



WebSphere Application Development Update

John Casey
IBM WW Technical Sales

WebSphere software

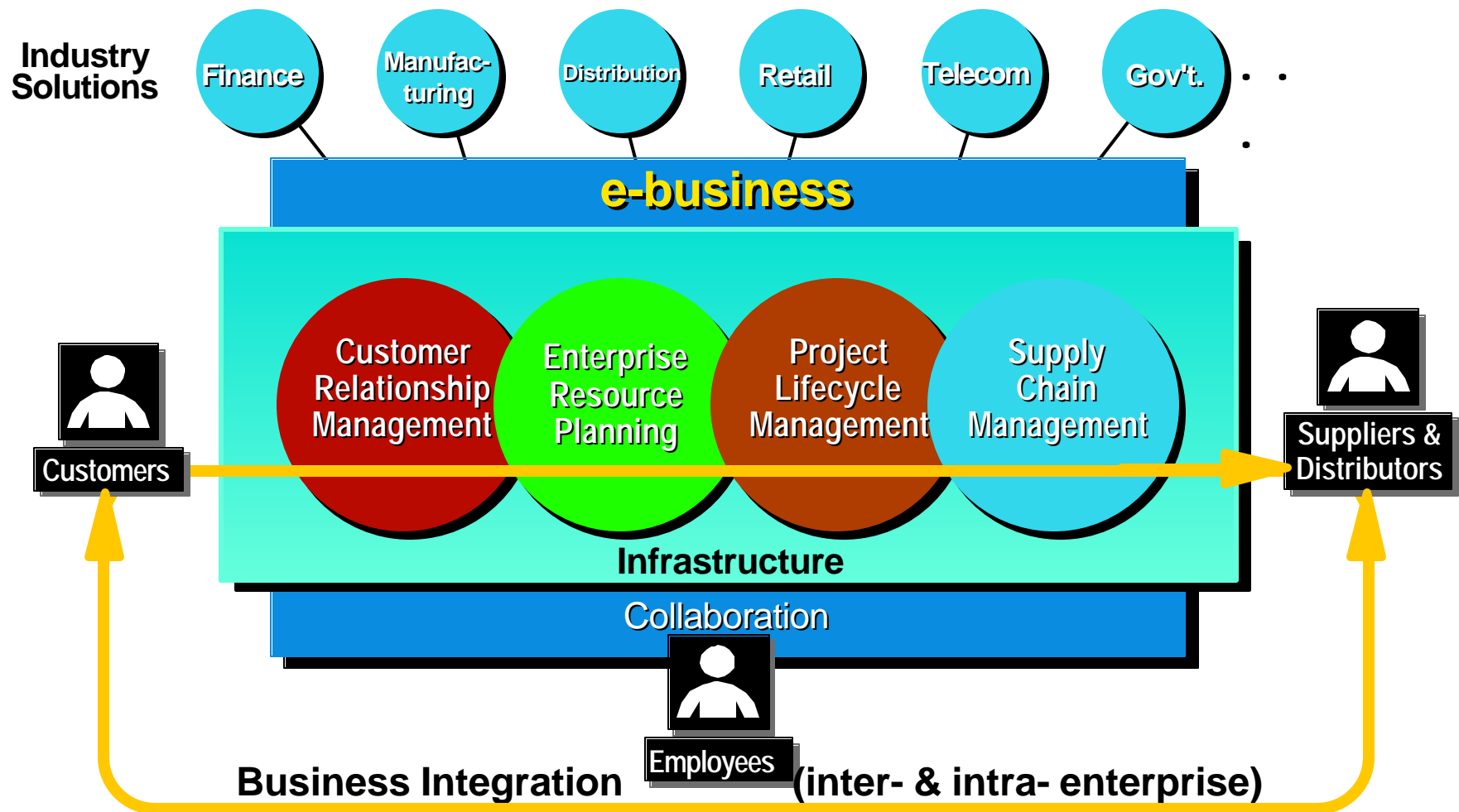
■ **the fastest way to dynamic e-business** ■

Outline

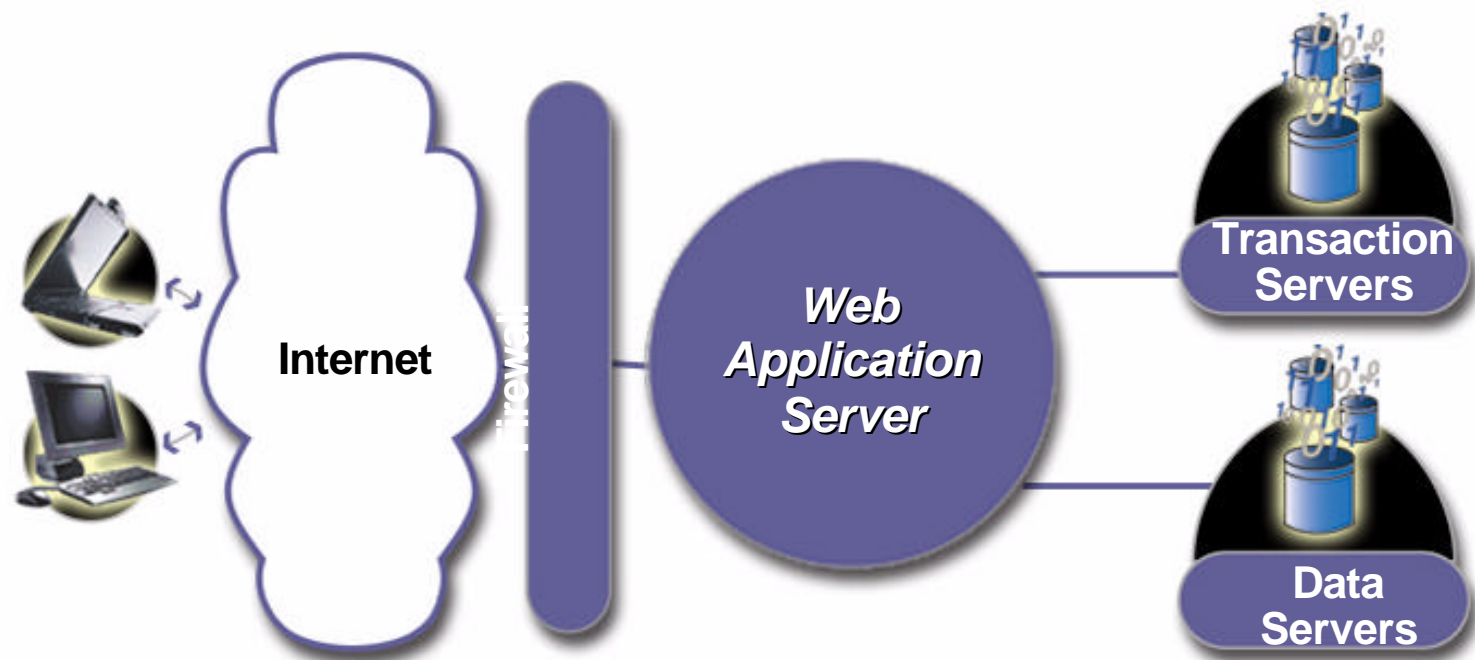
- **e-business adoption**
- **WebSphere™ software platform: whirlwind tour**
- **Application development tools - next generation**
 - ▶ **Challenge => Response**
 - ▶ **Workbench tool integration platform**
 - ▶ **New family of tool products from IBM and partners, including...**
 - ▶ **WebSphere Studio Application Developer: Building J2EE application end-to-end**
 - ▶ **Demonstration**
- **Summary**

What is an e-business

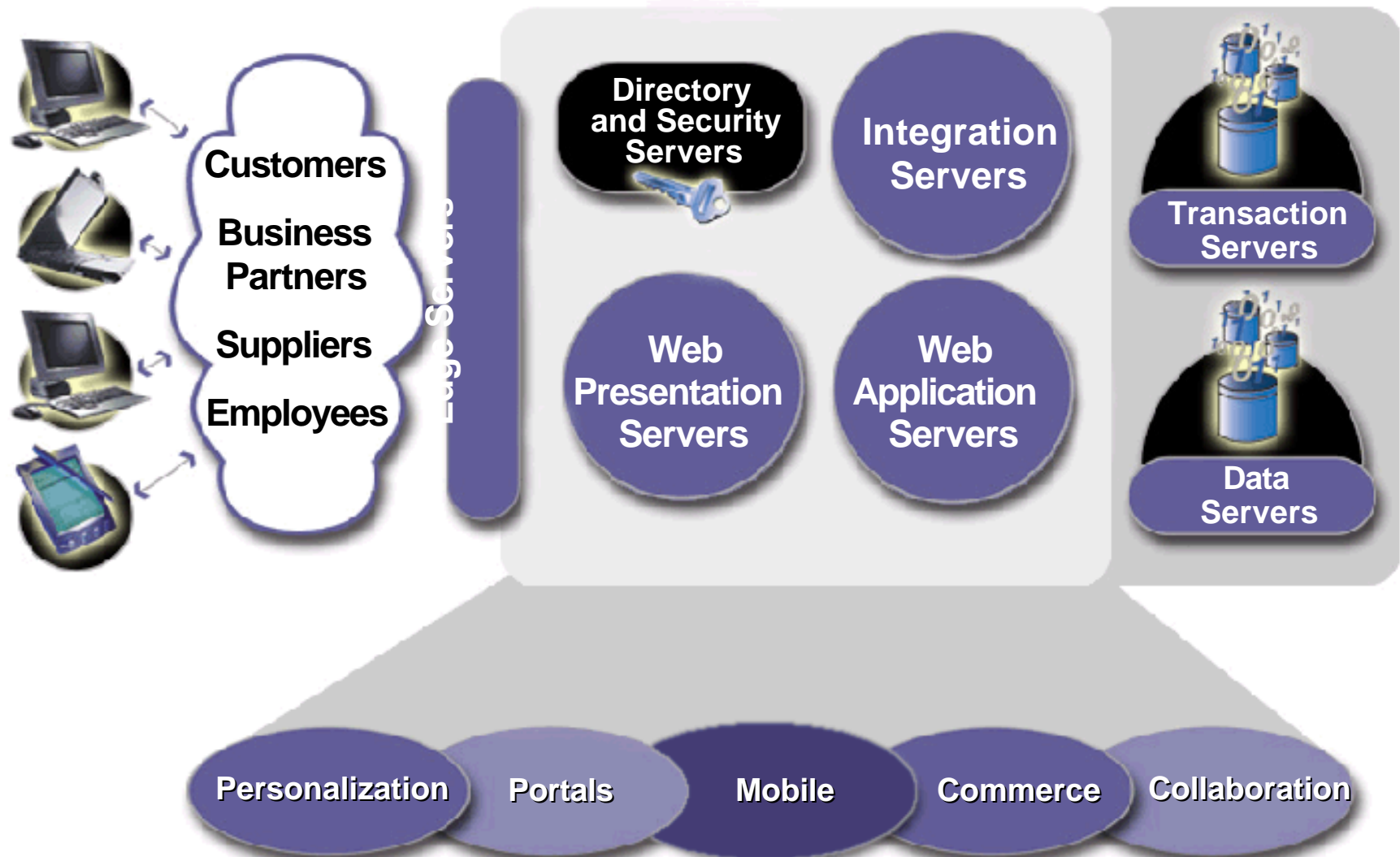
- Fully Optimized
- Integrated Demand to Deliver



e-business Adoption - Technology Requirements changing from Web Application Server...



e-business Adoption - ... To full e-business Infrastructure



IBM's WebSphere Software Platform

- BtoB Integration
- Collaborative e-business
- Commerce

- Personalization
- Mobile Internet
- Portal / Content

- Edge Services
- Life Cycle
- Policy Security

Customer and Partner Applications

Application Accelerators

- Integration Servers
- Business Process Management
- EAI

Development

Providing the ultimate Web development environment

Presentation

Managing the e-business customer experience

Deployment

Maximizing e-business performance

Integration

Integrating your e-business inside

- Roles-based
- Homepage Builder
- WebSphere Studio
- VisualAge® for Java
- VisualAge Generator

