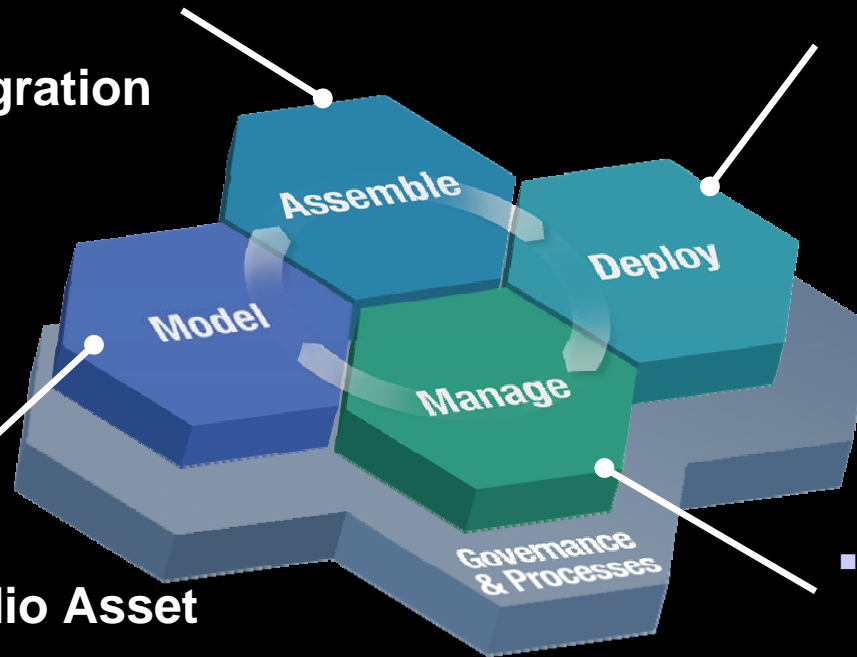


- Gather requirements
- Model & Simulate
- Design

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

SOA entry point: Reuse and service generation

- WebSphere Developer for System z
- Rational Application Developer
- WebSphere Integration Developer



