IBM WebSphere software platform for e-business

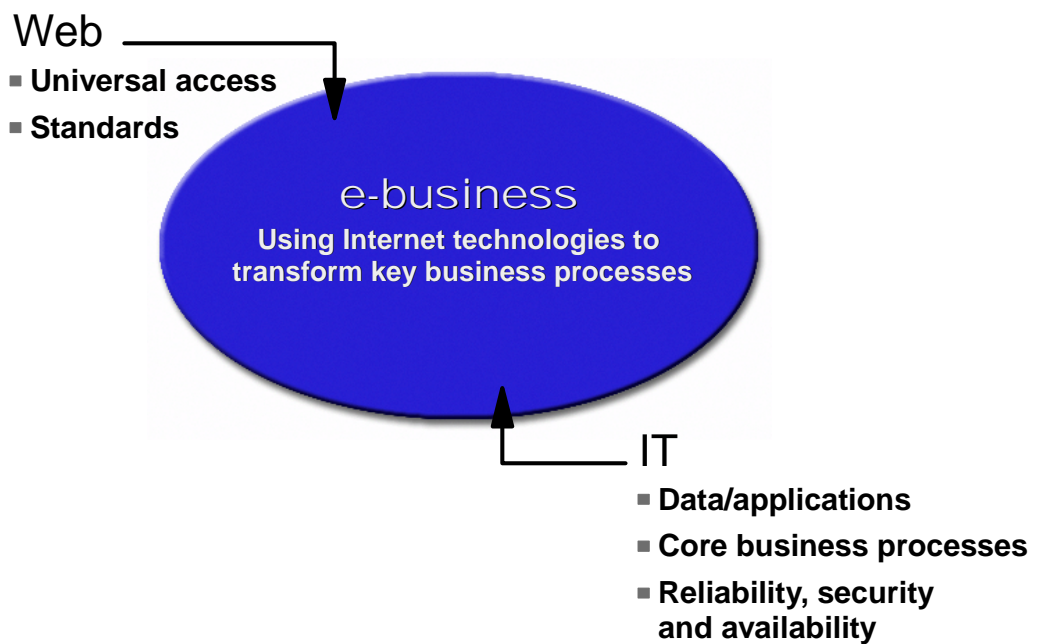## Technical Overview

---

The Emergence of e-business

Web
- **Universal access**
- **Standards**

e-business
Using Internet technologies to transform key business processes

IT
- **Data/applications**
- **Core business processes**
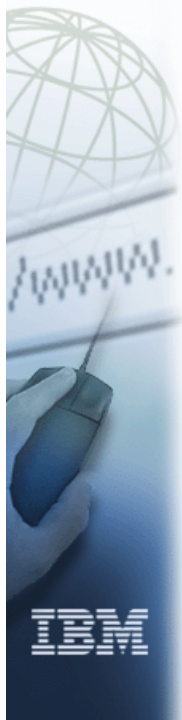- **Reliability, security and availability**

Market Trends

- **Move business to Internet**
  - Use Internet as the deployment ground of new mission-critical applications
  - Extend existing applications and enterprise data to the Internet
- **Exploit Web model on intranets**
- **Improve bottom line**
  - Reduce time to market
  - Cut costs and increase ROI

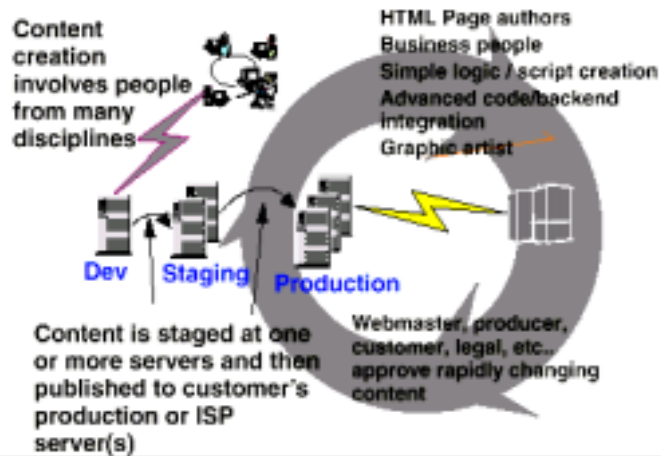# Successful e-business applications

- **Server-centric**: no requirements on end-users
- **Standards-based**: Web, Java, EJB, XML
- **Quick to develop, deploy, use**: integrated tools
- **Leverage core systems**: connectivity
- **Scalable**: multi-platform, workload management
- **Powerful**: best performances, analysis tools
- **Manageable**: admin and system management tools
- **Secure**: security architecture and tools

