



Il Mondo dei Partner **2007**

L'INTEGRAZIONE DEL NOSTRO VALORE

Parma, 1-2 febbraio

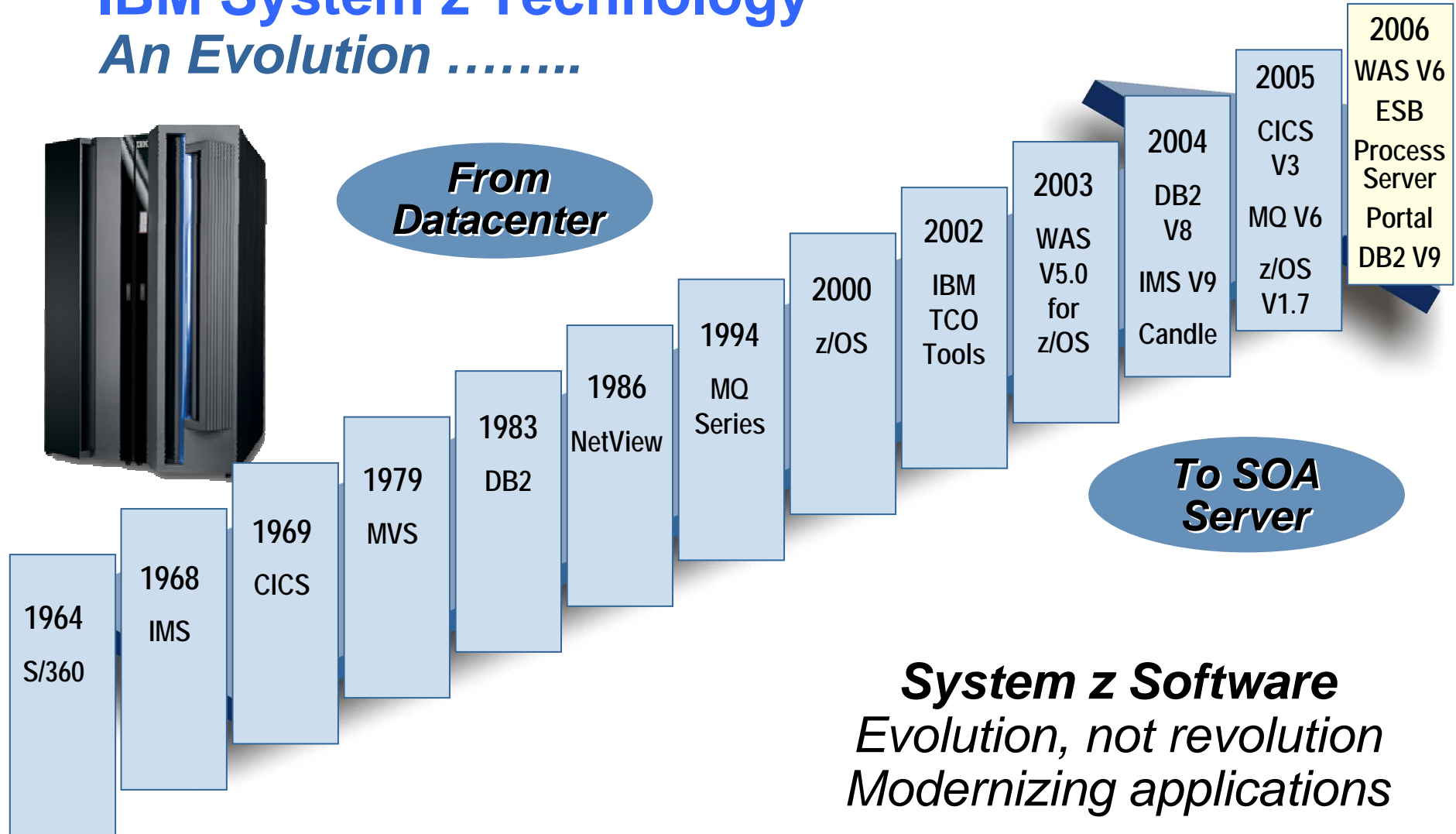
Software Ecosystem on zSeries

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IBM System z Technology

An Evolution



System z Software
Evolution, not revolution
Modernizing applications

Openness and Standards

Linux

UNIX

SOA

SAN

Java

*Web
Services*

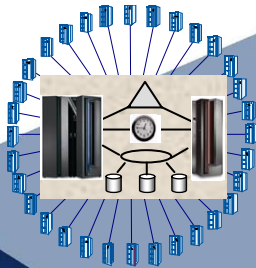
J2EE

Grid & Autonomic Sys. Mgmt

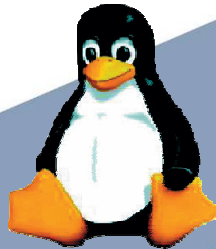


Mainframe Innovation: Specialty Engines

- Centralized data sharing across mainframes



Internal Coupling Facility (ICF) 1997



Integrated Facility for Linux (IFL) 2001

- Support for new workloads and open standards



System z9 Application Assist Processor (zAAP) 2004

- Incorporation of Java™ into existing mainframe solutions



IBM System z9 Integrated Information Processor (IBM zIIP)

- Designed to help improve resource optimization for eligible data workloads within the enterprise



Agenda...

- 1** **Linux on zSeries**
- 2** **SOA on zSeries**
- 3** **Enterprise Transformation and Tools strategy**
- 4** **Data Server on zSeries**
- 5** **Conclusion**

Linux: an Open Standards Operating System

Win - Win

Ensures cross platform integration

Open Industry Participation

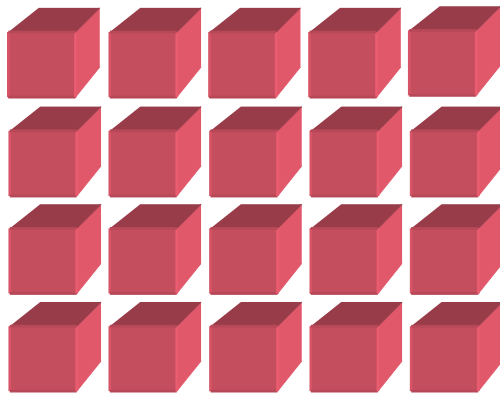
Open Networks

Emerging Standards: Open Grid Services

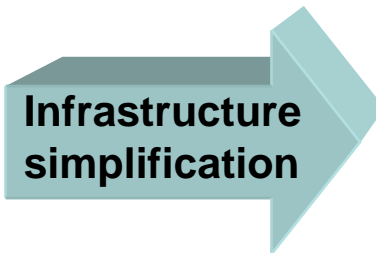
Vendor (IBM)	Customer
Common Development across HW platforms	Independence of HW platforms and a viable alternative for Intel
Unified HW offering from workgroup computing to Enterprise class computing	Common skills across platforms and easy to find in the market
Ecosystem: Leverage on a worldwide development factory and giveback to the community	Direct vendor (es. IBM) involvement lowers the technology adoption risk.