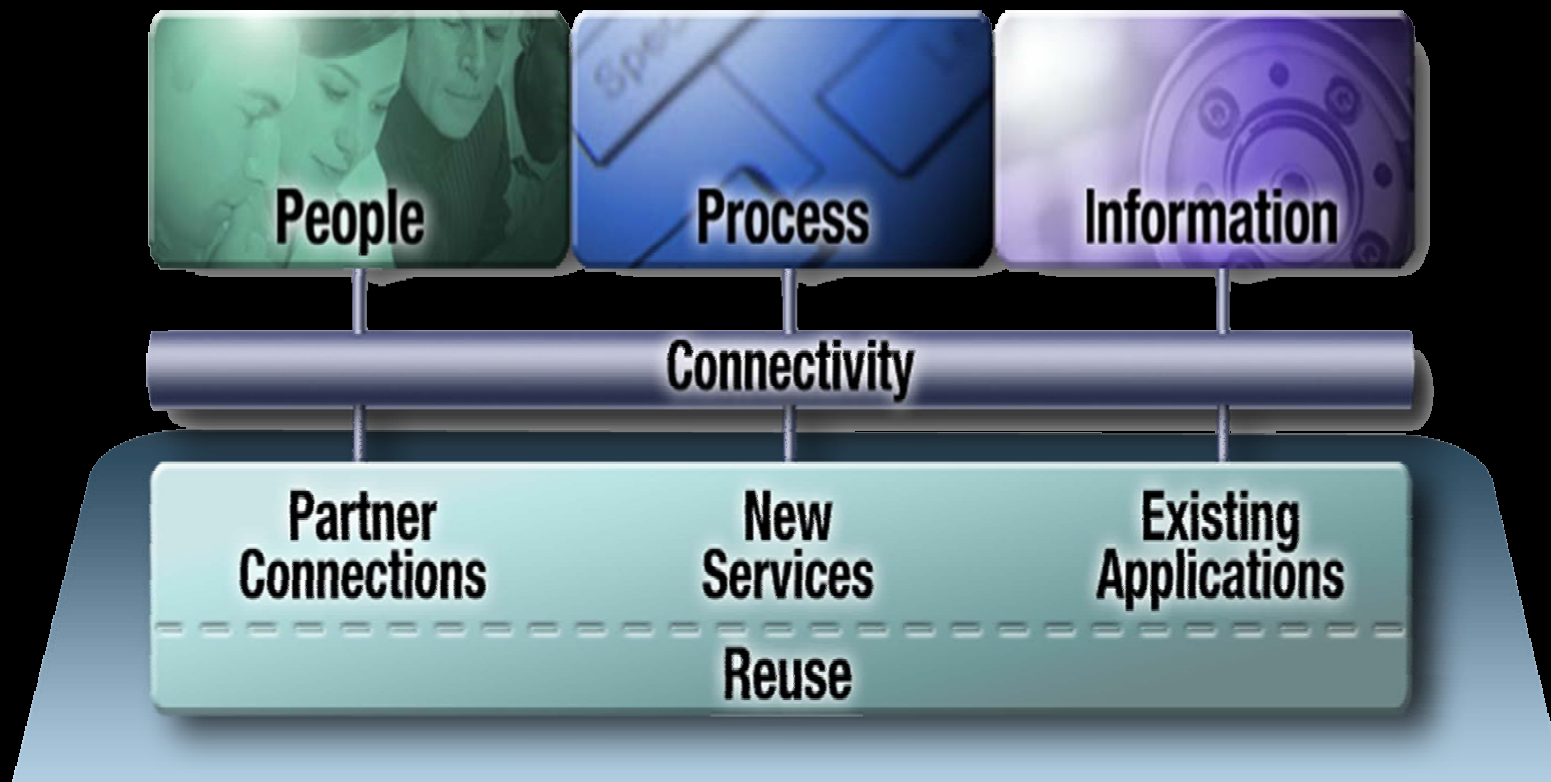
- WebSphere Studio Asset Analyzer
- WebSphere Business Modeler

- WebSphere Application Server
- WebSphere Portal Server
- WebSphere Process Server
- CICS
- IMS
- TPF

- Tivoli Composite Application Manager
- Tivoli for SOA
- WebSphere Registry and Repository
- WebSphere Business Monitor

SOA Entry Points

In partnership with Mercer Management Consulting, IBM has illuminated three core business-centric SOA starting points - **people**, **processes** and **information**, and two IT-centric starting points - **connectivity** and **reuse**