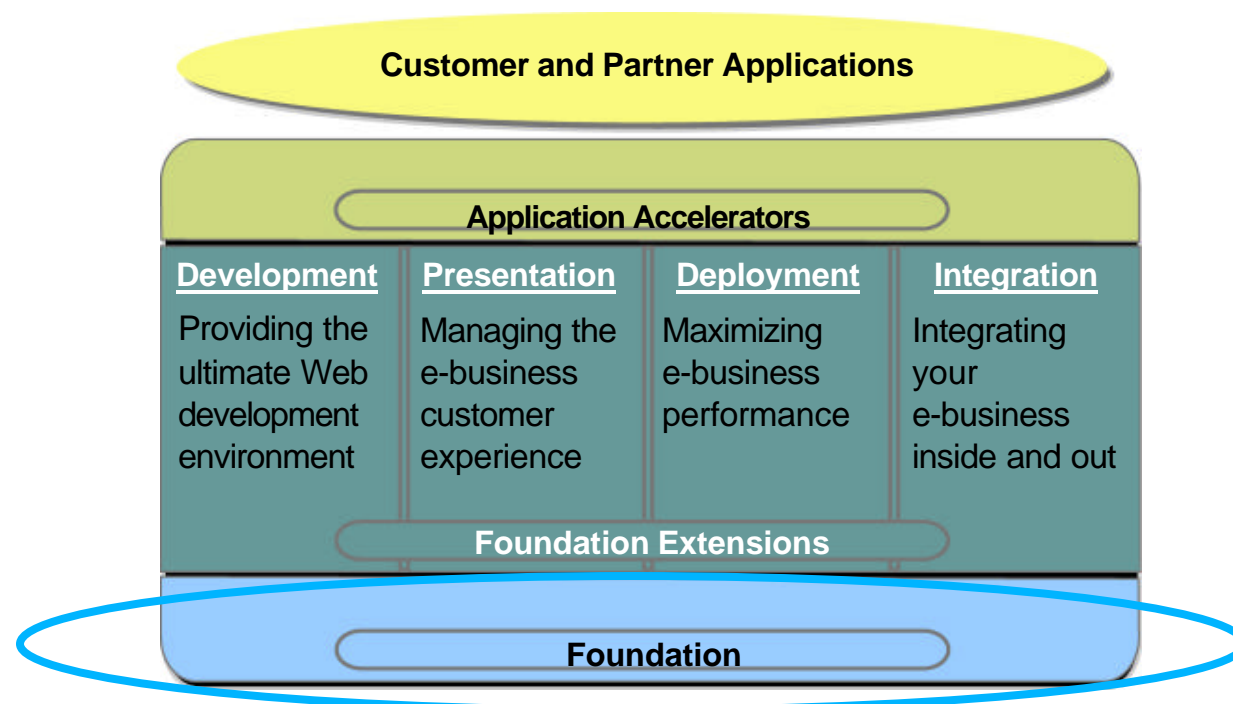
- Application Servers

Foundation Extensions

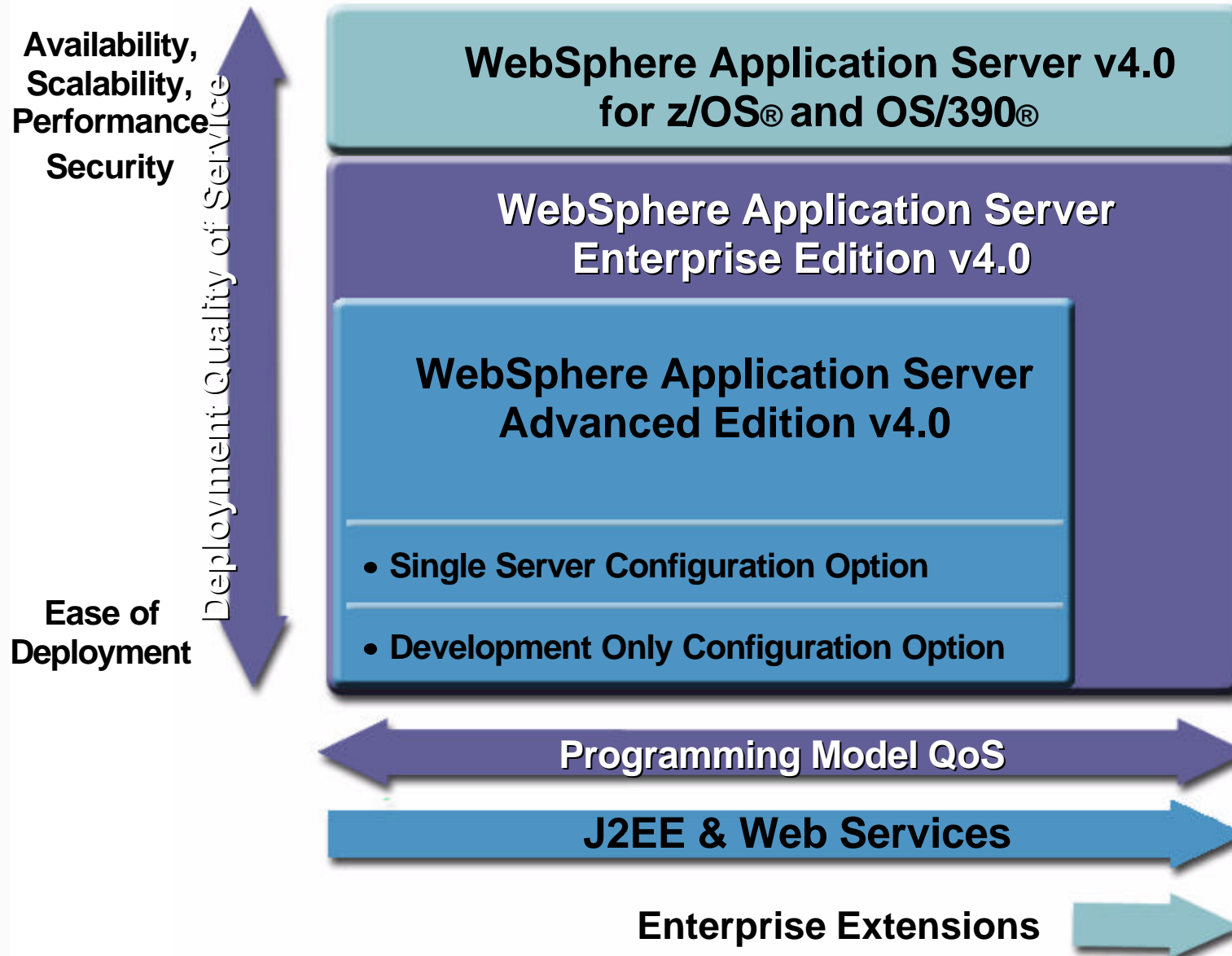
Foundation

The complete solution to build, run and manage e-business applications

WebSphere Software Platform: Foundation

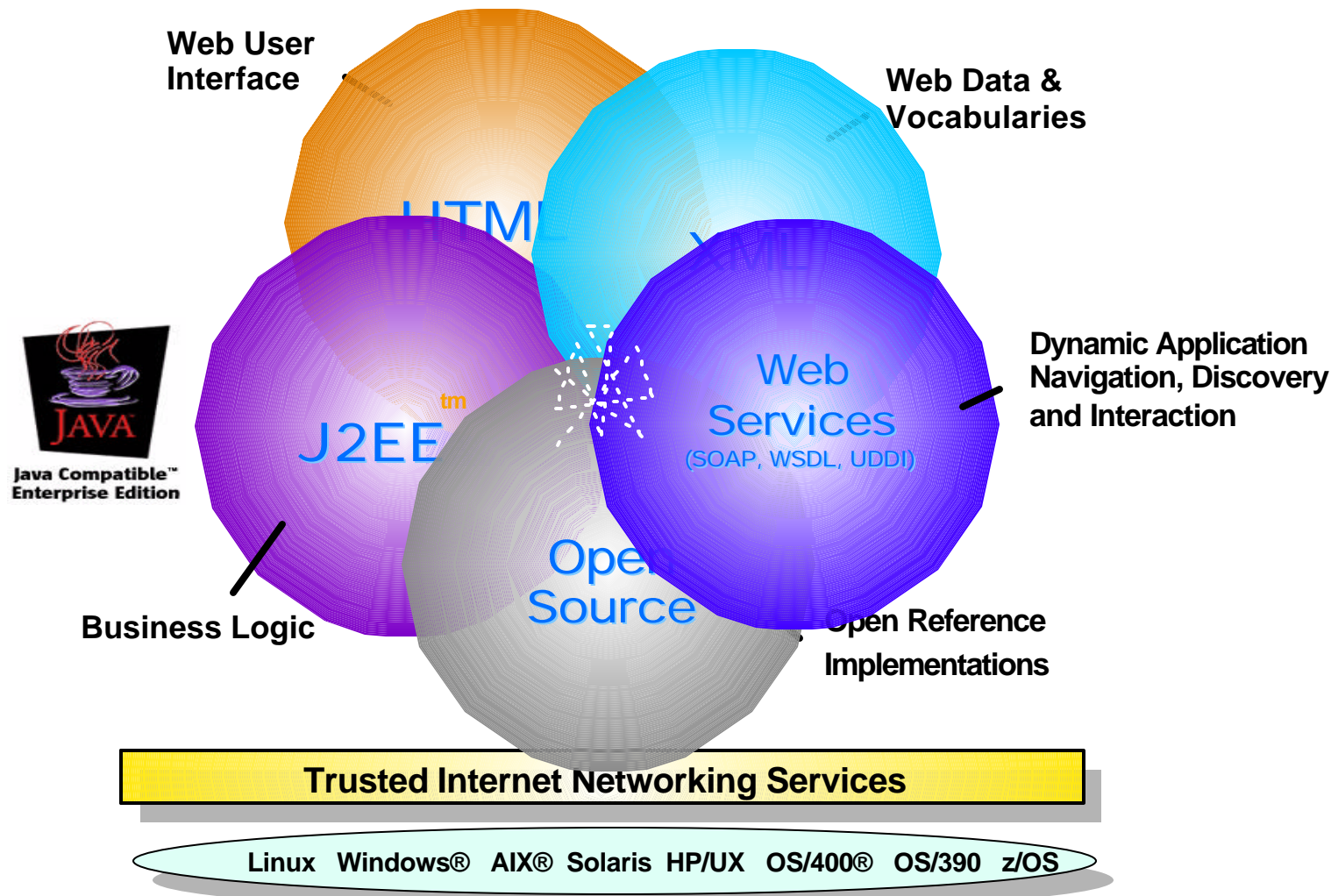


WebSphere Application Server v4.0



Open Standards Platform

Unparalleled Depth and Breadth

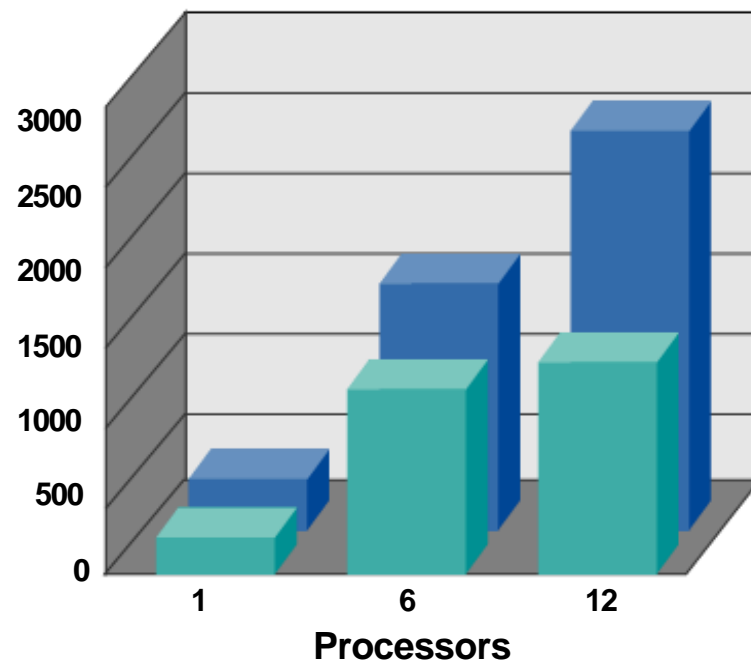


Performance and Scaleability

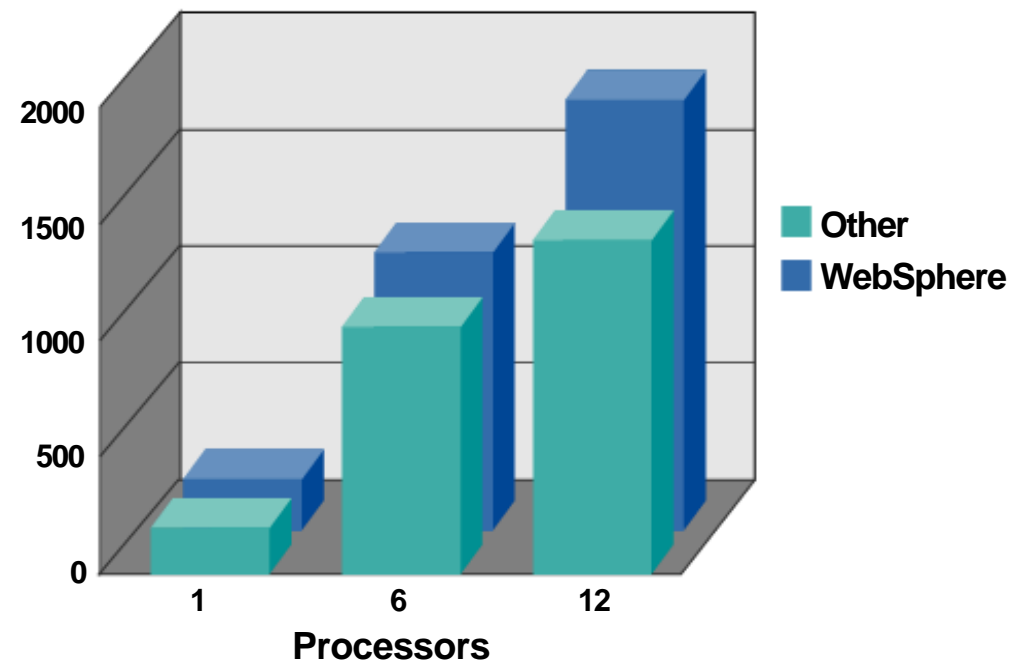
IBM Performance Benchmark Application (freely available on Web)