Linux on System z Opportunity

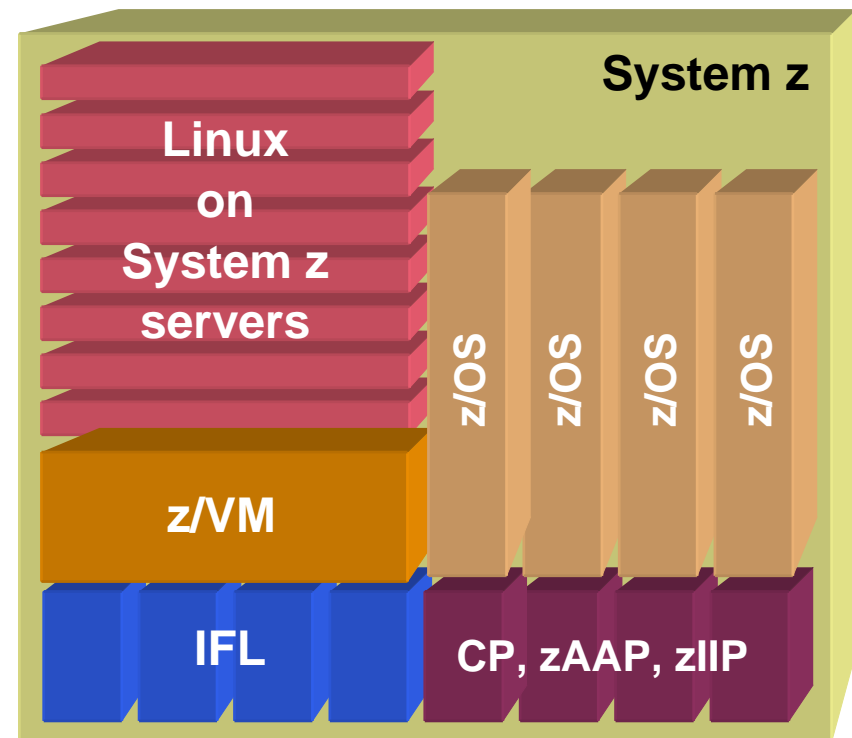
Server Farms



Windows Intel / Unix Risc
Single purpose
servers

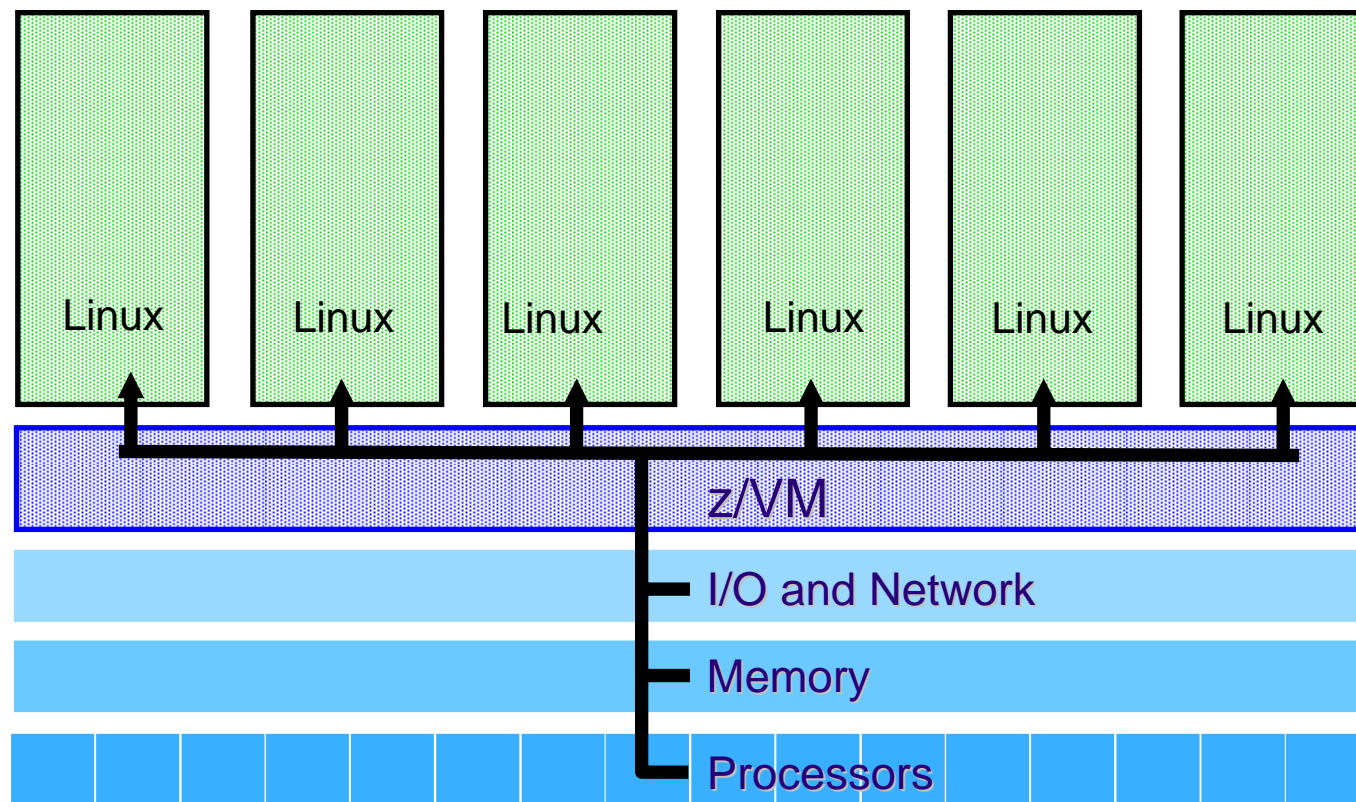


Virtual rack and stack servers

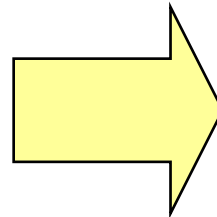
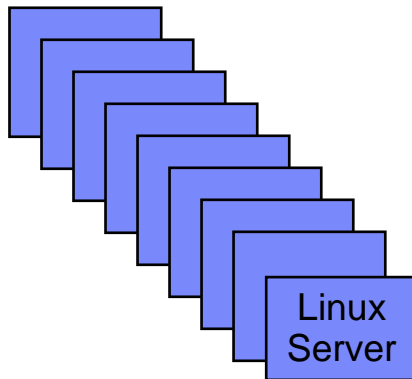


Virtual Machine Partitioning

A *Virtual Machine* simulates the existence of a dedicated real machine, including processor functions, storage, and input/output resources.



Linux & Unix Applications The Economics of Workload Consolidation



60 Linux servers with low utilization

Plus 60 middleware licenses

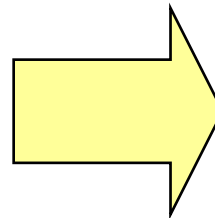
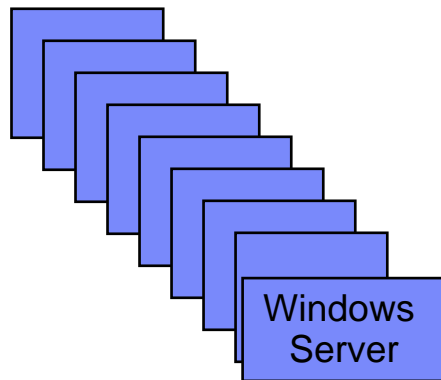
Plus $\$6,500 \times 60 = \$390,000/\text{yr}$ labor

One IFL processor with high utilization

Plus one middleware license

Plus little additional labor

Linux & Windows applications



You can do it

Partnership with Mainsoft Corporation
www.mainsoft.com

REHOSTING .NET applications in Java

Oracle 10_g Database Server on Linux for zSeries



Oracle Database 10_g Release 1

- 64-bit implementation only
- Linux Distribution Certification: Completed
 - SuSE Linux Enterprise Server 8 (64-bit)
 - SuSE Linux Enterprise Server 9 (64-bit)

Oracle Database 10_g Release 2

- 64-bit implementation only
- Linux Distribution Certification: Completed
 - SuSE Linux Enterprise Server 9 (64-bit)
 - Red Hat Advanced Server 4 (64-bit)

Oracle Transparent Gateway for DRDA (e.g. connecting to DB2)



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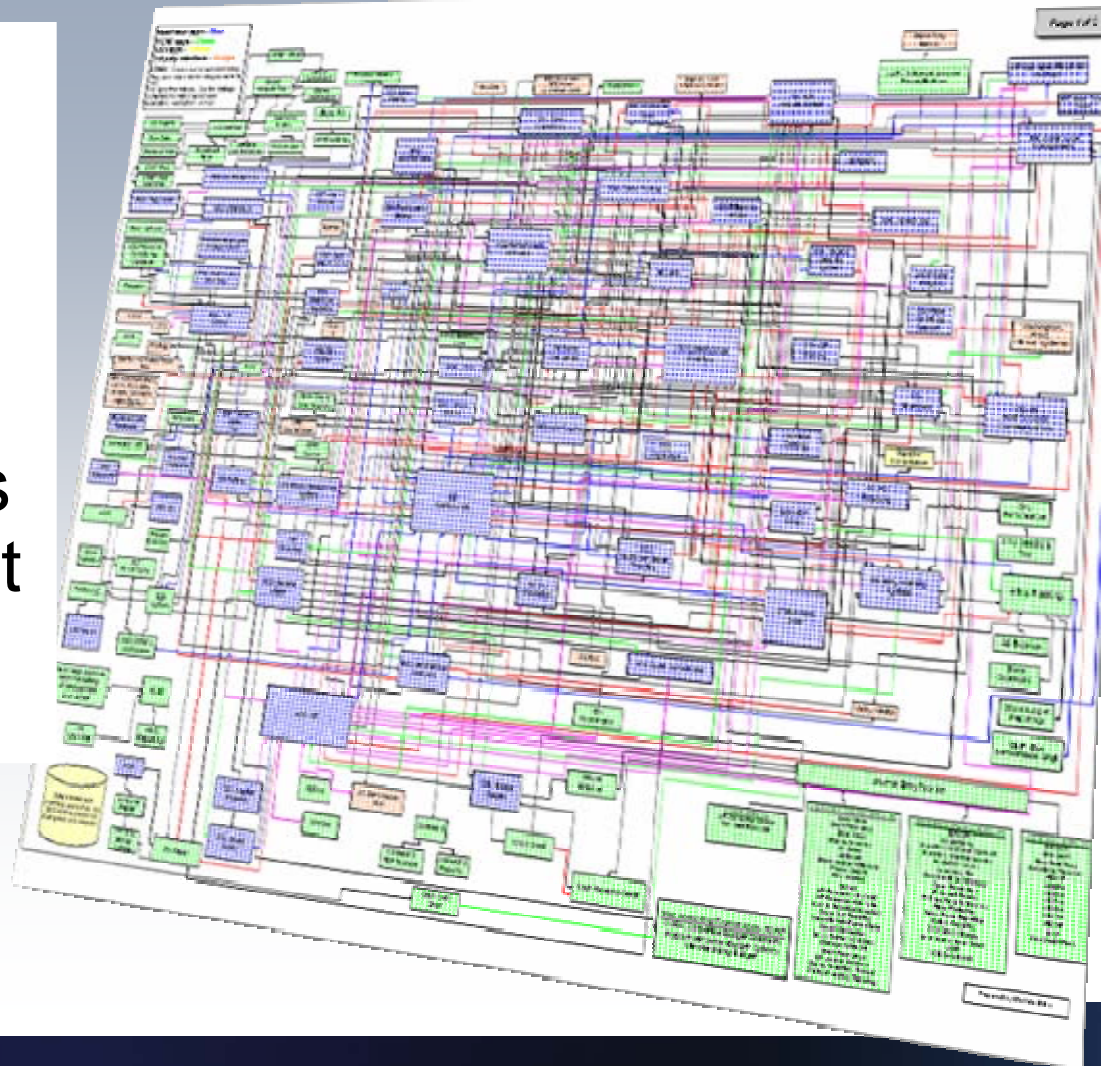
What are the barriers to business flexibility?

Lack of business process standards

Architectural policy limited

Point application buys to support redundant LOB needs

Infrastructure built with no roadmap



SOA : Some definitions ...

... a service?

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

... service orientation?

A way of integrating your
business as linked services
and the outcomes that
they bring

... service oriented
architecture (SOA)?