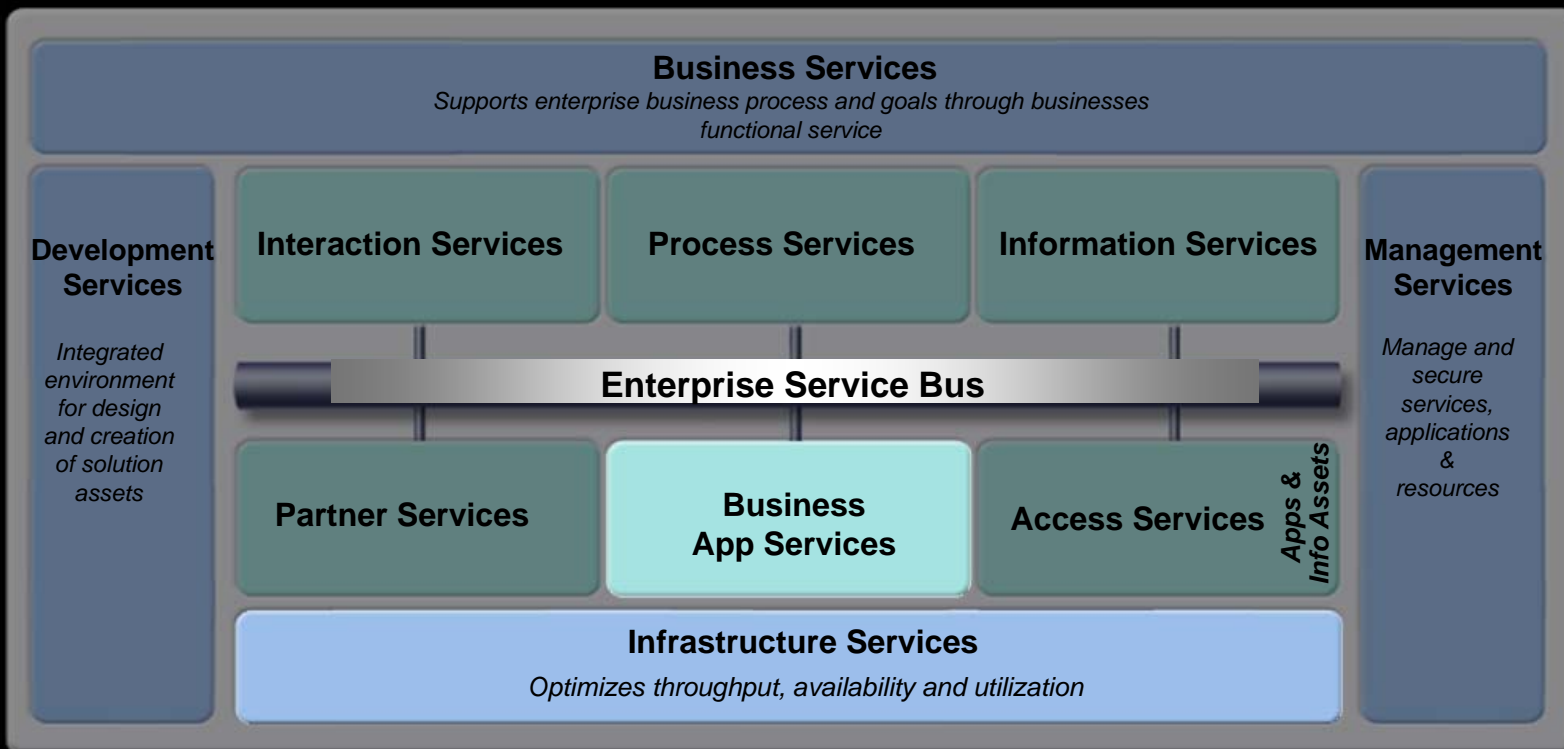


Achieve the Flexibility You've Been Looking For

IBM Application Infrastructure



- Establish a Secure, Scalable environment for building and deploying applications
- Deliver new, powerful web applications to improve your customers' experience
- Optimize the use of existing IT investments, skills and core systems



Enhancing our portfolio

Based on what we've learned from customers

Your core applications are among your **most valuable assets**

Increase productivity from discovery to development ...

- Rational development tools
- WebSphere Studio Asset Analyzer
- WebSphere Developer for System z

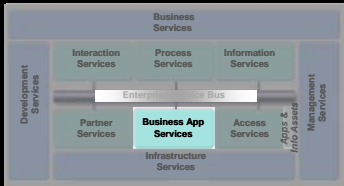
Robust, flexible, and powerful transaction engines ...

- WebSphere Application Server
- CICS Transaction Server; IMS; z/TPF

Embrace your SOA ...