<http://www6.software.ibm.com/dl/websphere27/benchmark-p>

JDBC dynamic pages/second

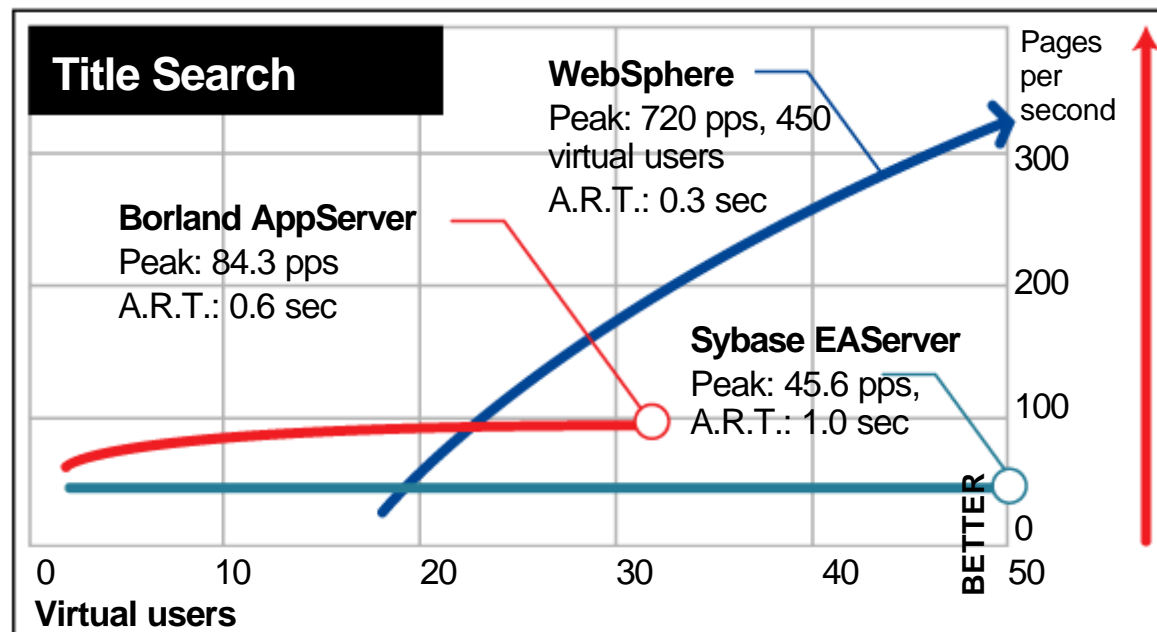


EJB dynamic pages/second



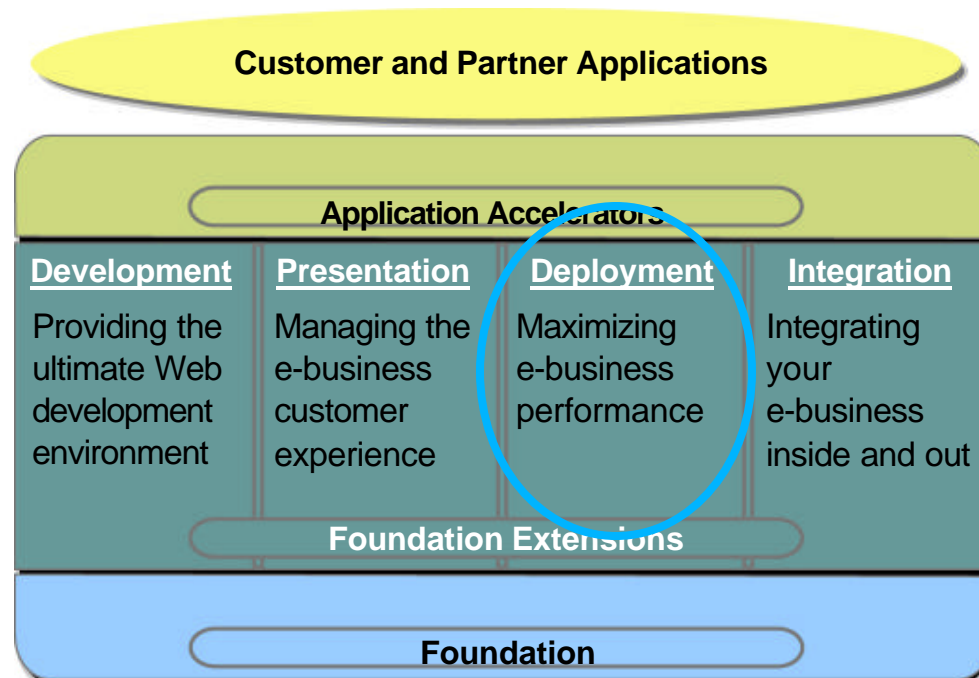
- ▶ More than double JDBC throughput per \$ of investment
- ▶ 75% greater Enterprise JavaBean™ transaction throughput per \$ of investment
- ▶ Near linear growth in scaleability performance
- ▶ Improved WebSphere Application Server V4.0 technology will drive even greater performance (15% - 200%)

WebSphere Application Server Wins PC Magazine Editors Choice



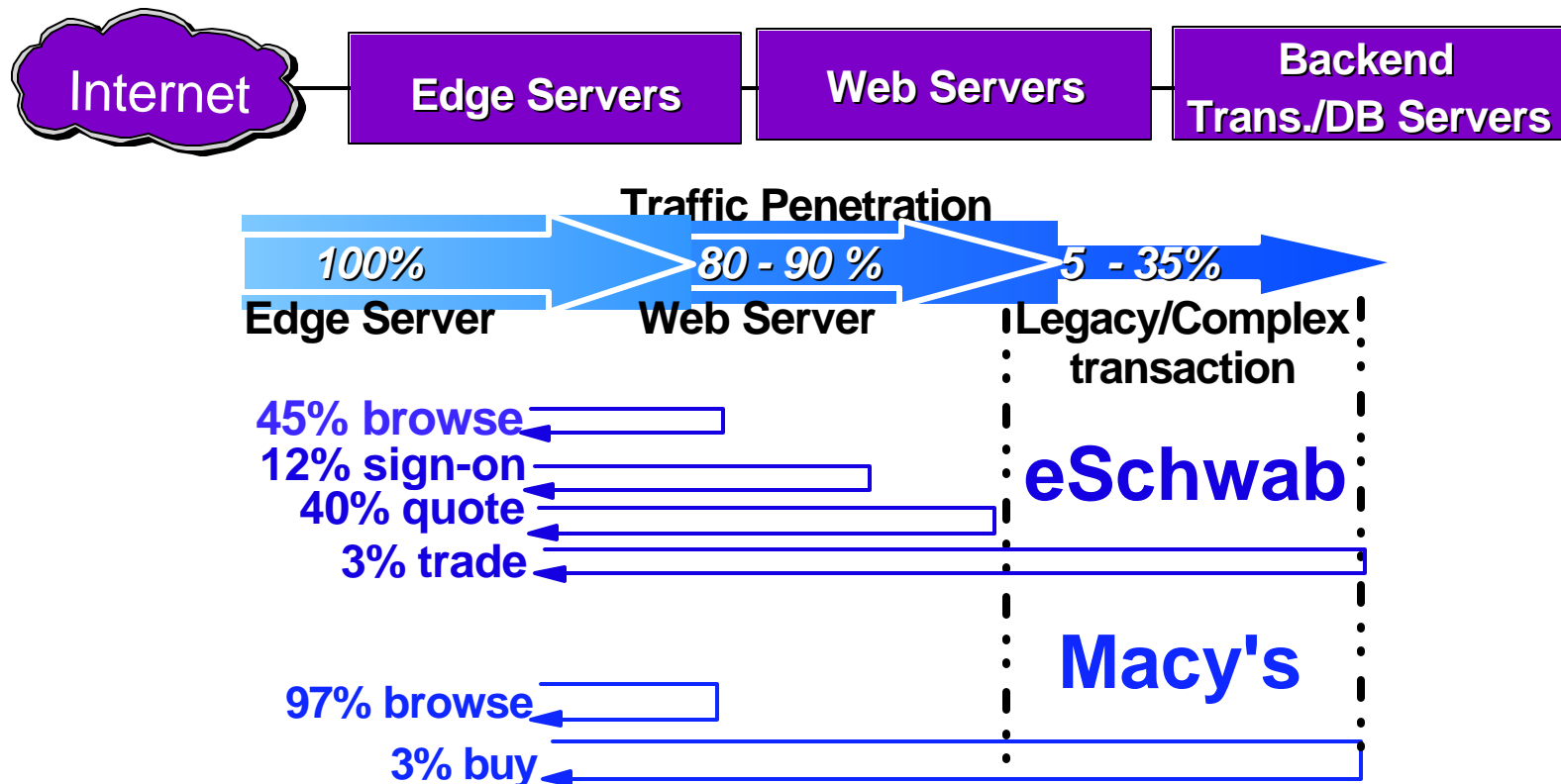
IBM's WebSphere Application Server, Advanced Edition 3.5 was by far the fastest and most scalable server on the scenario test. At its peak, it maintained 4,000 virtual users at 177 pages per second. Because of its sophisticated dynamic page-caching algorithms, WebSphere was also the clear winner on the title search test. It also had the best A.R.T. at peak performance on nearly all of the tests.

WebSphere Software Platform: Deploy



Mass Applications

- ▶ The Internet usage can be characterized as a mass application. It consists of massive numbers of small independent actions, each having low compute requirements, high communication needs, and potentially high data storage requirements.
- ▶ The cost, scale, and access to the mass application servers is similar to the other utilities, e.g. phone, radio, and TV.



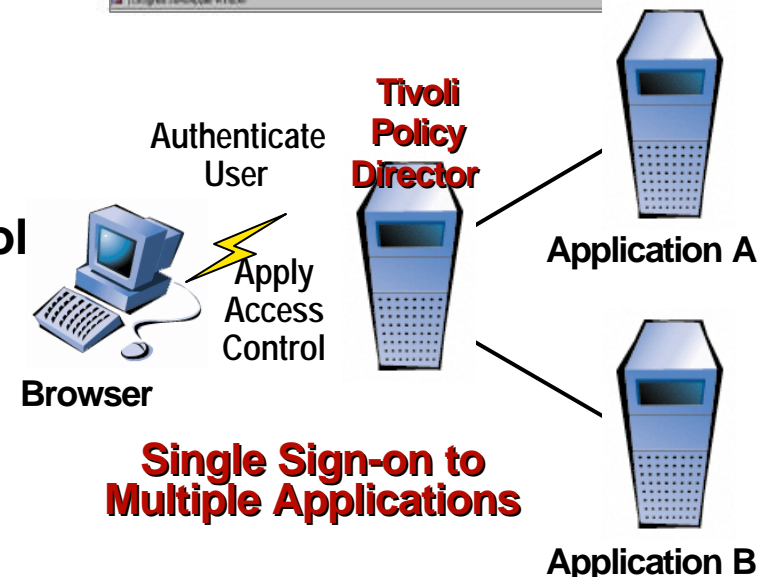
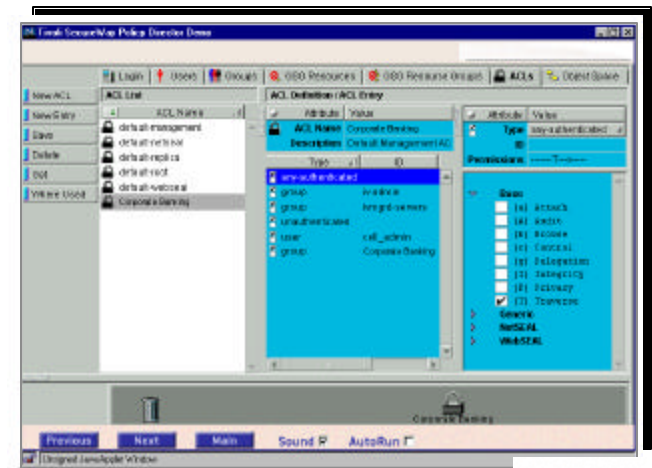
Tivoli® Policy Director



Provides access control management that centralizes network and application security policy

■ Tivoli Policy Director:

- provides access control to Web applications, based on a consistent security policy,
- adds centralized security to existing Web and TCP/IP applications,
- provides single sign-on to multiple Web-based applications,
- provides access control to applications and data accessed through Wireless Application Protocol (WAP), and
- uses public key infrastructure (PKI)-based authentication to access existing Web-based applications, without rewriting or modifying them