An IT **architectural style** that supports
service orientation

... a composite
application?

A set of **related & integrated** services that
support a business
process built on an SOA



SOA and zSeries : highlight

Rewriting all existing applications and moving them to new platforms is not a viable option

New code **cost 5X** than reusing existing code

Software Productivity Research (SPR)

★ 200 Billion lines of COBOL code in existence
eWeek

★ 5 Billion lines of COBOL code added yearly
Bill Ulrich, TSG Inc.

★ Between 850K and 1.3 Million COBOL developers
with 12,000 per year attrition

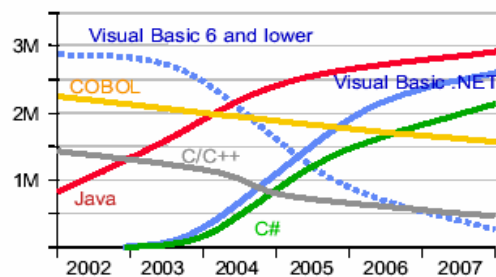
IDC

★ Majority of **customer data still on mainframes**, even
though a lot of it is front-ended through the Web and
e-Commerce applications

Don Greb, Mellon Financial Corp from Computerworld

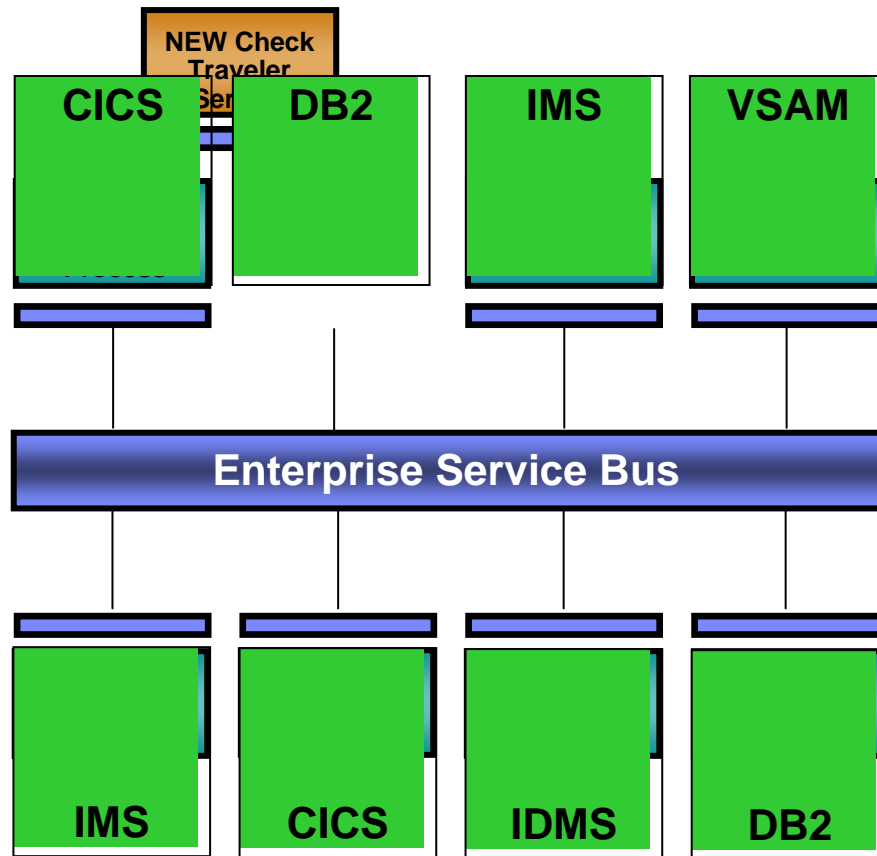
Developers

From an estimated worldwide market size
of 7 million "professional" developers



M = million
Gartner

SOA lets you focus on core business, not IT



Add new services faster

Change services with minimal impact to existing services

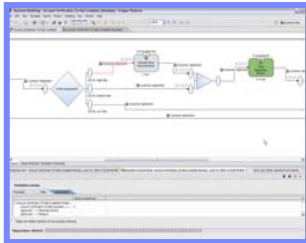
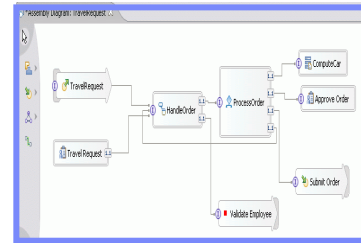
REUSE core System z resources in composite SOA service implementations!

NEW Flight Availability Service

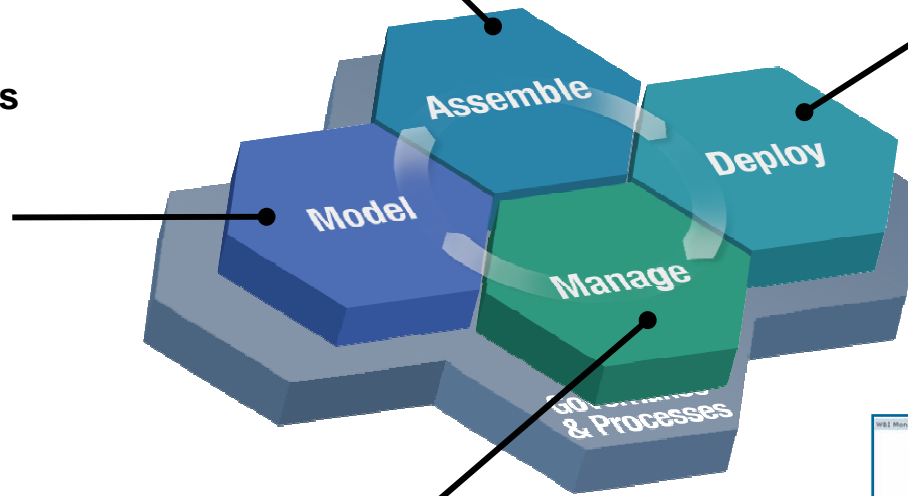


The SOA Foundation and SOA life cycle

- Discover and extend
- Construct and test
- Compose



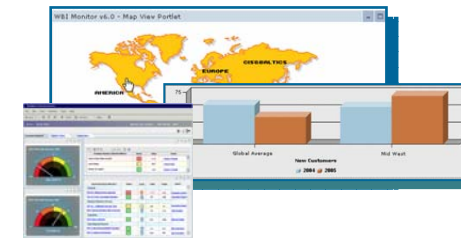
- Gather requirements
- Model and simulate
- Design



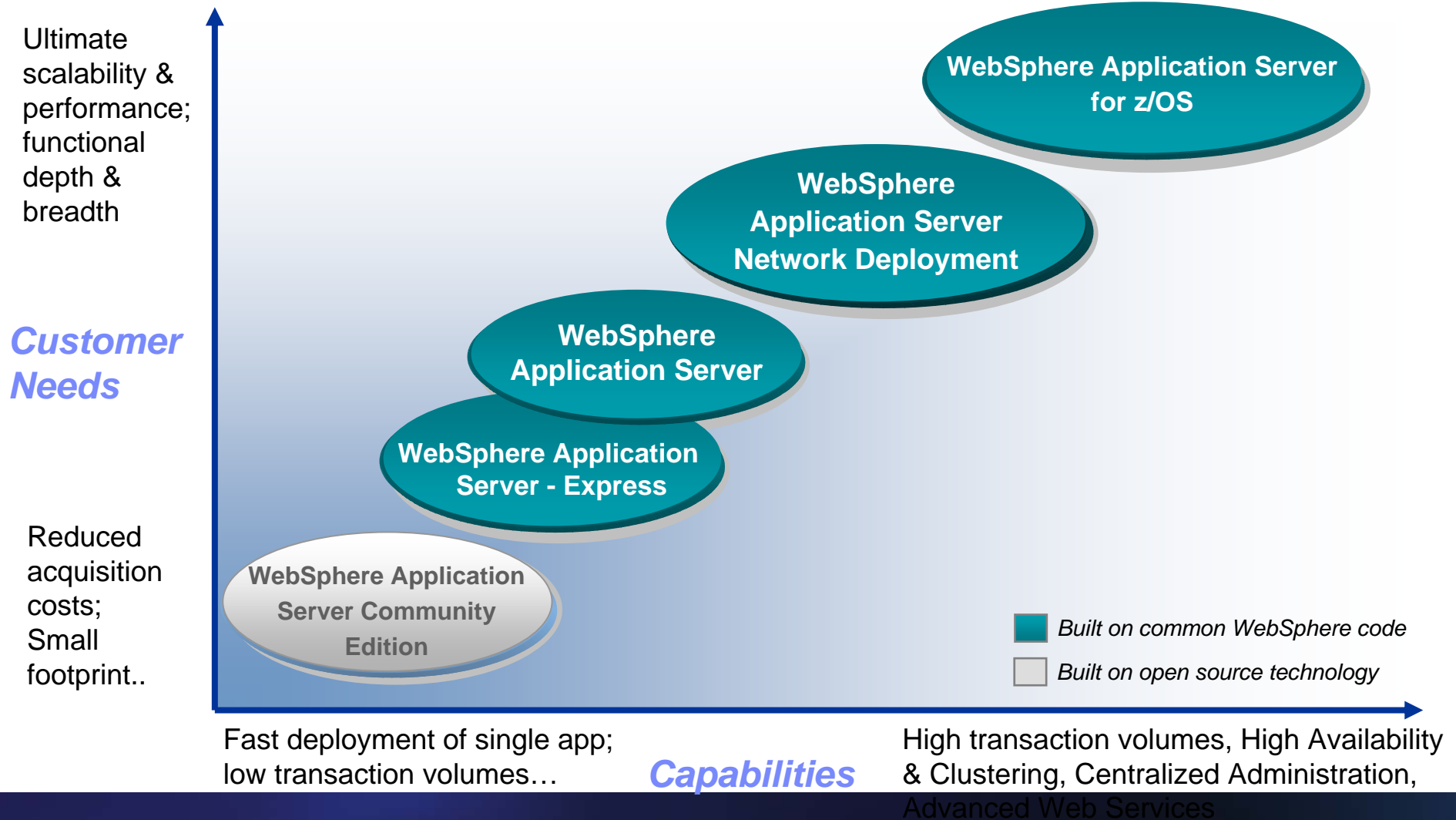
- Integrate people
- Integrate processes
- Manage and integrate information