- WebSphere Service Registry and Repository

Reuse



SOA Entry Point to Creating & Reusing Services

Create and Deploy Flexible, Service-based Business Applications

Benefit from:

- 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

Begin 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



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

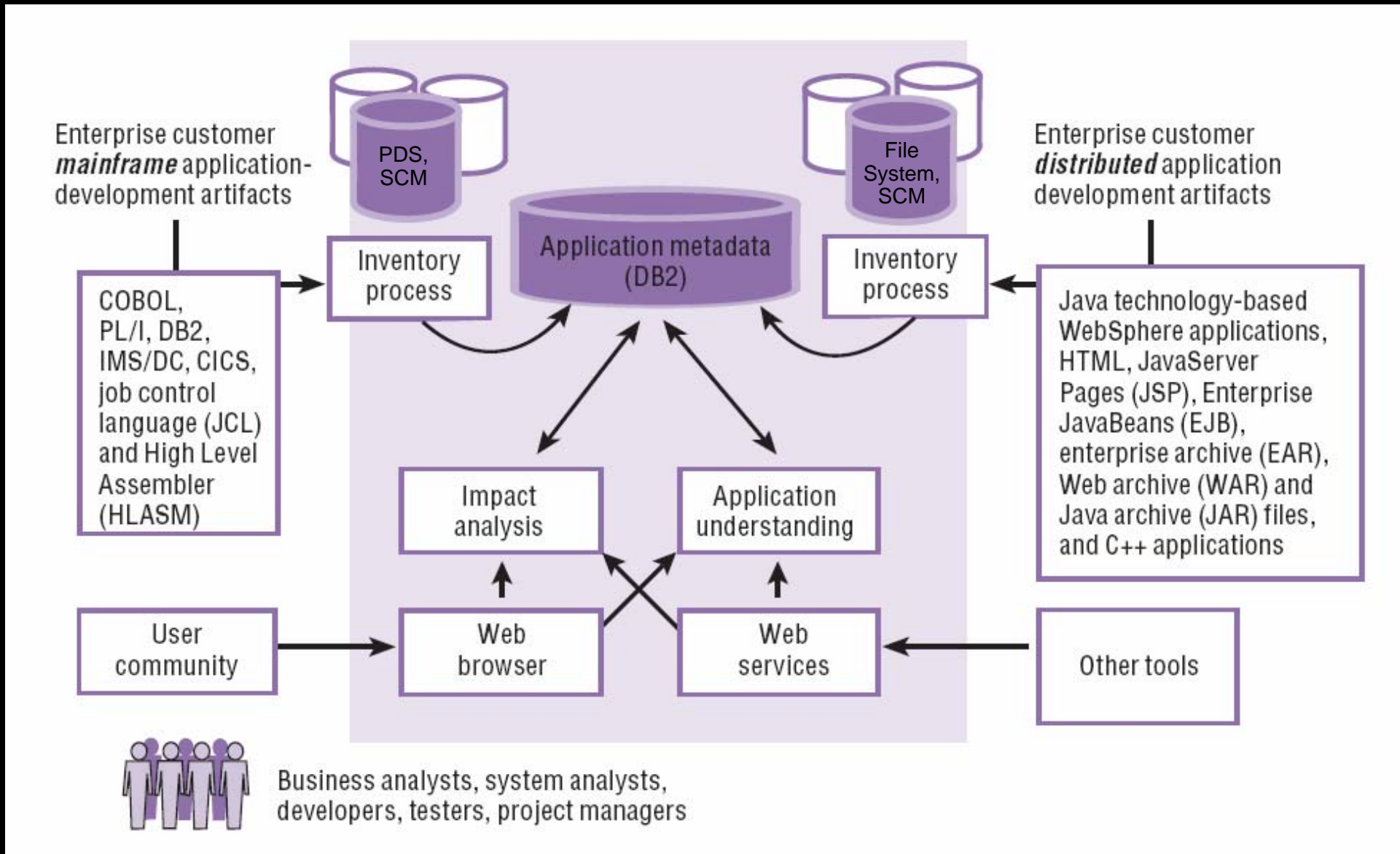


Built an SOA using **WebSphere's** open standards for interoperability between disparate products and platforms