Tivoli Manager for WebSphere

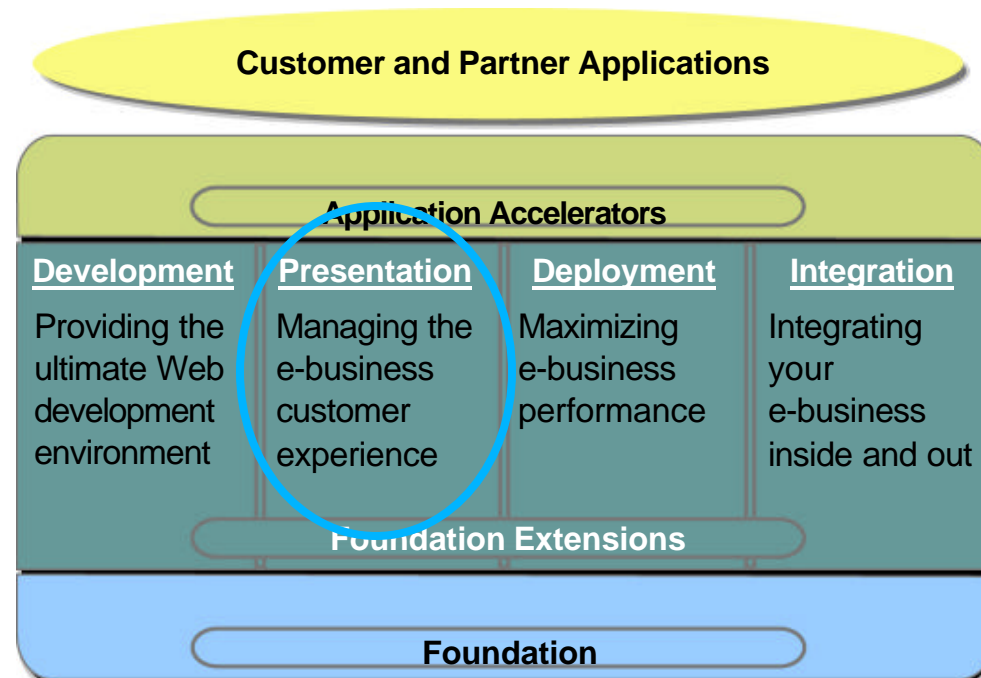


- Ensures availability and high-performance in a distributed WebSphere environment, providing:

- ▶ Centralized administration with operational tasks
 - Framework for future JMX support
- ▶ Increased system availability with distributed monitoring
- ▶ Event management through Tivoli Enterprise Console
- ▶ Tivoli Business Systems Manager (TBSM)



WebSphere Software Platform: The User Experience

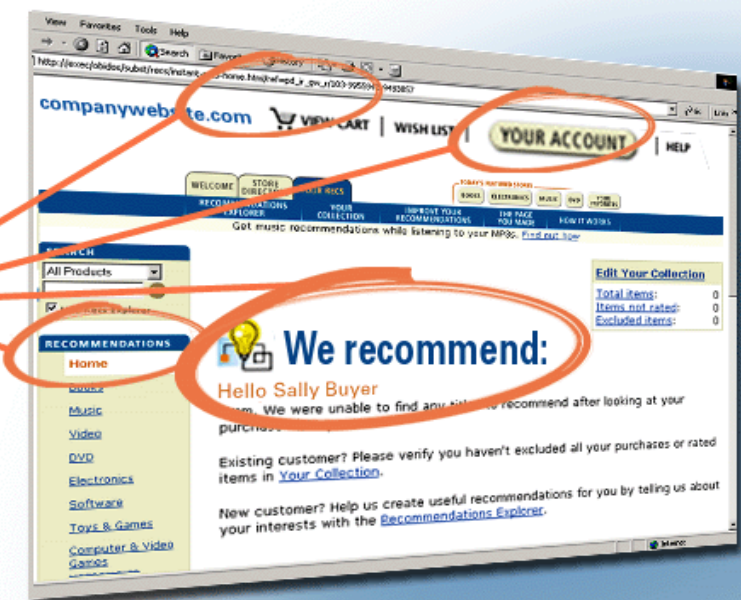


Portals for a Dynamic User Experience

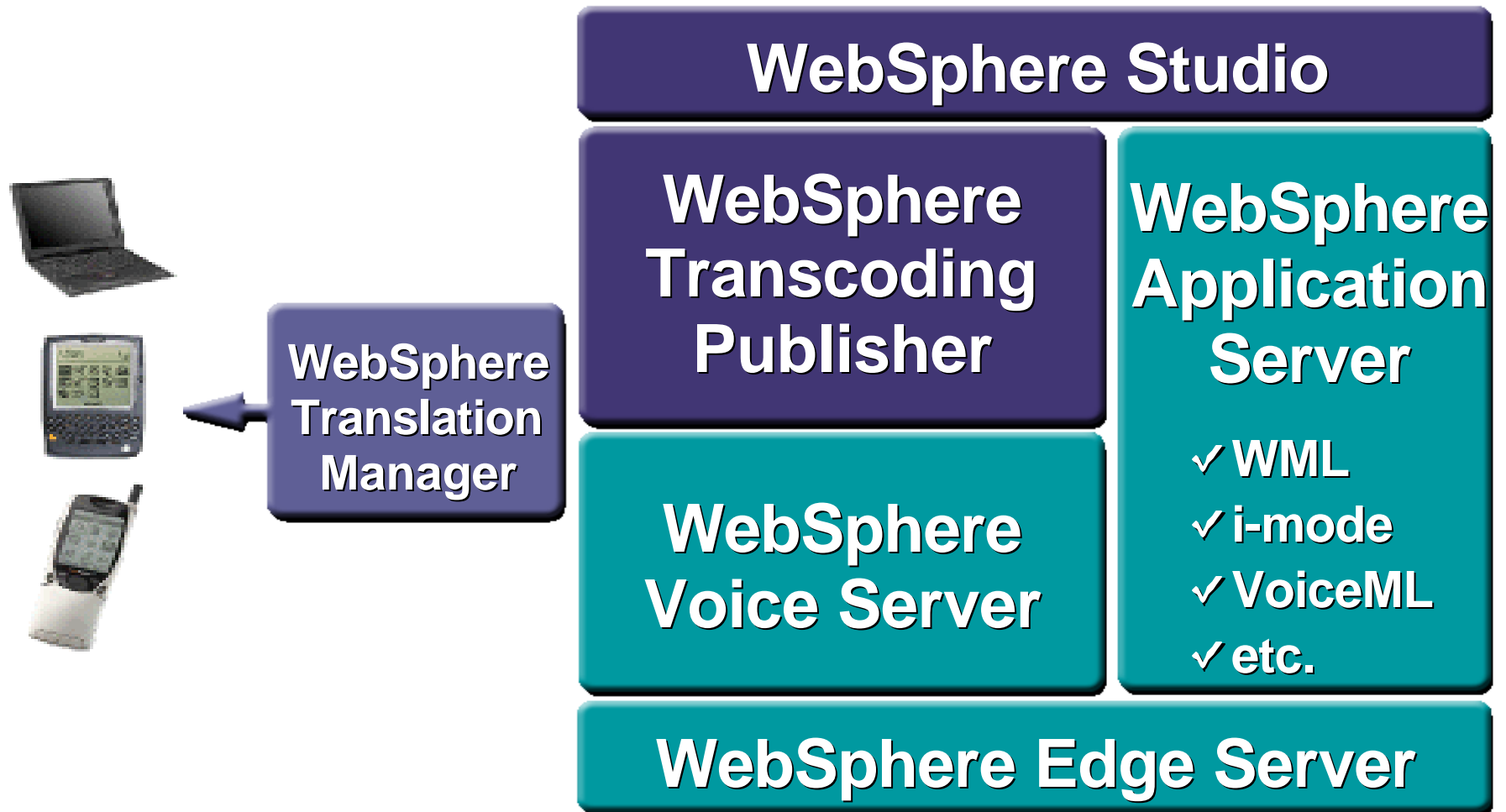
They don't know who I am
They don't know what I like
They can't customize for me
They don't let me add value myself
They can't make recommendations
Information is decentralized



Customization
Personalization
Recommendations
Portalization & syndicated content
Collaborative e-teaming
High-quality Optimized content



WebSphere Everyplace Access



... extending your e-business for wireless and voice

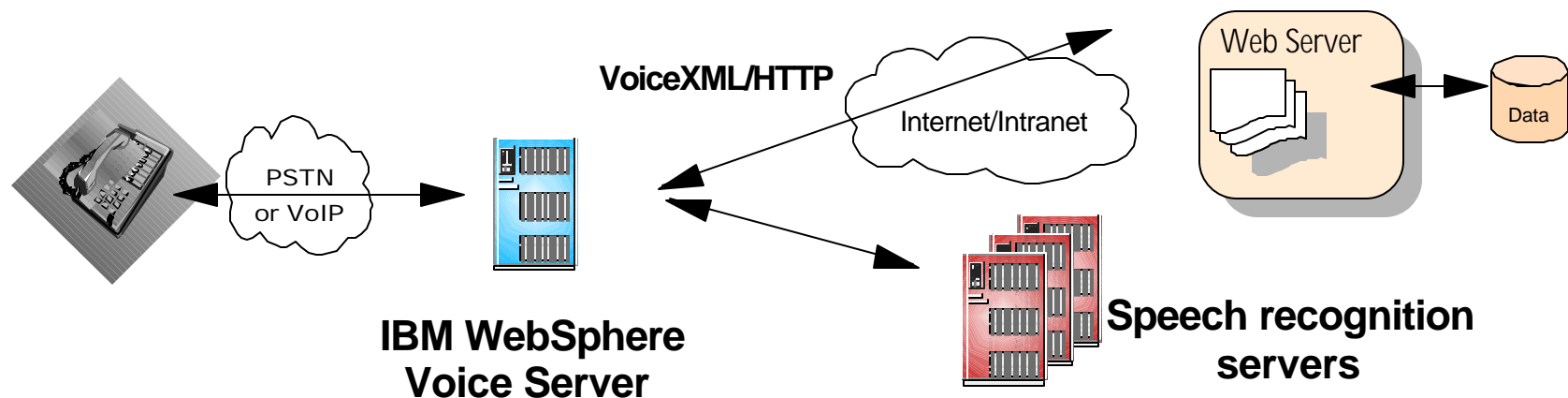
WebSphere Voice Server

Benefits

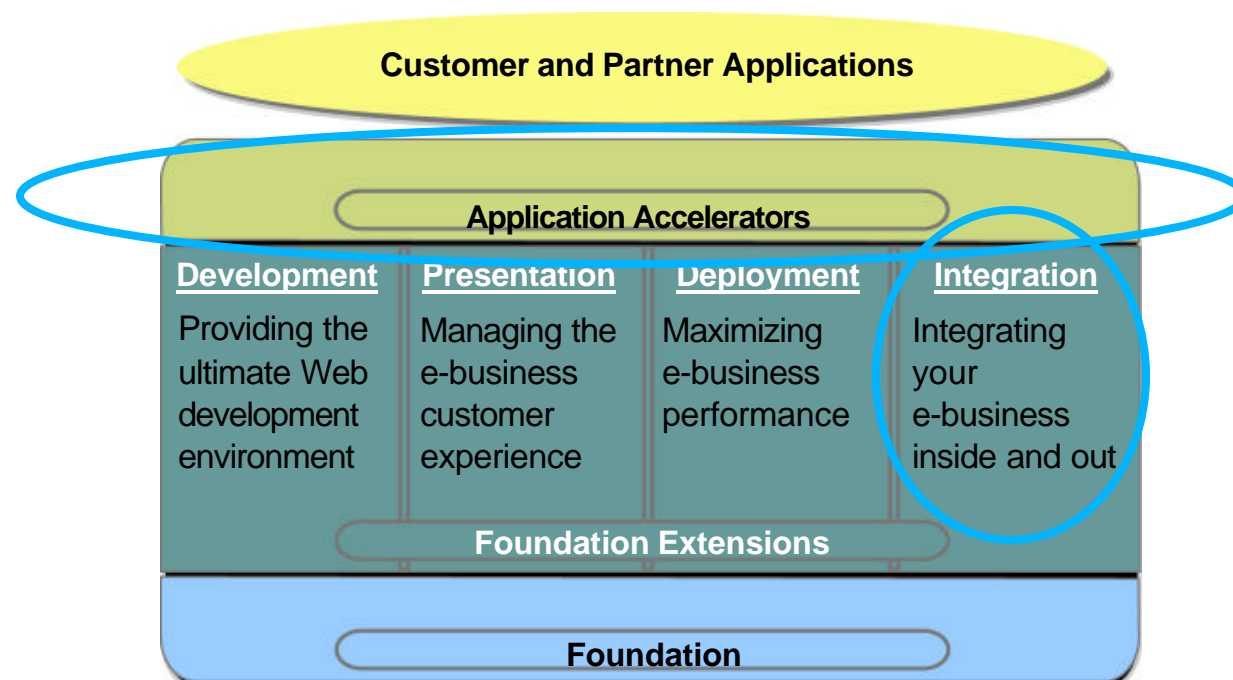
- Enable voice interaction
- Improve customer service with user-friendly interface