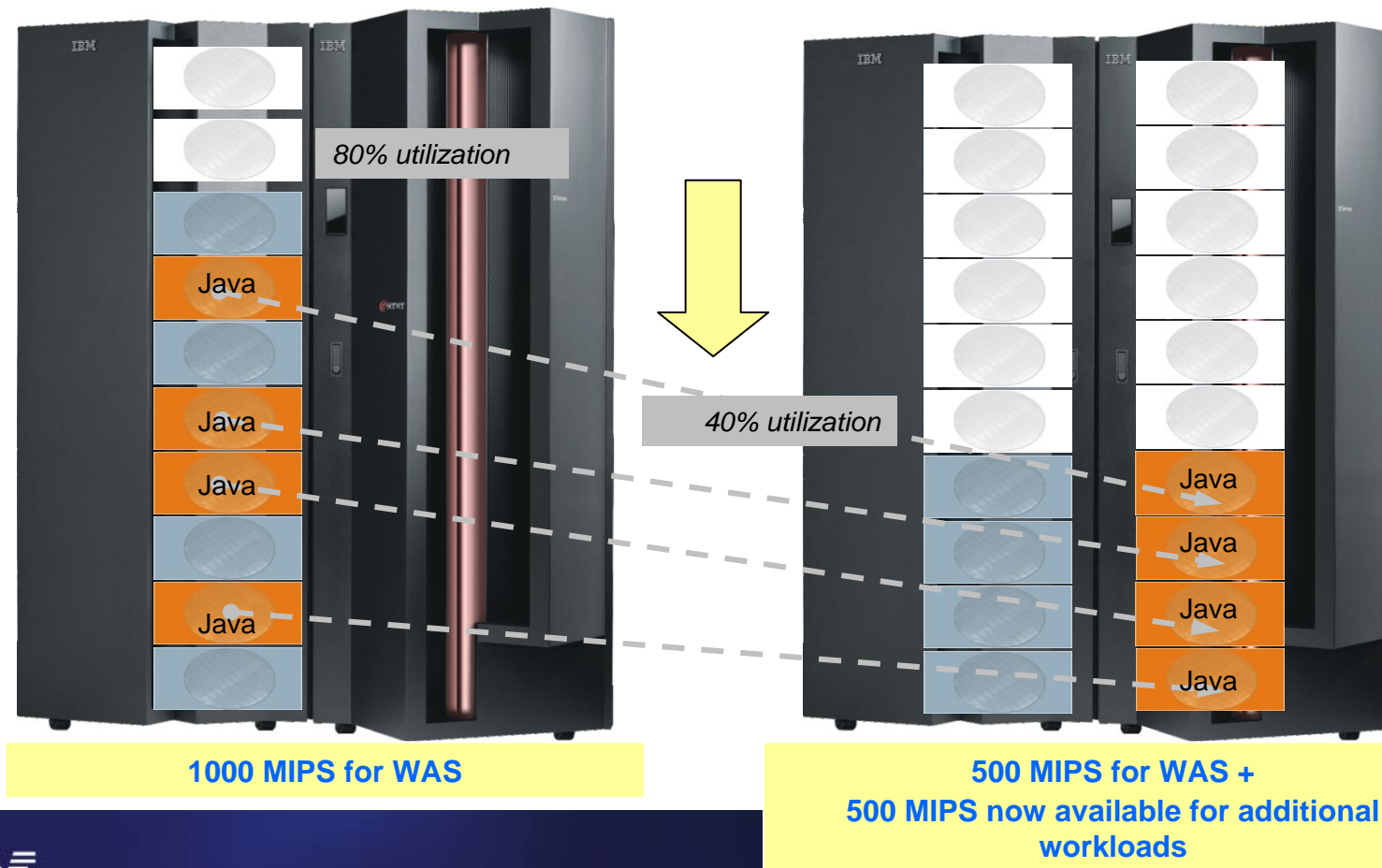
- Manage applications and services
- Manage identity and compliance
- Monitor business metrics



WebSphere Application Server Family

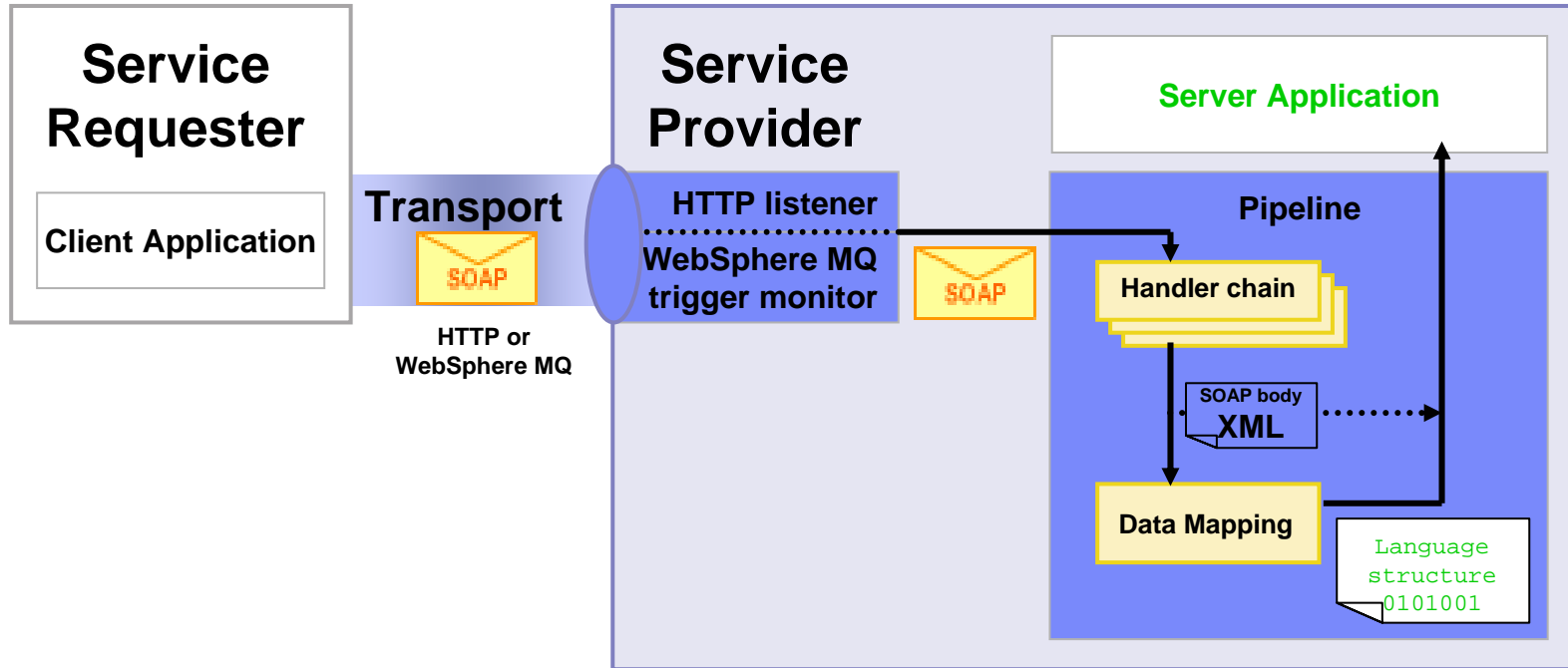


WAS for z/OS – featuring zAAP Processors



CICS as a Web service provider

CICS TS V3.1



Dynamic install

1. Develop

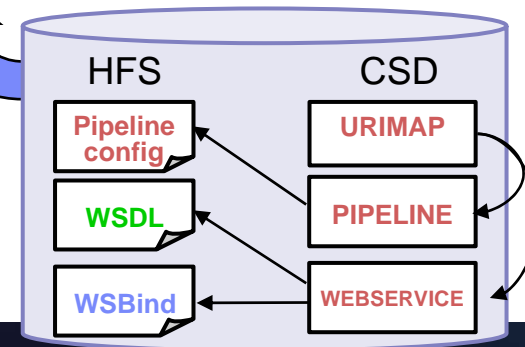
- WSDL
- or
- Language structure
- Server Application