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

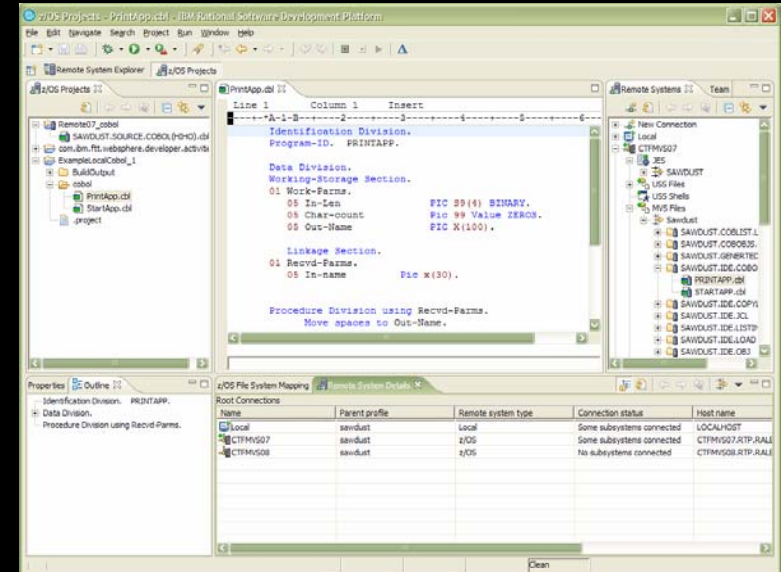
WebSphere Studio Asset Analyzer V4.2



WebSphere Developer for System z

Eclipse-based integrated development environment for developing enterprise-level, multi-tier composite applications

- ✓ **Builds core stack z/OS applications**
 - COBOL, PLI, HLASM
 - TSO/Batch, CICS, IMS, DB2
 - DB2 Stored Procedures – COBOL, PLI, Java, SQL
- ✓ **Creates COBOL/CICS/JSF/Java/J2EE Multi-tier apps**
 - Built on Rational Application Developer
 - Includes all of the J2EE web development tools
 - Generate JSF/EGL/J2EE web front ends
 - COBOL backends running on System z
- ✓ **Enables CICS and IMS applications for Web services and SOA**
 - Provides tooling to make it easy to integrate existing applications into an SOA



A bright and rising future for CICS Transaction Server

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

CICS Transaction Server V3.1

- Build Web services with no change to existing applications
- Highest levels of data integrity and security
- Optimized throughput and performance
- Simple and intuitive management
- Extended integration of the CICS Service Flow Runtime with WebSphere Process Server
- Support for Event Driven Applications
- CICS supportPac provides WSRR facilities to streamline registering, discovering & governing CICS Web services