Features

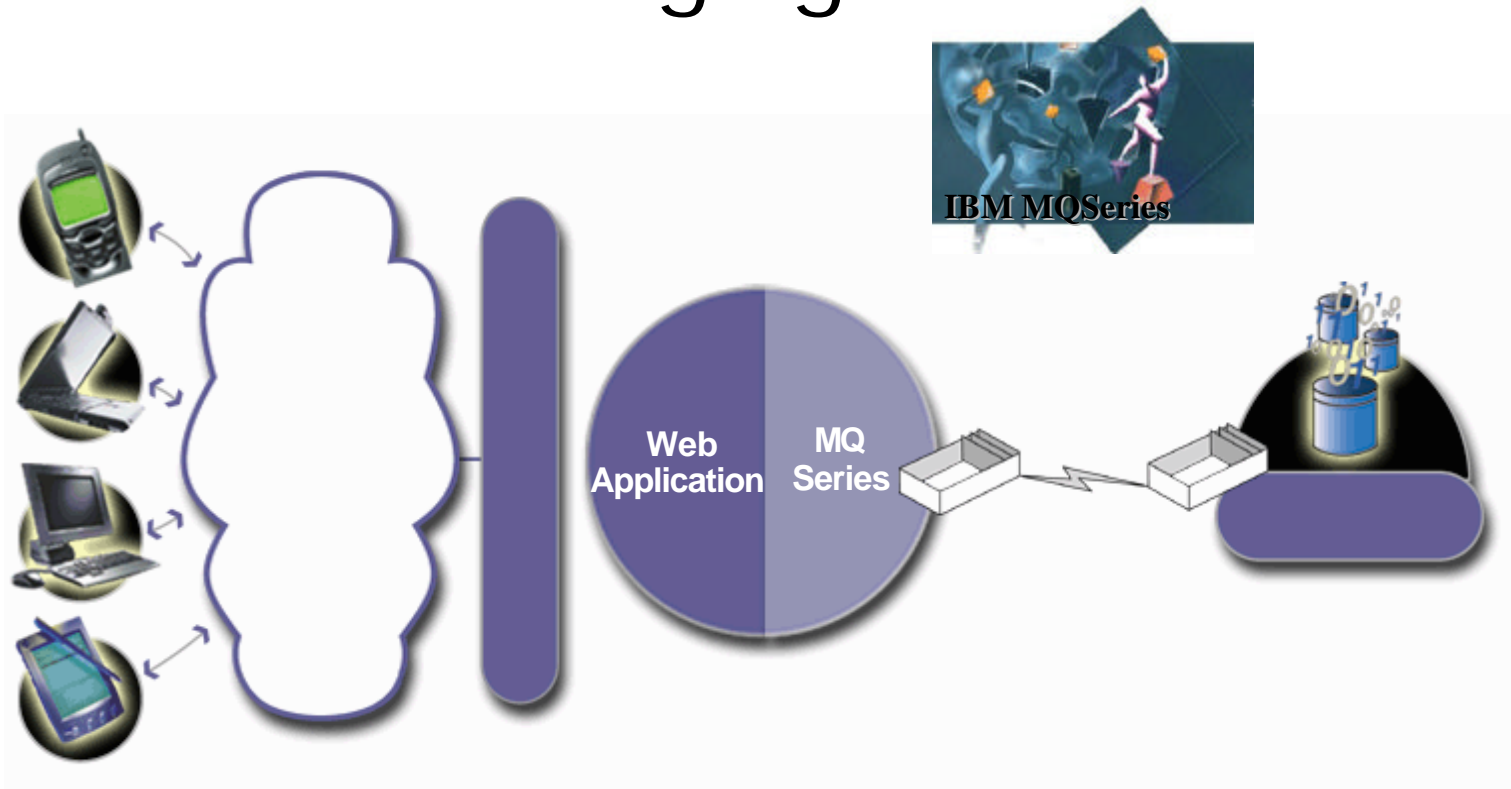
- VoiceXML browser
 - ▶ Supports VoiceXML standard
- Text-to-speech engine to generate synthesized speech
- Speech recognition engine for accepting voice input



WebSphere Software Platform: Business Process Integration



MQSeries® Messaging



- Flexible messaging infrastructure
- Limited modification to back-end application required
- Available on over 35 platforms, 70% market share in messaging market
- Isolates an application from changes to another one

WebSphere Business Integrator

“Up to \$4.4 Billion was lost in e-commerce revenues in 1999 due to inadequate infrastructure that led to poor site and service performance.”

—Source: Zona Research

What lies beneath the surface



1% e-commerce web sites

99% Backend infrastructure and processes to support e-commerce

Source: Goldman Sachs E-Commerce/Internet 1999



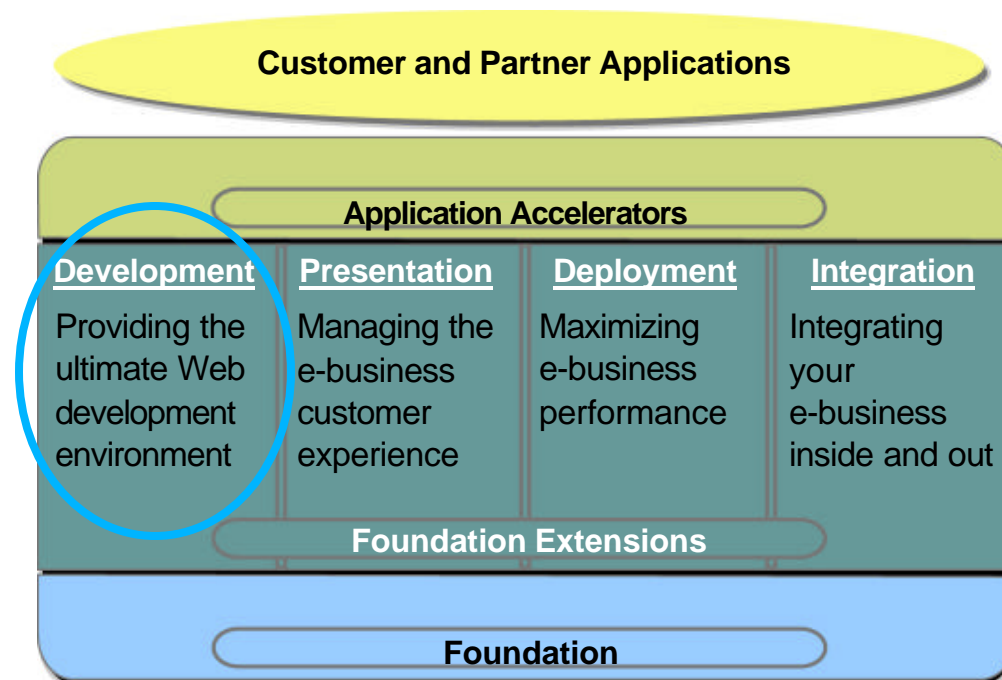
In an e-business world, processes are not isolated to individual applications... they span your enterprise... and beyond.

A single, UNIQUE, integrated product for inter and intra company process management

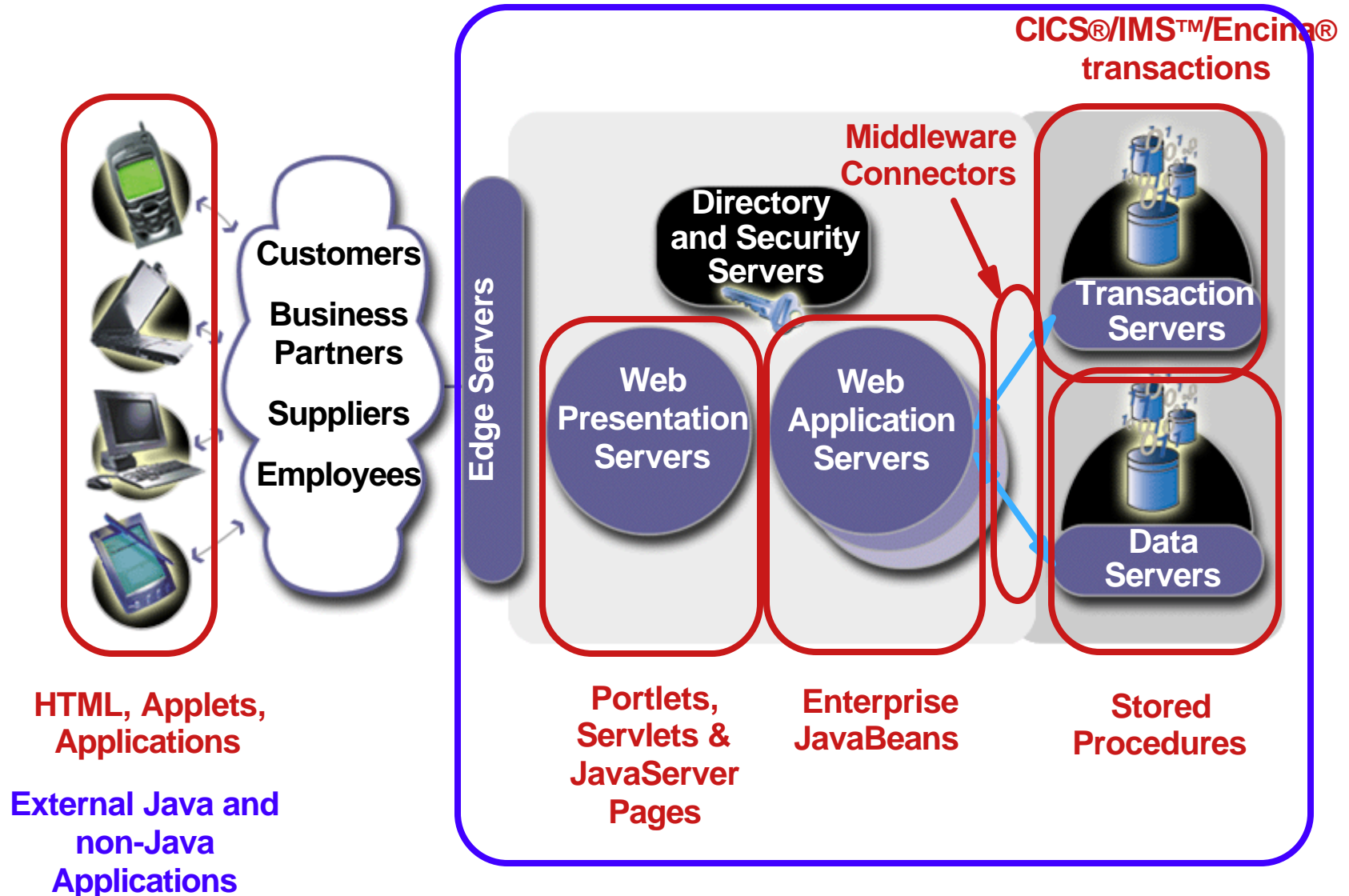
-
- The diagram illustrates the interaction between Public Processes and Private Processes. A central blue circle labeled "Public Processes" is connected by green arrows to various icons representing private processes, including a mobile phone, a person, a factory, a warehouse, a truck, and a person at a control panel. Blue arrows point from the public processes to the private processes, and green arrows point from the private processes to the public processes.



WebSphere Software Platform: The Next Generation Development Tools



What do we develop, today?

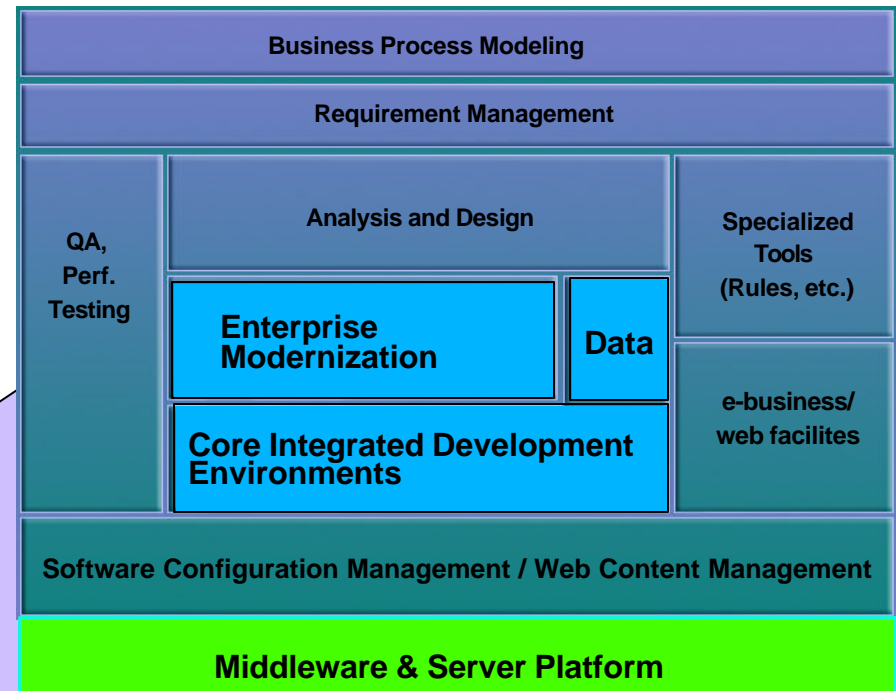


Yet, e-business AD continually gets more complex

- Huge variety of new functionalities requires specialized tools
 - ▶ e.g. XML, XSL, Web Services, Transcoding, Personalization, Portals, Business Integration, etc.
- New tools are born at frantic pace, clustered into new development environments
 - ▶ proliferation of development environments
 - ▶ especially in a multi-vendor world (but single vendor rarely implies single development environment)
- Developers must deal with different UI, tool semantics, resource management facilities, lack of integration, etc..
- Developers need to continue the maintenance and integration effort for existing apps.
- Organizations struggle with availability of skills and skill transfer.
- Overseas outsourcing becomes mainstream.

No single product or supplier can
provide the full AD lifecycle environment

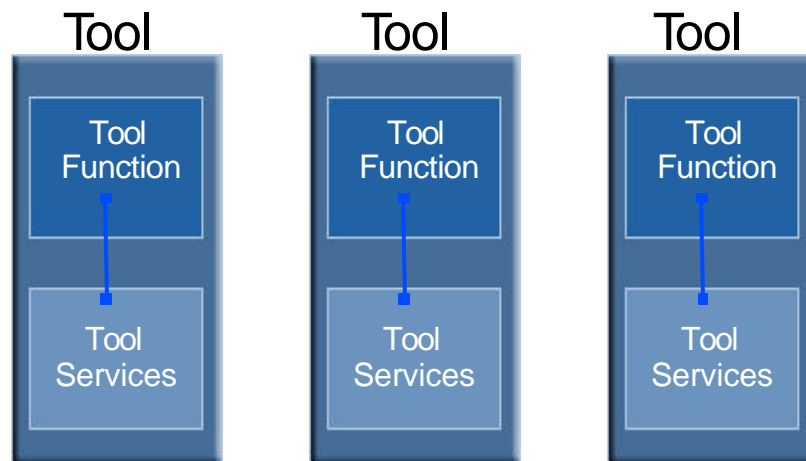
IBM will ...