2. Generate

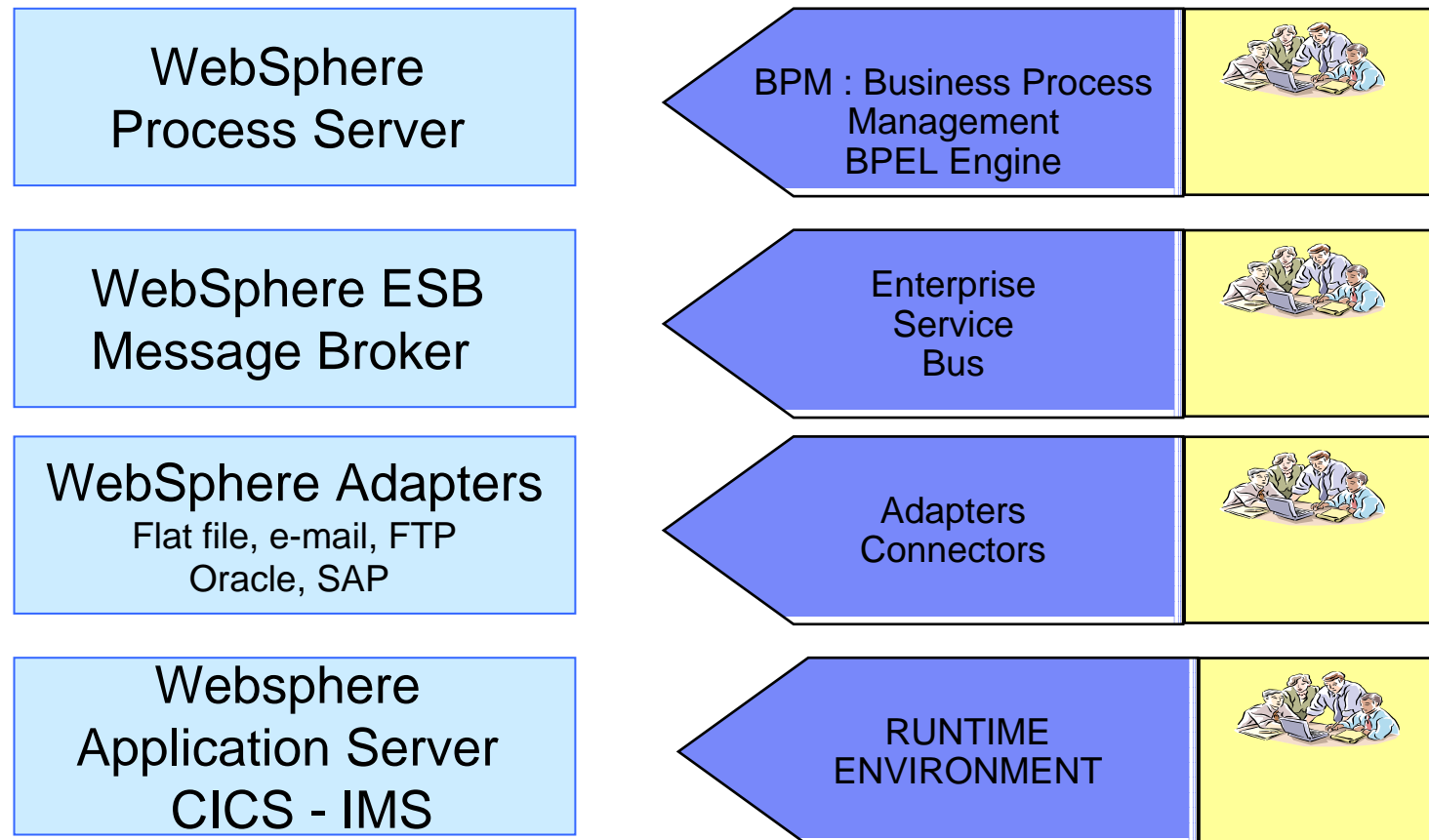
- Language structure
- or
- WSDL
- WSBIND

3. Configure

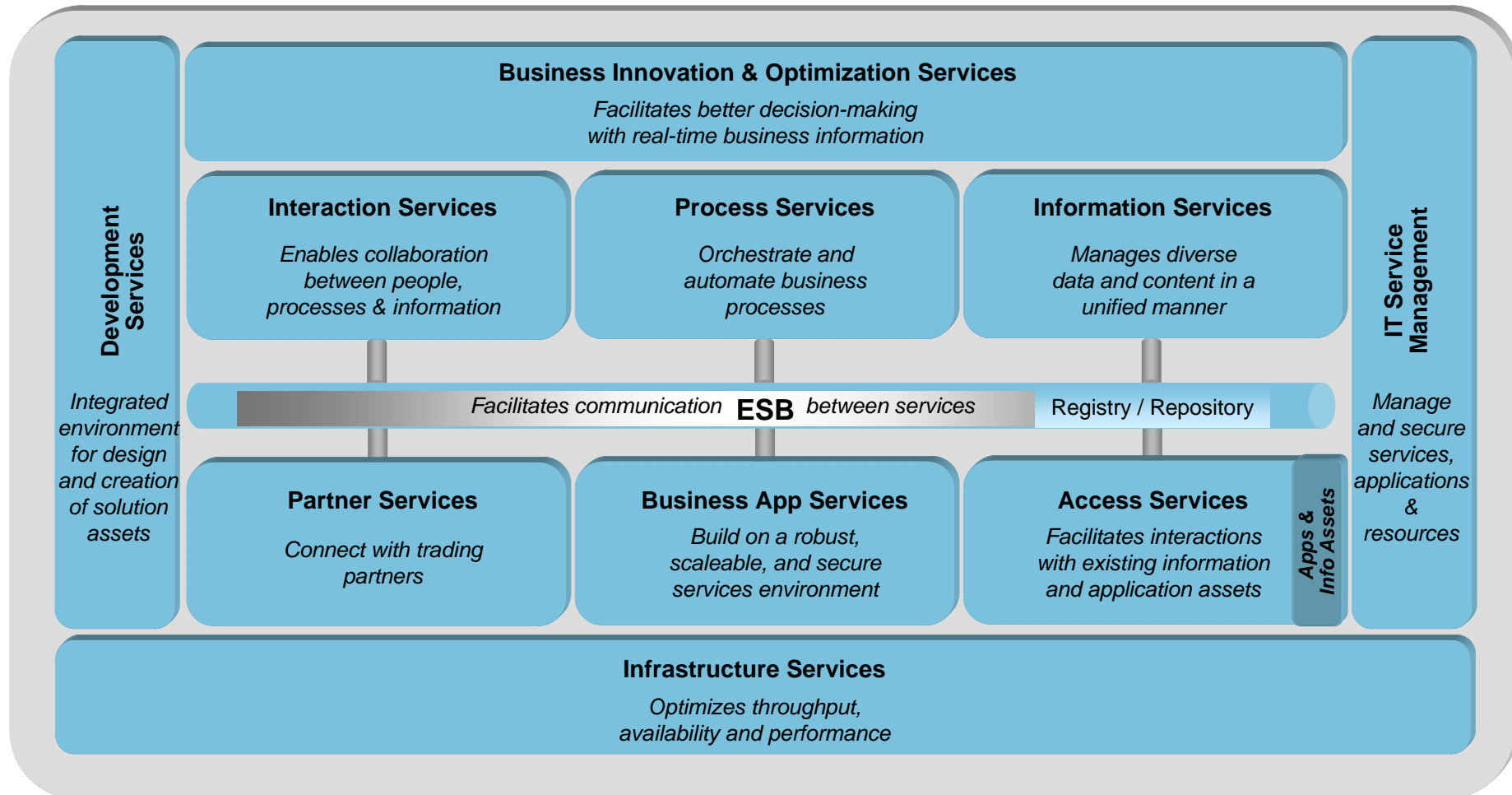
- TCPIPService or WebSphereMQ
- URIMAP
- WEBSERVICE
- PIPELINE
- Pipeline configuration



SOA Suite on zSeries

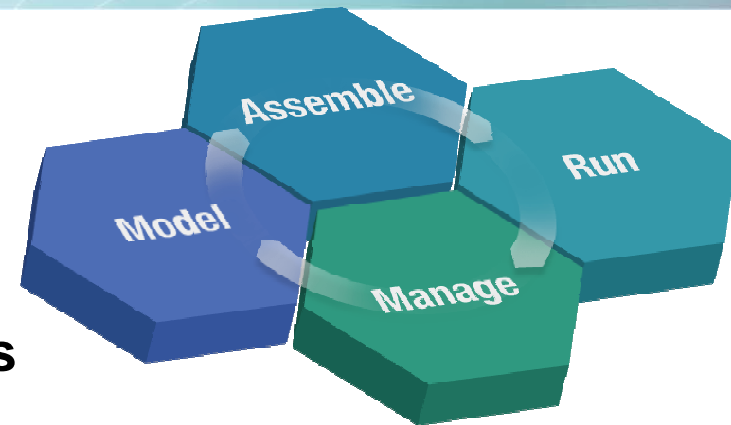


The SOA Reference Architecture



■ Leverage z/Middleware for maximum business flexibility.

Why SOA on “z” ?



High availability for critical components

- Application Server
- Enterprise Services Bus
- Process Server

Highest security capabilities

Centralized management

Easier integration of core business assets





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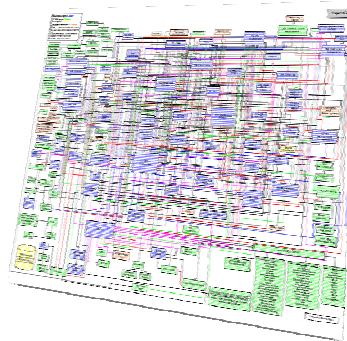
3 Enterprise Transformation and Tools strategy

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SOA: the next step on the evolution of enterprise integration

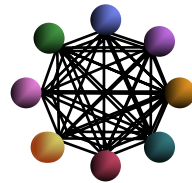
Integration and choreography of services through an Enterprise Service Bus



Direct Connectivity



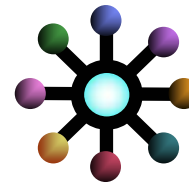
Point-to-Point connection between applications



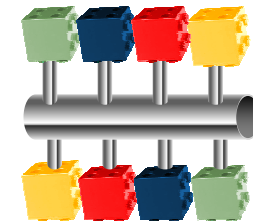
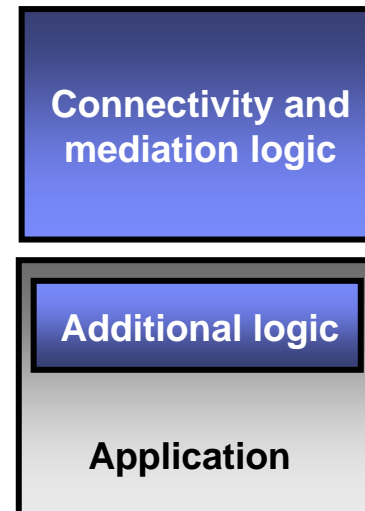
Message Queuing