IMS Application Integration with IMS SOAP support

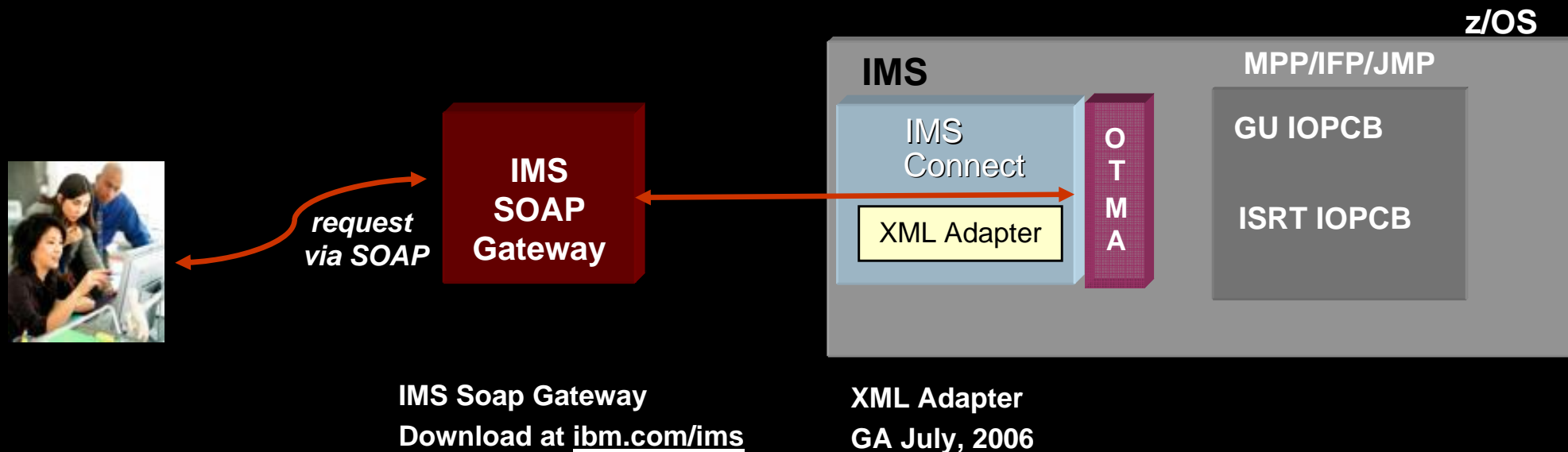
IMS V9

Enables Reuse of IMS Applications as Web Services

- ✓ Support Web Service 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.



IBM z/Transaction Processing Facility (z/TPF)

SOA and the future of high availability transaction processing

z/TPF is a high-performance engine specifically designed to provide **high availability for demanding high-volume, real-time transaction processing for mission critical e-business applications.**

- SOA enabled
 - SOAP, HTTP, XML, API, Apache, WSDL, SOAP over WS MQ
- Management of extreme transaction volumes
 - Tens of thousands of transactions per second from hundreds of thousands of end points
- High reliability and availability
 - 24 x 7 x 365 over years
- Efficiency
 - Supports the IBM 64-bit z/Architecture
- Low cost
 - Supports business models which require low cost per transaction for high-volume, real-time transactions
- Open development environment
 - Share applications, tooling and development infrastructure with Linux



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

- Full **64-bit support** eliminates the 1GB heap restriction and allows you to deploy larger applications
- New IBM HTTP Server powered by Apache for z/OS brings the industry's leading web server to z/OS
- 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