- ★ Focus on delivering a best-of-breed AD platform & integrated tools for key application developer roles
- ★ Partner aggressively with ISVs to build out the AD platform
- ★ Drive unprecedented middleware & server integration
- ★ Deliver ROI via an open, extensible & standards-based AD platform²⁷

WebSphere Studio Workbench :

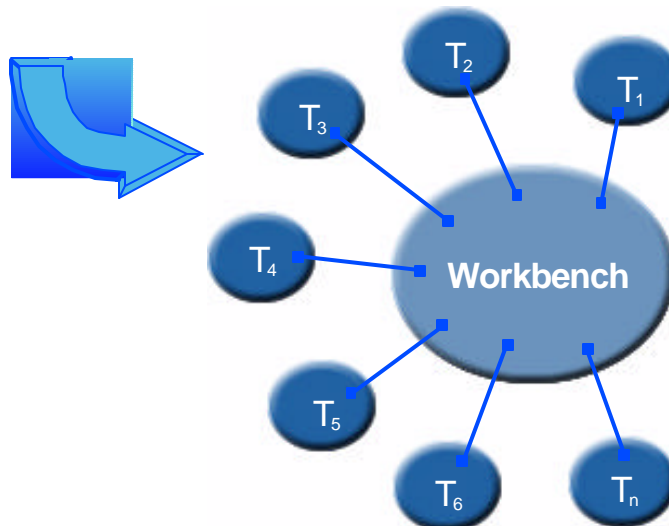
Delivering a Comprehensive Development Environment



■ Challenges

- ▶ Difficulty of integration
- ▶ Different Semantics, UI etc
- ▶ Different repositories
- ▶ Not best-of-breed Tool Services
- ▶ Difficult to manage
- ▶ Slow to Market

A fundamental change in AD Tooling paradigm

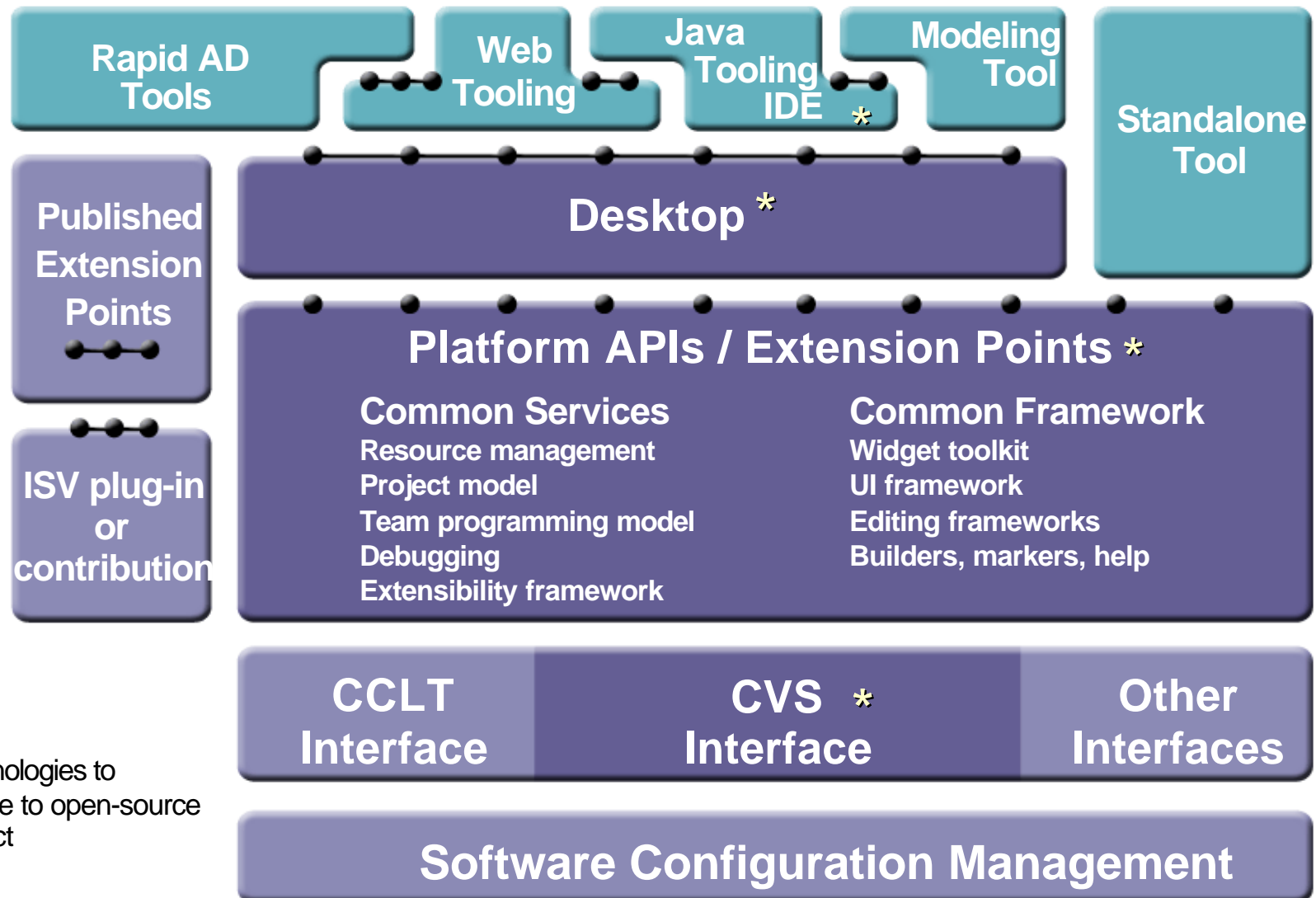


■ Benefits

- ▶ Easier integration
- ▶ Single view/mgmt
- ▶ Common look and feel
- ▶ Best-of-breed Tool Services
- ▶ Tool builder focus on tool functions
- ▶ Fast to Market

WebSphere Studio Workbench -

An open tool runtime and development toolkit



* Technologies to donate to open-source project

Workbench - Key Features

■ Highly pluggable platform

- ▶ Provide excellent multi-level vendor integration
- ▶ ISVs can provide plugins to workbench to integrate their tools into the core platform

■ Customizable Perspectives

- ▶ Promote role based development (Web Developer, Java Developer, DBA, etc)
- ▶ Reduces the learning curve
- ▶ Consolidate tools to one platform
 - e.g. Customizable perspectives can be created/saved to offer a similar functionality to other Java IDEs
- ▶ Perspectives use same project artifacts

■ Support for automated builds

- ▶ ANT support
- ▶ Command line EJB generation

■ Enhanced performance

Product Strategy

- **Open Source**
- **3 Base Products built on Workbench**
 - ▶ WebSphere Studio Site Developer
 - ▶ WebSphere Studio Application Developer
 - ▶ WebSphere Studio Enterprise Developer
- **Middleware tools provided as plug-ins on top of base offerings**
 - ▶ Business Components
 - ▶ Business Integration
 - ▶ Voice & XML
 - ▶ Commerce
 - ▶ etc.
- **AD Solutions and ISV Offerings**

WebSphere Studio Offering/Branding

■ WebSphere Studio Site Developer

- ▶ Upgrade from WebSphere Studio 4.0 'Classic'
- ▶ Upgrade from Visual Studio or Java Professional 'Classic'

■ WebSphere Studio

WebSphere Studio Application Developer

WebSphere Studio Site Developer

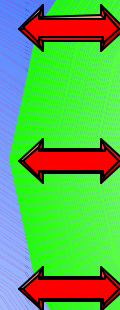
- HTML/JSP Tools
- Servlet Tools
- Web Services Tools
- XML Tools



- J2EE Tools
- Data Tools
- Performance Tools
- Trace Tools

Enterprise Connectors

- JCA Connectors
- CCF Connectors
- Enterprise Access Builders

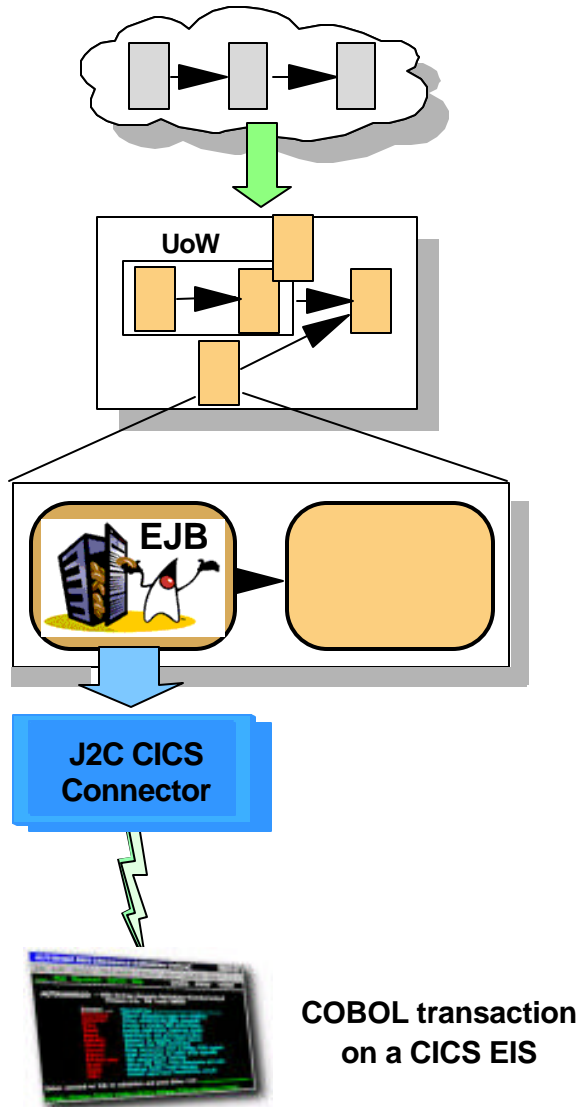


WebSphere Studio Workbench

- Universal Tooling Platform
- Provides frameworks, services, and tools for tool builders to focus on tool building
- Will become basis for an open source project (Not a product IBM sells)
- Core Workbench technology basis for all IBM Tools

Business Integration Tools Vision

'bottom up'

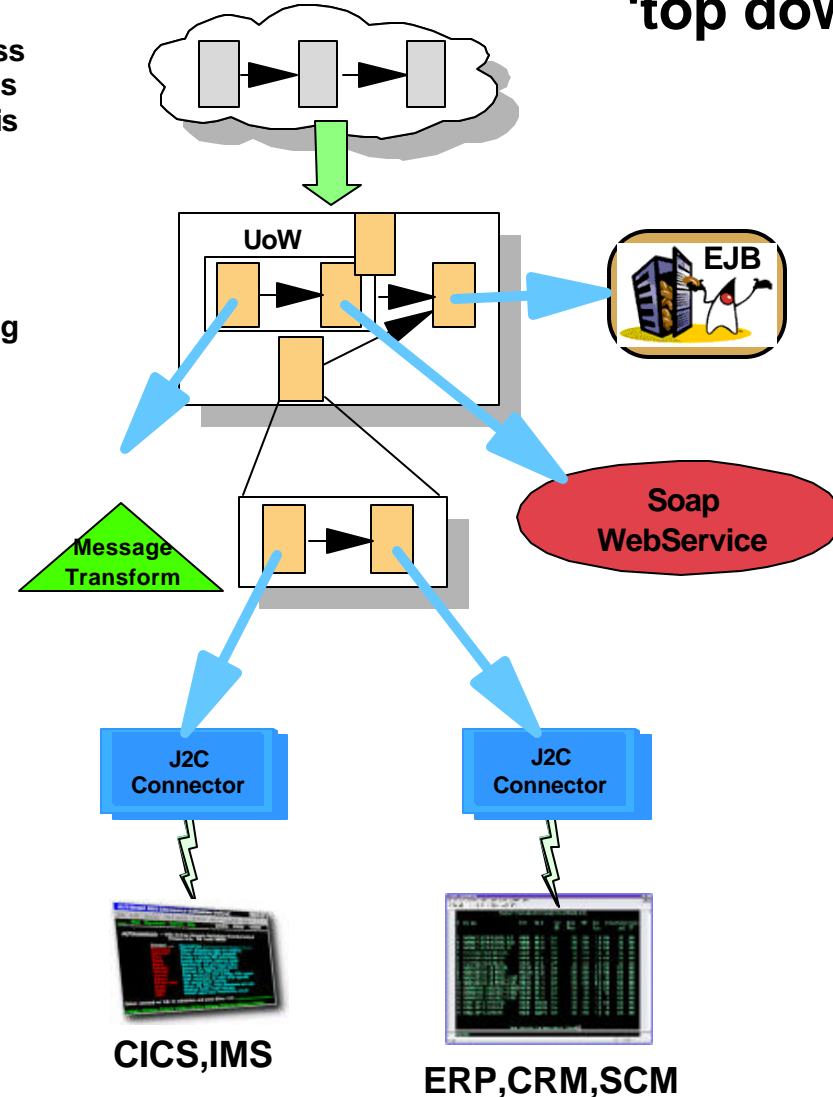


Business Process Analysis

Flow Modelling

Micro Flow

'top down'