Applications via a centralized hub



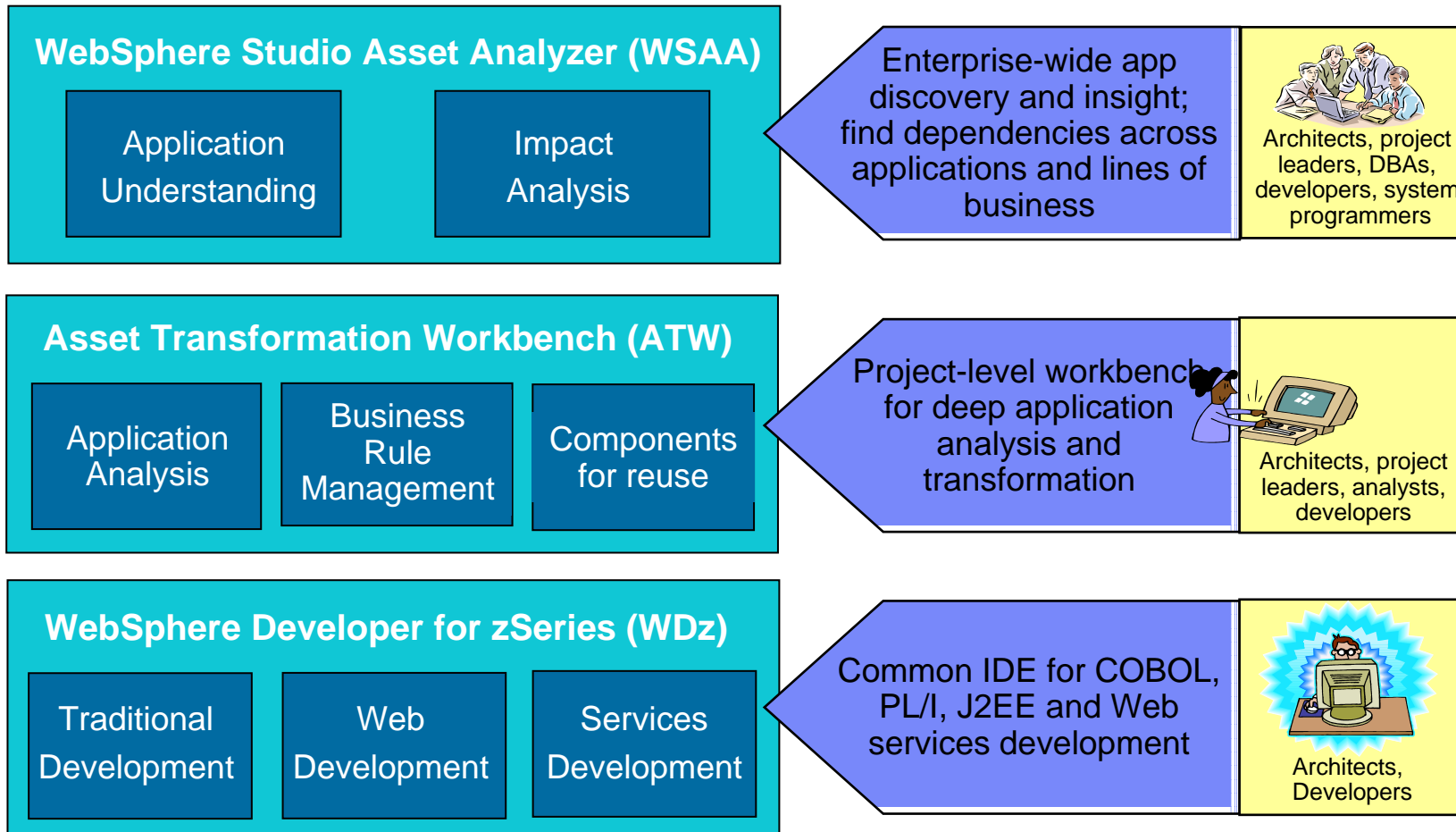
Message Brokering



Service Orientation

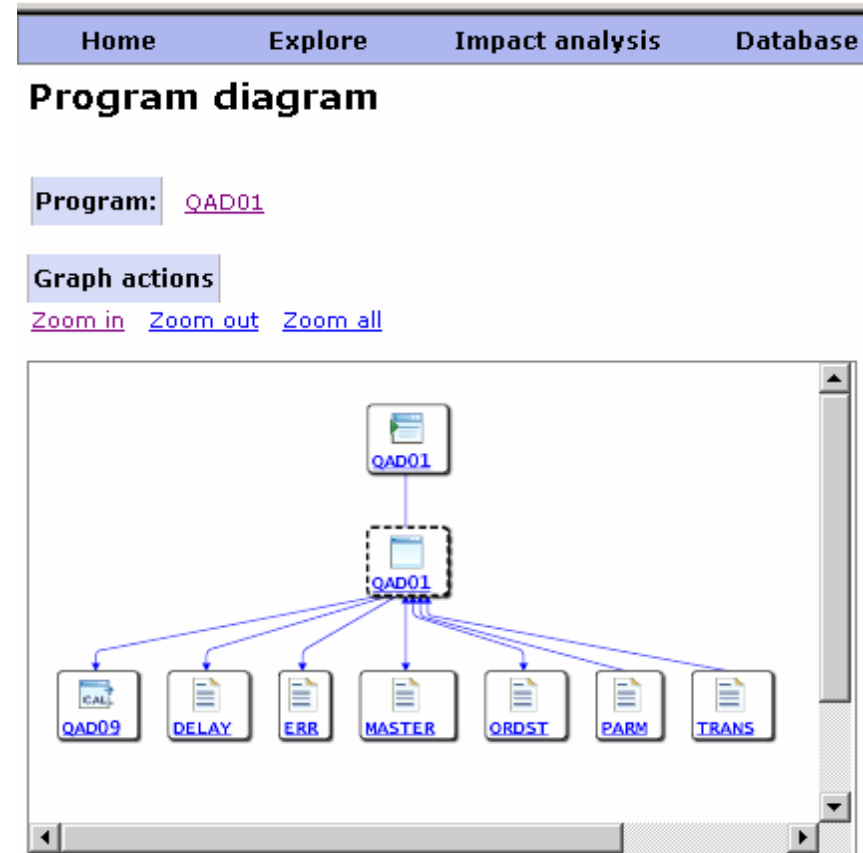
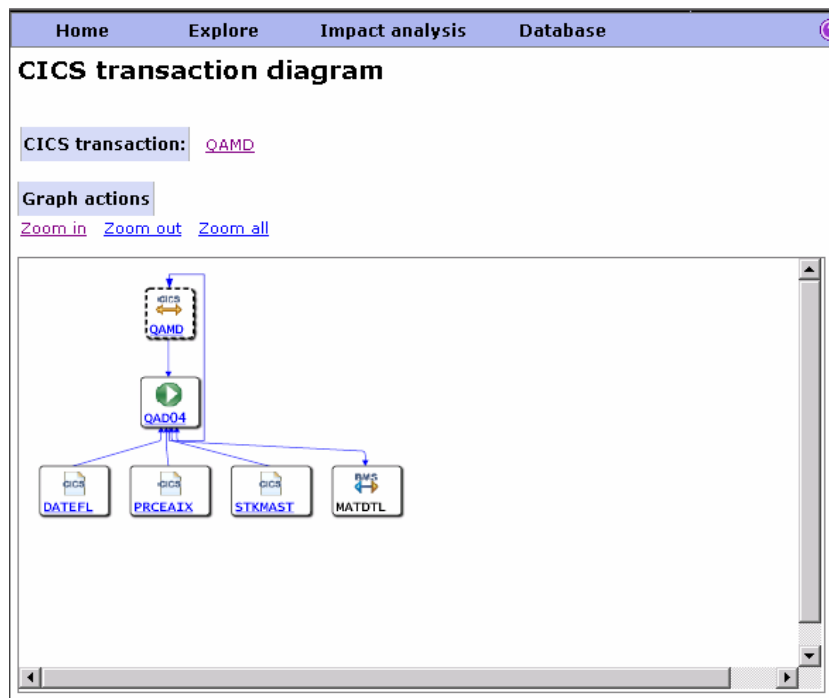