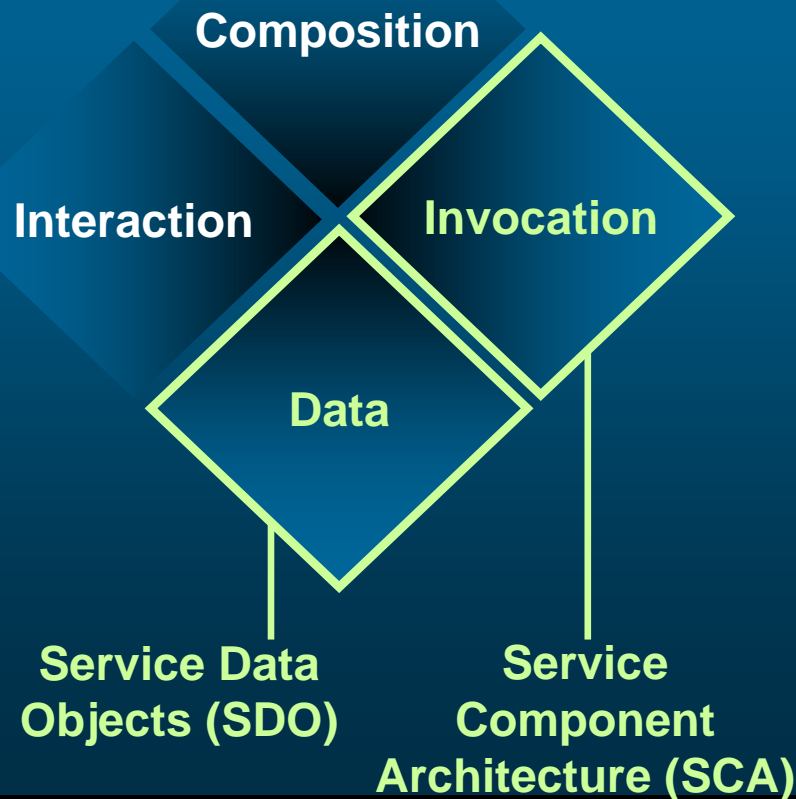


Technology Simplification

We're Ready with the Latest SOA Standards

New!

NEW Open Beta: WebSphere Application Server V6.1 Feature Pack for SOA!*



- Leverages open source **Apache Tuscany** technology to provide an implementation of the published SCA and SDO specifications
- SCA/SDO **simplify** the development experience for all developers, including J2EE developers:

Increase productivity: Reuse the components you create in other composite applications

Flexibility: Adjust underlying technologies without the need to rebuild business applications

Loose Coupling: Integrate other components without knowing how they are implemented

* Currently planned for late 4Q/early 1Q, depending on open source delivery

All statements regarding IBM's plans are subject to change or withdrawal without notice.

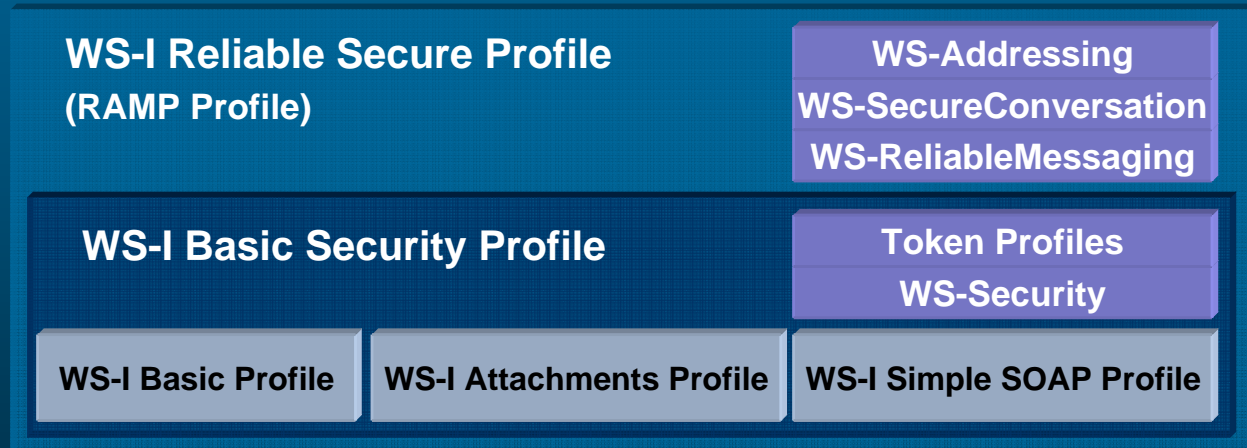
Reuse of Applications via Web Services

We're Ready with the Latest Standards For Reuse of Applications via Web Services



NEW Open Beta: **WebSphere Application Server V6.1 Feature Pack for Web Services!**

- **Interoperable, Reliable Web services:** Send messages asynchronously, reliably, securely and in an interoperable way with other vendors
- **Easy-to-implement**
Simplify development of Web Service providers and clients
- Add XML data and processing functions to Java applications easily
- **Consumable and Extensible**
Simplified management makes it easy to configure and reuse configurations



WebSphere Service Registry & Repository

WebSphere Service Registry and Repository delivers...