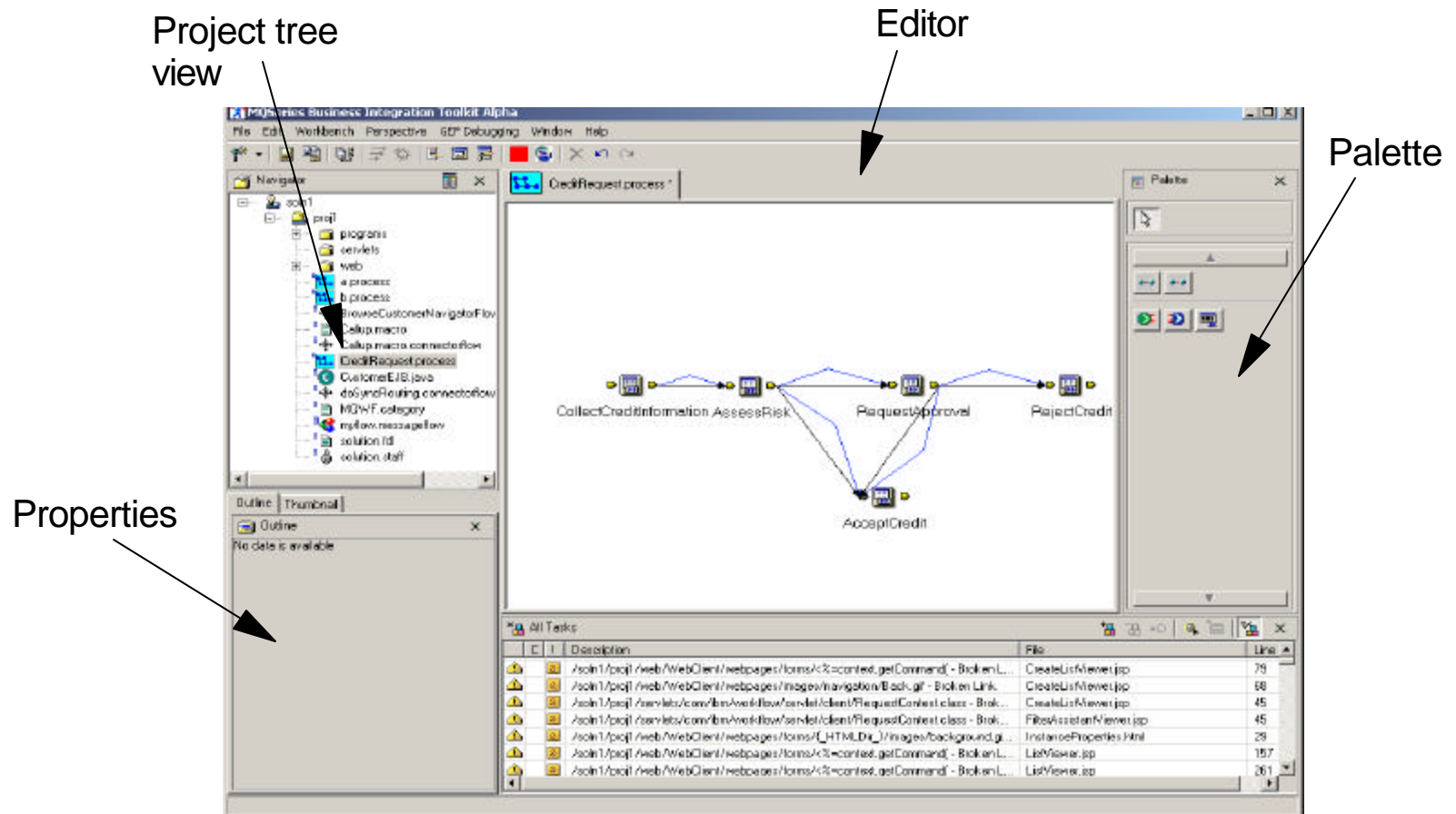
COBOL transaction
on a CICS EIS

CICS,IMS

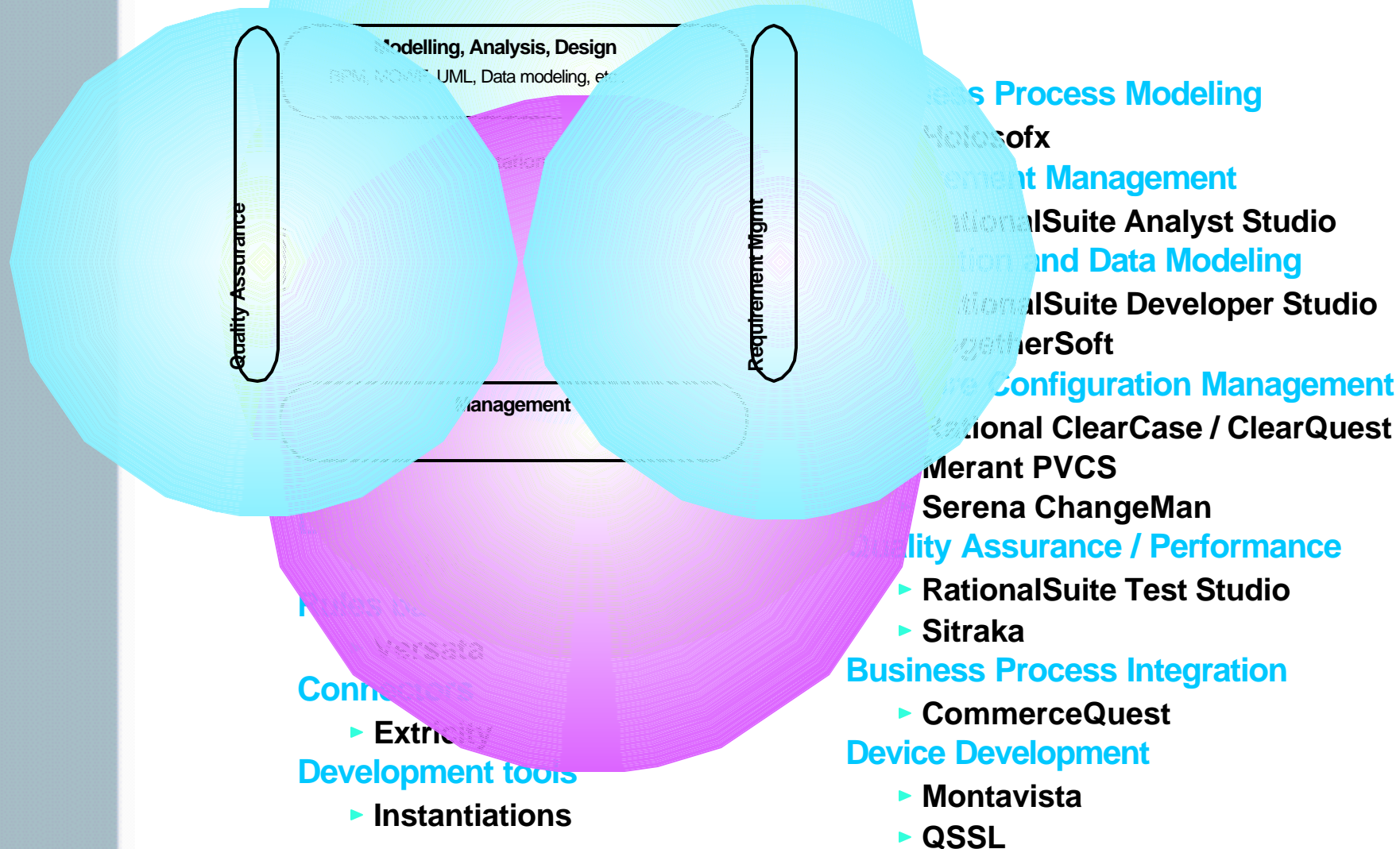
ERP,CRM,SCM

Flow Composition Builder

- provide a single builder
- based on Visual Composition Framework (Graphical Editing Framework) which is a convergence of design for MQSI tools and VCE
- same builder used for programming at all levels of the application stack



Worldwide Partners



Workbench Integration Levels

- **Different levels of integration are available in the Workbench**
 - ▶ **Most competitor tools only provide invocation support**

	Levels of Integration	Example
Invocation	Integration is through invocation of registered applications on resource types	Tool A is launched from workbench based on file extension
Data	Integration is achieved through data sharing	Tool A changes a UML model which automatically changes implementation in Tool B
API	Tools interact with other tools through platform APIs	Tool A invokes Tool B through Tool B APIs
UI	Tools and their user interfaces are dynamically integrated with the workbench at runtime	Tool A runs as embedded view in workbench



Build-Test-Deploy J2EE Applications

(from end-to-end)

WebSphere software

the fastest way to dynamic e-business

WebSphere Value Proposition

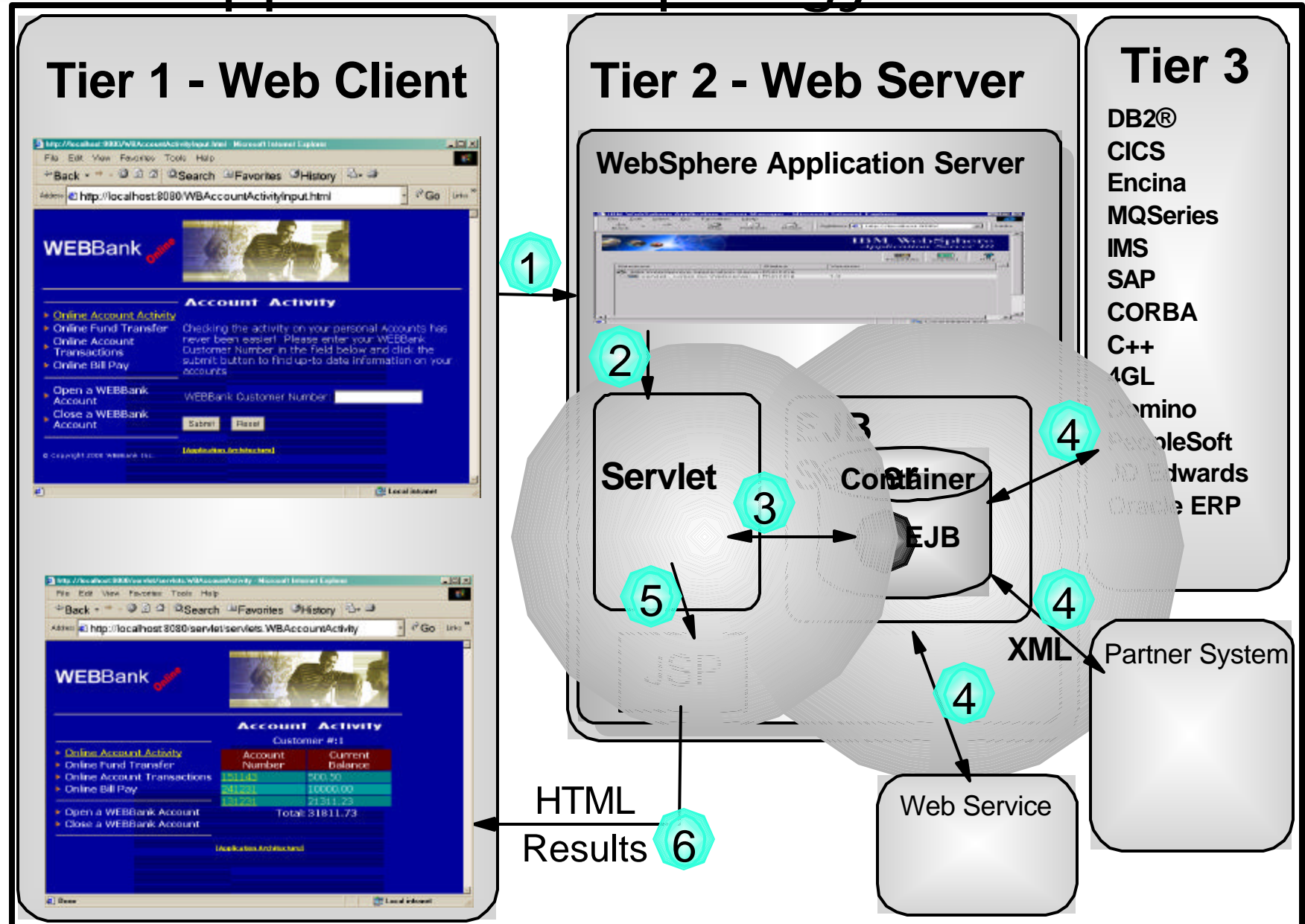
- **WebSphere Studio Application Developer provides the best integrated development environment for building, testing, and deploying J2EE applications**
- **WebSphere Application Server provides the most scalable and advanced e-business runtime**