Enterprise Transformation : tools

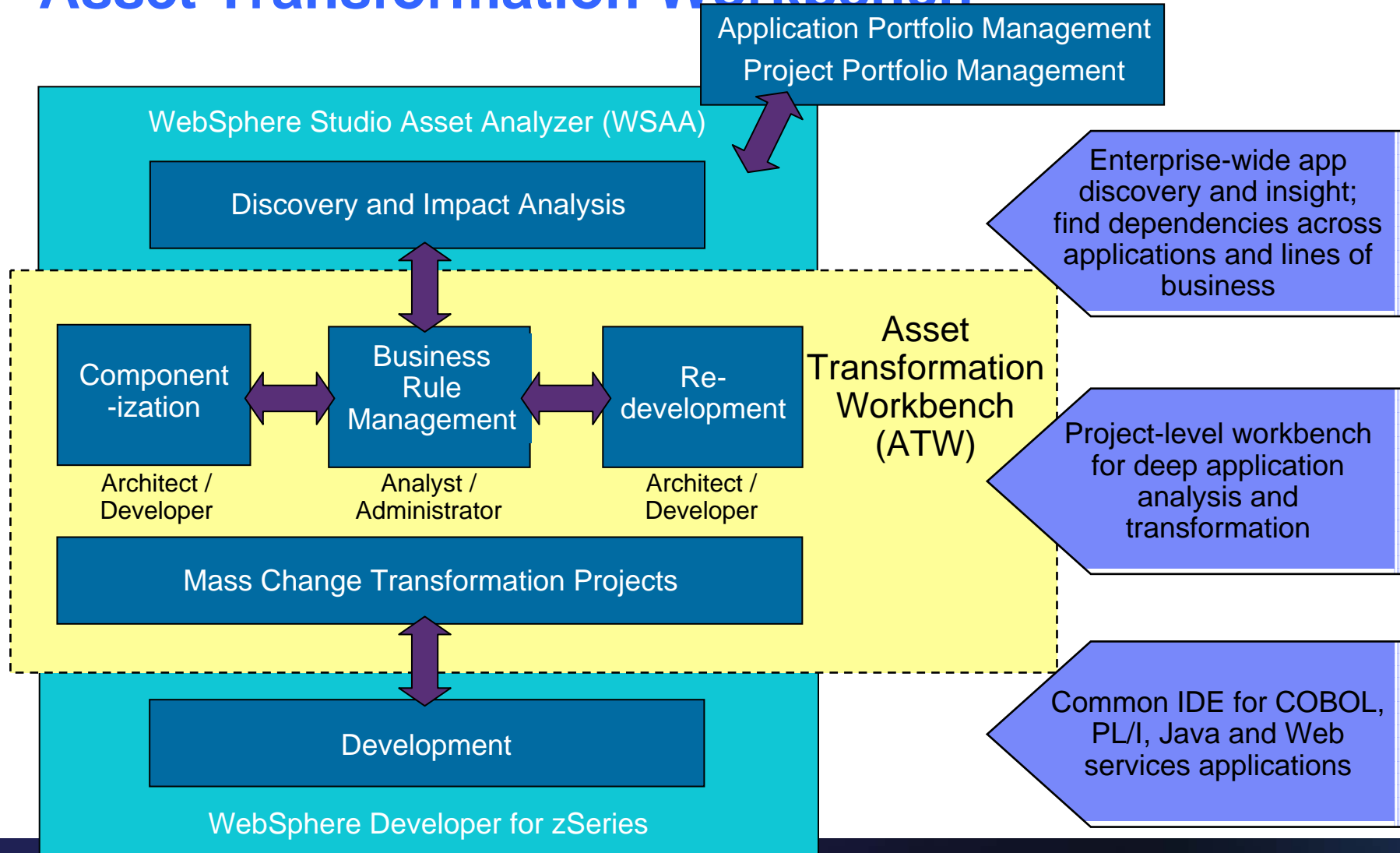


WebSphere Studio Asset Analyzer

Understand z/OS Application Structure



Asset Transformation Workbench



IBM WebSphere Developer for zSeries

Follow on to WebSphere Studio Enterprise Developer

XML Services for the Enterprise

- SOA access to CICS V3.1 and IMS V9 COBOL applications
- Bottom-up or meet-in-the-middle COBOL to XML mapping support
- Integrated COBOL XML converters, XML schemas, and WSDL generation

DB2 Stored Procedure for COBOL and PL/I

- Create DB2 stored procedures on z/OS in either COBOL or PL/I
- Build and catalog support for the DB2 stored procedure
- Debug z/OS based stored procedures from workstation

IBM WebSphere Developer for zSeries

z/OS Application Development

XML Services for the Enterprise

BMS Map Editor

DB2 Stored Proc – COBOL / PL/I

EGL COBOL Generation

IBM Rational Application Developer

z/OS Application Development

- Connect to z/OS systems
- Work with z/OS resources like COBOL programs, JCL, etc.
- Interact with the Job Entry Subsystem (JES) to submit jobs, monitor jobs, and review job output
- Perform dataset management actions like allocating datasets and migrating datasets
- Perform typical edit, compile, and debug tasks on remote z/OS resources from the workstation

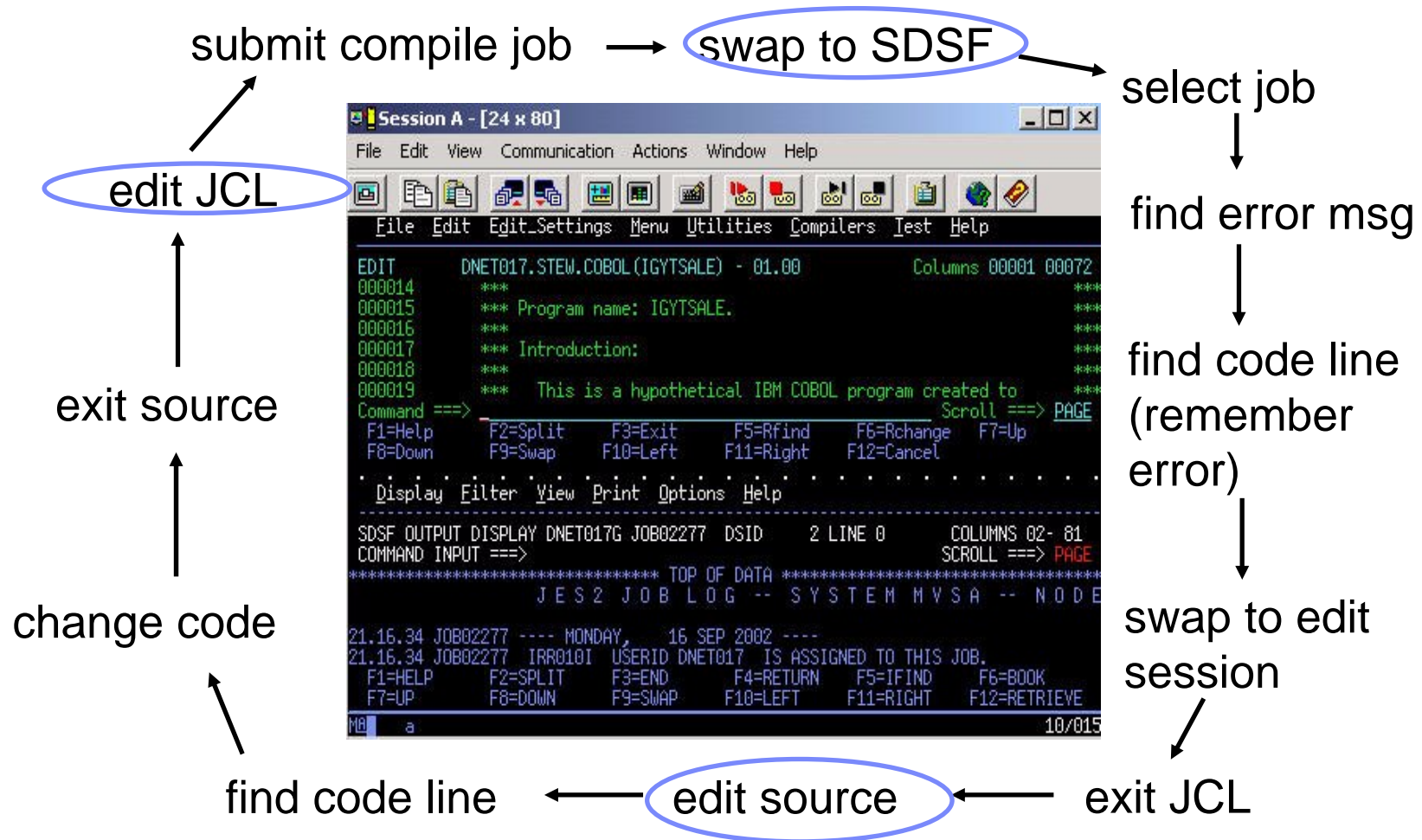
BMS Map Editor

- Visually create and modify BMS Map sets
- Work with local or remote maps

EGL COBOL Generation

- Deploy EGL applications to zSeries CICS or batch environments
- Connectivity to CICS through JCA
- JSF UI components integrated with CICS services

ISPF based Development



WebSphere Development

edit source

The screenshot displays the WebSphere Development environment. On the left, a project browser shows a tree structure for 'stew-demonvms.DNE' containing folders like 'STEW.COBL' and files like 'DFHOACTD', 'DFHOCSTD', 'IGYIVP.cbl', and 'IGYTSALE.c'. Below this is an 'Outline' view showing a COBOL structure with sections like 'IDENTIFICATION DIVISION', 'ENVIRONMENT DIVISION', and 'DATA DIVISION'. The main editor window shows COBOL source code for 'IGYIVP.cbl'. A blue box highlights a line of code: 'DSPLY "SOMETHING"'. A blue arrow points to this line with the label 'Statement in error'. Below the editor is a 'Tasks' view containing one item: 'IGYPS2072-S "DSPLY" was invalid. Ski...'. A blue arrow points to this error entry with the label 'Error list in Tasks view'. A large black oval encircles the editor and tasks views, with a blue arrow pointing to it from the label 'Syntax Check'. Another blue arrow points from the label 'Outline view presents COBOL structure' to the Outline view. At the bottom of the oval, the text 'double click on the error' is written.