- Integrated service metadata registry and repository to govern services and manage service lifecycle promoting visibility, consistency and reducing redundancy in your SOA
- Seamless publish and find capabilities across all phases of SOA fostering reuse of services, enriching connectivity with dynamic and efficient interactions between services at runtime

New feature highlights

- Publish and find services and related metadata through all stages of SOA
- Integration and federation with other standard registries and repositories
- Enable optimized access to service metadata
- Manage service interactions and policies
- Facilitate service lifecycle with guards for state transitions
- Analyze impacts of service introduction, deletion or alteration by maintaining relationships
- Manage role based access to services, changes, versions and service retirement

Key benefit

Promote reuse and eliminate redundancies

Enrich SOA runtime interaction

Better control of SOA with governance

Scaling, Reliability & Availability

Insurance Services Office

WebSphere and System z: Bottom-line Benefits

Challenges

- Alleviate spiraling costs and migration difficulties of distributed infrastructure
- Provide a development and runtime solution that would fit within budget guidelines

Solution & Benefits

- ISO standardized on a secure, rock-solid platform that meets their Service Delivery objectives.
- WebSphere for z/OS provides the reliability and scalability the business needs with annual savings of \$3M



*With WebSphere's common cross-platform codebase, the **substantial performance benefits** that have been achieved with version 6, and the whole range of **manageability, security and performance benefits of System z**, ISO has no doubt that WAS for z/OS is the best way forward.*

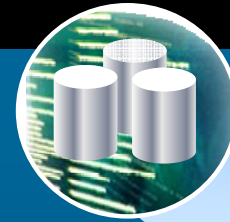
Manage IT Complexity

WebSphere Extended Deployment V6.0.2



Enterprise Class Features

- Continuous application availability with Application Edition Manager
- Automate selected admin functions to reduce complexity
- Advanced edge of Sysplex routing capabilities
- Health monitoring capabilities



Business Grid Batch Capabilities

- A sophisticated asynchronous solution
- Elimination of data massaging via intermediaries
- Recoverable message processing from saved checkpoints
- Flexible job scheduling choices
- Integrated management of online and batch applications

Reuse in Action

A large bank reduces redundancy through shared reuse



Reuse



The Business Problem

The Financial Calculator application is a 'Kernel' application that must be available to numerous other banking applications, including asynchronous batch-type applications that execute tasks such as calculating interest and credit scores

The Business Problem Solved

- WebSphere Extended Deployment provides the ability to centralize core business logic that can be asynchronously accessed by the applications that need it - including batch apps
- Deploying to z/OS ensured the application is highly available, scalable, secure, and that data integrity is robust

Achieve the Flexibility You've Been Looking For

Where you deploy your SOA matters



system sophistication

Windows infrastructure derive their value almost exclusively from SW

UNIX/AIX/Linux infrastructures provide value in the form of:

- Simple workload management (WLM)
- Clustered high availability (99.8%)
- AIX LPARS

z/OS infrastructure provide value in the form of:

- Advanced enterprise workload management (WLM)
- Advanced availability (99.999%)
- Dynamically responsive LPARs
- Complex transaction management with rollback/compensate support
- Stringent security and isolation
- Strong change management

Platform capability

Why IBM Application Infrastructure?



“ WebSphere Application Server is one of the most popular J2EE platforms: It has been on the market for many years, enjoys vast industry support and has an impressive installed base...”



*Gartner Magic Quadrant for Enterprise Application Servers, 2Q06. By Yefim V. Natis, Massimo Pezzini, Kimihiko Iijima, Michael Barnes, August 2006

Secrets of SOA

An enterprise view on service oriented architecture deployment revealed



Written for **IT professionals** and **executives** and by **IBM senior technical** and **enterprise SOA customers**

This book delivers insight into ...

- ... the business impact of SOA technological deployment decisions with an emphasis on **cost**, **flexibility**, and the **ability to maintain business objectives**
- ... how to address SOA related IT issues, such as **virtualizing resources**, **managing heterogeneous workloads**, **maintaining data and transactional integrity**, and the value of **keeping applications close to the data they access**



We're Ready When You Are