**Runtime+Tools=Successful
e-business applications**

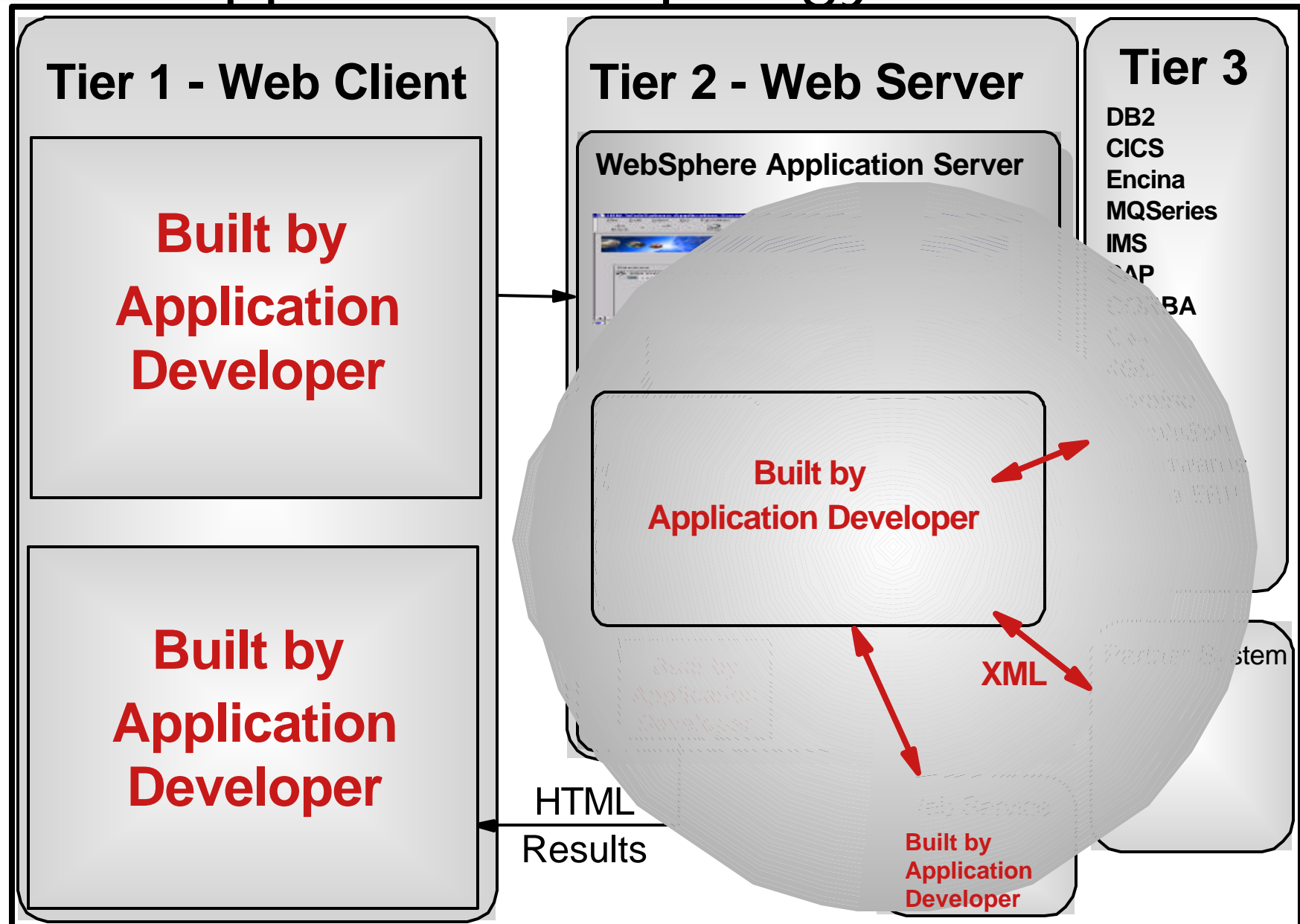
Key Messages

- **WebSphere Studio Application Developer provides best-of-breed integrated development support for:**
 - ▶ **Developing J2EE Applications:**
 - HTML/Servlet/JSP/EJB/etc
 - ▶ **Developing and Deploying WebSphere Applications**
 - ▶ **Accessing Enterprise Resources**
 - Java Connector Architecture (JCA)
 - JCA Connectors
 - ▶ **Developing Web Services**
 - ▶ **Developing XML Applications**
- **End-to-end local/remote unit testing for all of the above!**

Web Application Topology



Web Application Topology - Tools



Building an Application

WebSphere Studio Application Developer

Server Side Development

Typical Activities

- ▶ Build EJBs
- ▶ Develop XML Components
- ▶ Build Web Services
- ▶ Generate Enterprise Access
- ▶ Unit Testing/Debugging

Perspectives Typically Used

- ▶ J2EE, Data, Java, XML, Web

Output

- ▶ Interfaces (need no Beans)

Client Side Development

Typical Activities

- ▶ Generate Web Application Templates
- ▶ Customize Generated HTML,JSP
- ▶ Customize Servlet
- ▶ Unit Testing/Debugging

Perspectives Typically Used

- ▶ Web IDE

C

Web App

WAP

Application Assembly

Output

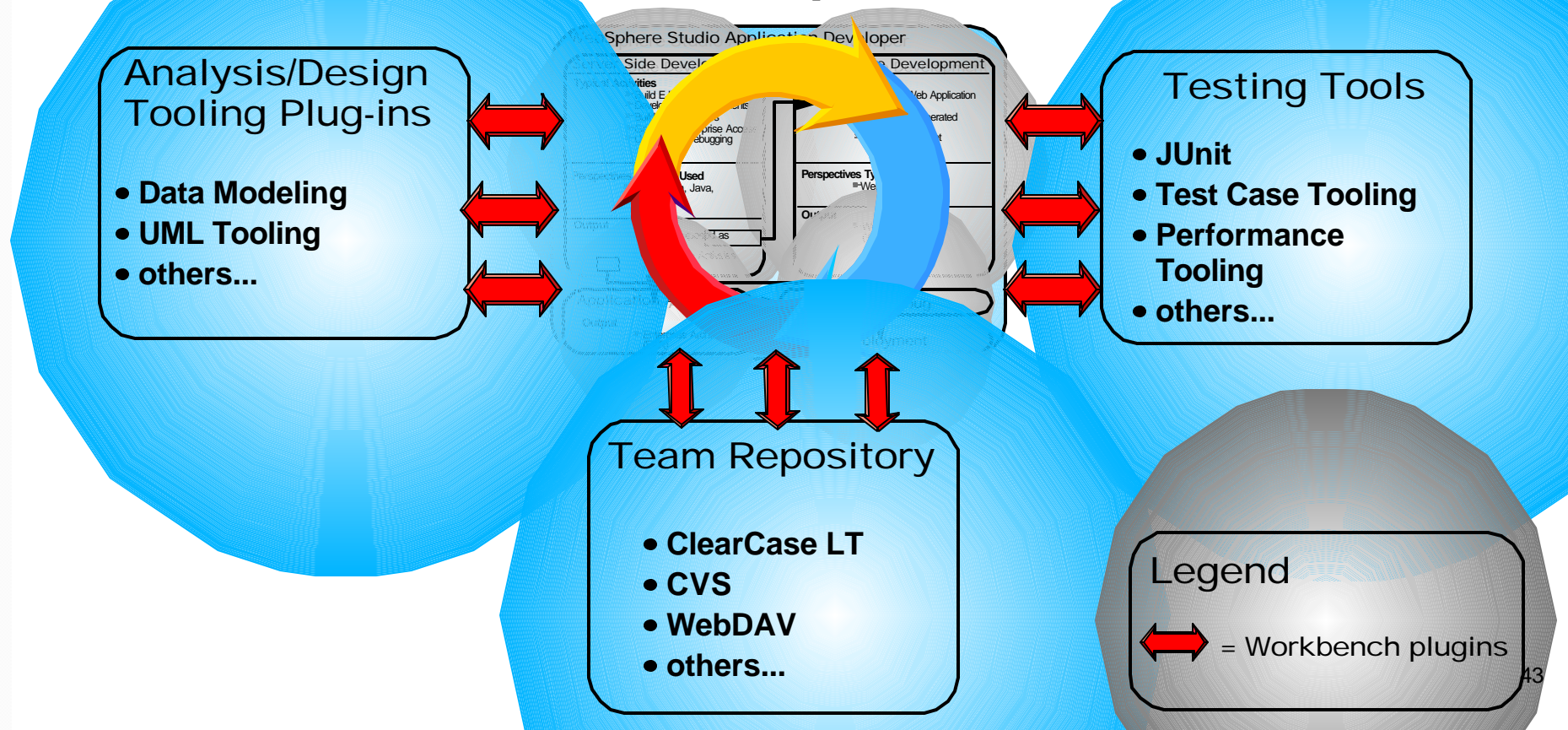
- ▶ Enterprise Archives (EAR)

Testing/Debug

Deployment

The Bigger Picture

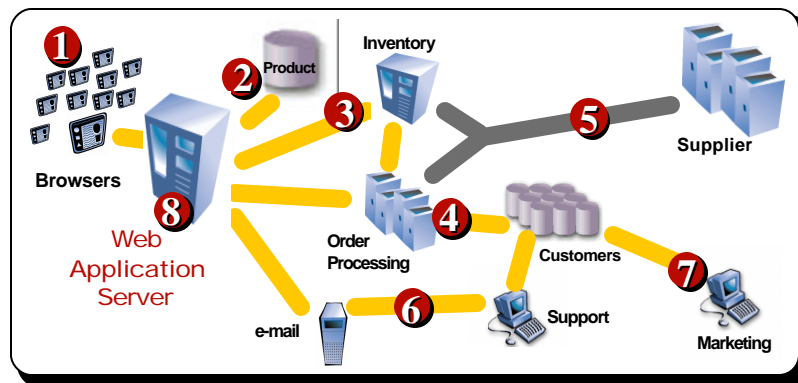
- **Complete life cycle solution for J2EE development**
 - ▶ **Plug-in architecture allows limitless development tools from IBM and our partners**



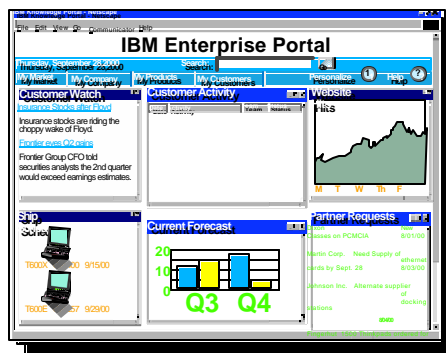
Demonstration

WebSphere: *The e-business Platform*

From Basic Web Enablement...

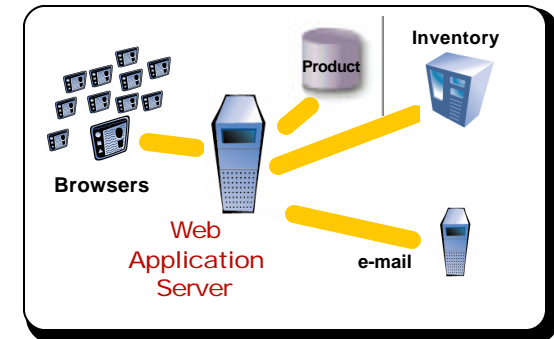


to Business Process Management ...

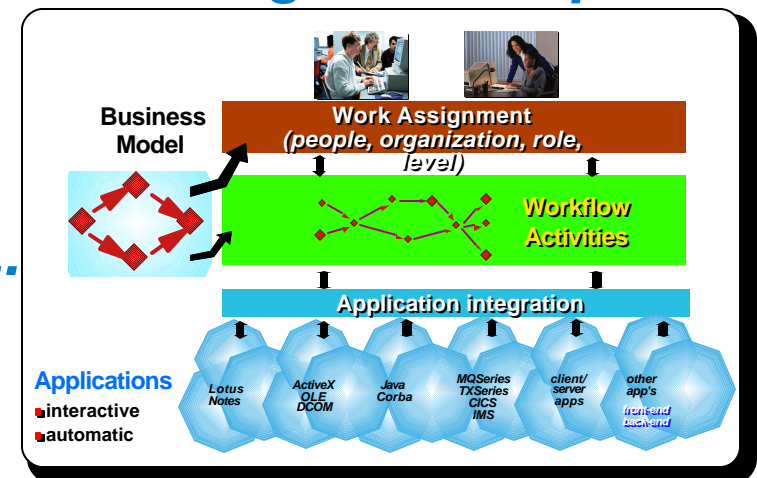


to Portals...

to Pervasive Applications ...



to Web Enabling the Enterprise ...



IBM dynamic e-business infrastructure:

Software backed by real-world experience

- Global experience
- World-class partners
- End-to-end integrated solutions
- Speed to market
- Multiplatform integration
- Security
- Offers dependable support

WebSphere software

DB2 software

Software is the heart of infrastructure

Lotus software

Tivoli software

The difference is WebSphere.

www.ibm.com/websphere

Trademarks and Disclaimers

The following terms are trademarks or service marks of the IBM(R) Corporation in the United States or other countries or both DB2(R), CICS(R), WebSphere(TM), AIX(R), OS/400(R), OS/390(R), z/OS(TM), MQSeries(R), AS/400(R), IMS(TM), and VisualAge(R).

Lotus is a registered trademark of Lotus Development Corporation and/or IBM Corporation.

The following terms and phrases are trademarks or service marks of other companies:

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

Windows(R) is a registered trademark of Microsoft Corporation.

Other company, product, and services names may be trademarks or service marks of others.

This presentation is provided by IBM, its Affiliates and Suppliers "as is" without warranty of any kind, either express or implied, statutory or otherwise, including, without limitation, the implied warranties of merchantability, fitness for a particular purpose or non-infringement. Customer experiences may be different from those described here.

© IBM Corporation 1994-2001. All rights reserved.