Benefit: Simplified development for COBOL and PL/I on a common development environment

zSeries : tools strategy

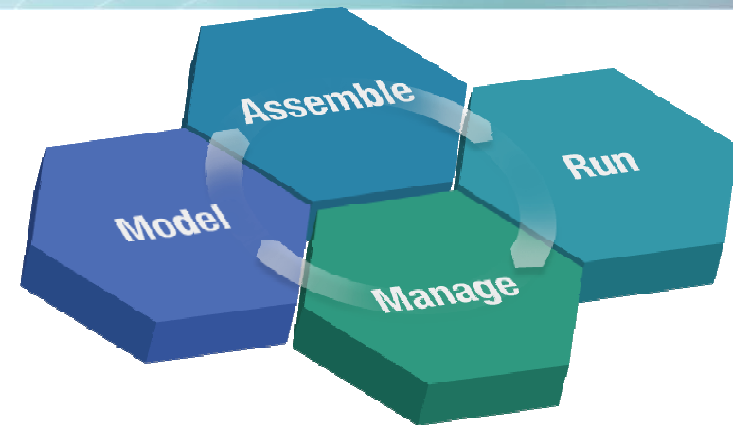
An important offering

Improve Mainframe QOS

Help customer to manage application problem

Help system programmer to manage operation problems

Help to reduce TCO



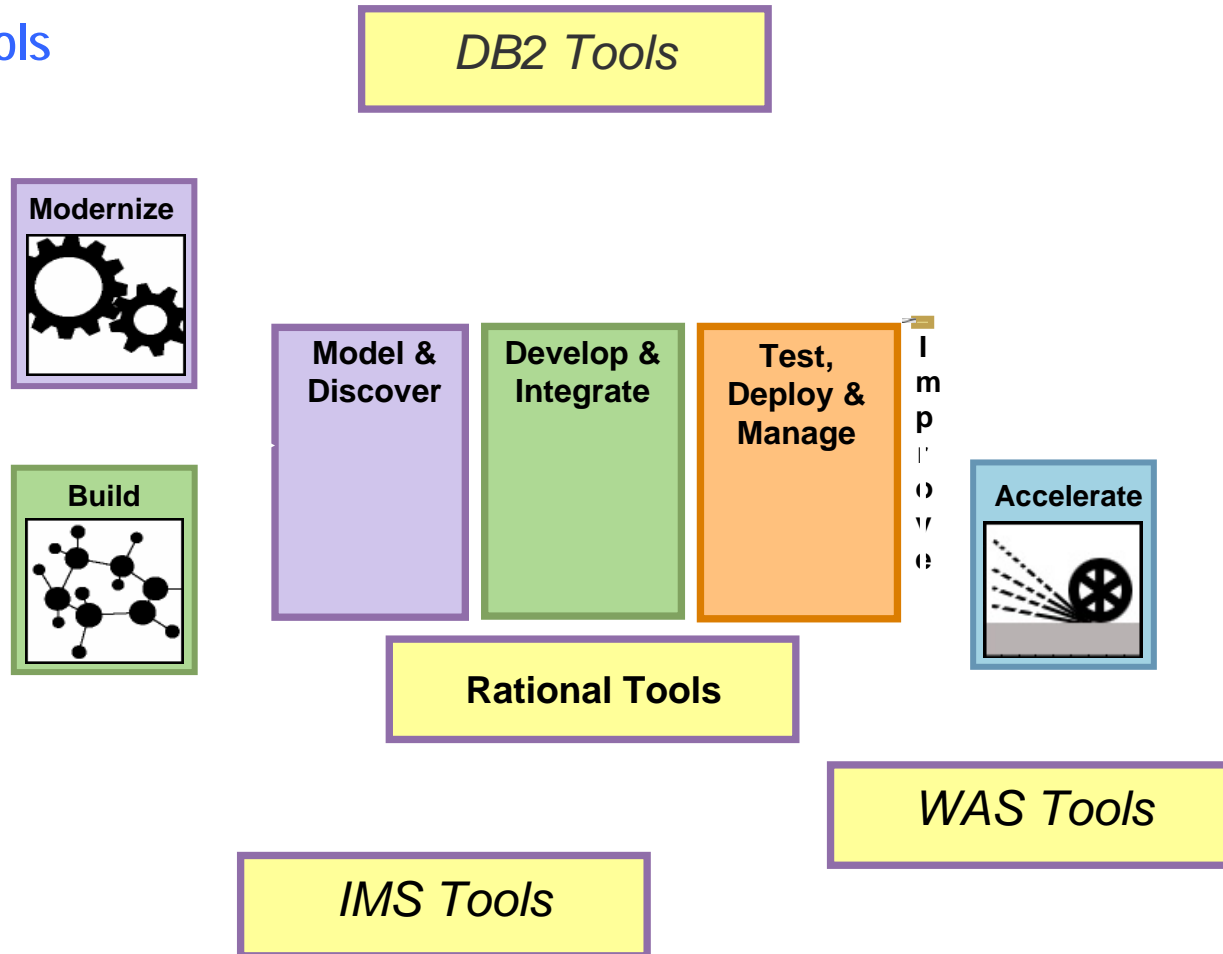
zSeries tools strategy

Problem Determination Tools

- File Manager
- Fault Analyzer
- Debug Tool
- Debug Tool Utilities
- IBM Application Performance Analyzer
- IBM Workload Simulator

CICS Tools

- CICS Interdependency Analyzer
- CICS Performance Analyzer
- CICS Business Event Publisher
- CICS VSAM Transparency
- CICS Batch Application Control
- IBM Session Manager
- CICS VSAM Recovery
- CICS VSAM Copy
- CICS OTTO
- CICS Configuration Manager





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2 SOA on zSeries

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IBM System z and DB2

Where You Put Your Data Matters

Integrity

High availability

Security

Systems and database management



DB2 for Z in:

- 25 of the top 25 worldwide banks*
- 23 of the top 25 US retailers**
- 9 of the top 10 global life / health insurance providers***

DB2 V9 Technology Themes

- Enable high-volume transaction processing for next wave of Web applications**
- Extend the lead in transaction processing availability, scalability and performance**
- Reduce cost of ownership and zSeries-specific skill needs**
- Improve data warehousing and OLTP reporting**

DB2 for z/OS v9

Addressing corporate data goals

Improved IT Infrastructure In Support of Compliance Efforts

- Trusted security context
- Database roles
- Auditing capabilities
- Encryption improved

Simplify development and porting

- Many SQL improvements that simplify porting
- **Native SQL stored procedures**
- Default databases and table spaces
- Automatic unique indexes to support primary keys

Decrease Complexity and Cost

- Fast table replacement
- Partition by growth
- Table append
- **Volume-based COPY/RECOVER**
- Optimization Service Center

Evolve Your Environment & SOA

- **Integrated XML**
- WebSphere® integration

DB2 V8 and V9 exploitation of zIIP




ERP or CRM application serving*


Data warehousing applications*

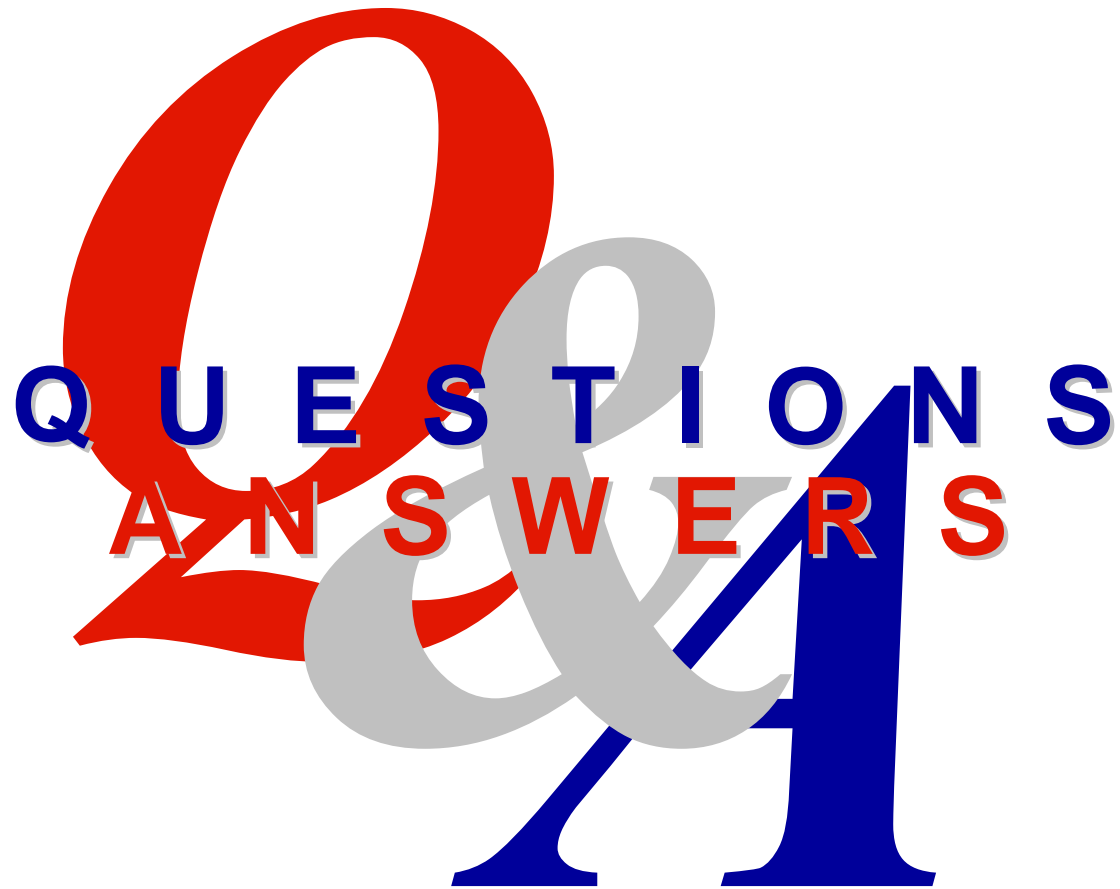
Some DB2 for z/OS V8 utilities*

Conclusion



The platform of choice for the core business applications in the Enterprise

- The Security server
 - The Data & Transaction Server
 - The Availability Server
 - The Workload and Resources Manager
 - The SOA Server
- 



Thanks for listening