The Web Application World

Content creation involves people from many disciplines

Dev | Staging | Production

Content is staged at one or more servers and then published to customer's production or ISP server(s)

HTML Page authors
Business people
Simple logic / script creation
Advanced code/backend integration
Graphic artist

Webmaster, producer, customer, legal, etc. approve rapidly changing content

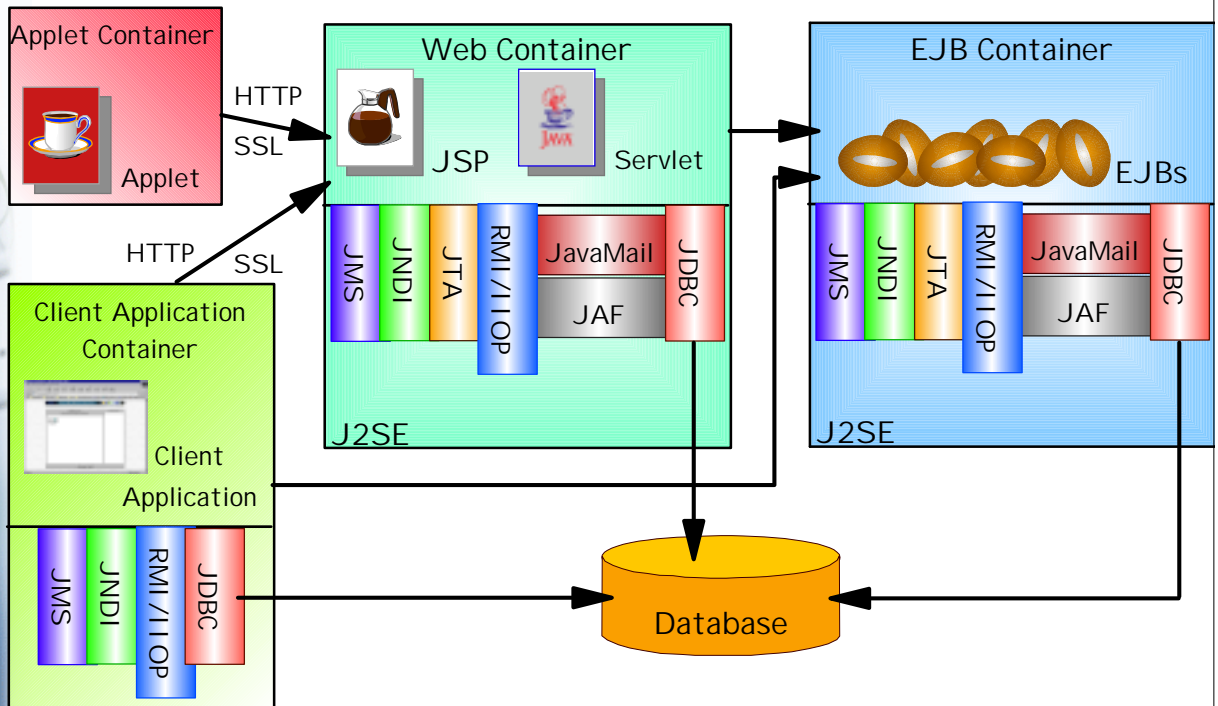---

Review of technologies

- **Servlet:**

  A server-based Java program used to interact with clients

  When is it best to use a Servlet?
  - Minimize browser dependencies
  - Applets too big to download
  - Need for greater scalability

- **JavaServer Page (JSP):**

  HTML pages with dynamic content (in-line java)
  - Separating presentation logic from business logic
  - Makes it easy for the Web page designer to create HTML pages with dynamic content

- **JavaBean:**

  Java component for representing and storing data, in a standardized manner

- **Enterprise JavaBean (EJB):**

  Components that implement business logic and typically access enterprise data, transactions, and back-end applications
  - Are deployed in and run on EJB servers
  - Distributed, Persistent and Transactional
  - 2 types: Session Beans and Entity Beans

- **XML:**

  Meta-language for managing and exchanging document types and formats

J2EE Architecture

Applet Container

Applet

HTTP
SSL

HTTP
SSL

Web Container

JSP   Servlet

JMS | JNDI | JTA | RMI/IIOP | JavaMail | JDBC
JAF

J2SE

Client Application Container

Client Application

JMS | JNDI | RMI/IIOP | JDBC

EJB Container

EJBs

JMS | JNDI | JTA | RMI/IIOP | JavaMail | JDBC
JAF

J2SE

Database

The IBM Framework for e-business

The IBM Framework
for e-business

Build ◀▶ Run ◀▶ Manage

Windows NT/2000   Linux   AIX   NetWare   Solaris   HP-UX   OS/2   OS/400   OS/390
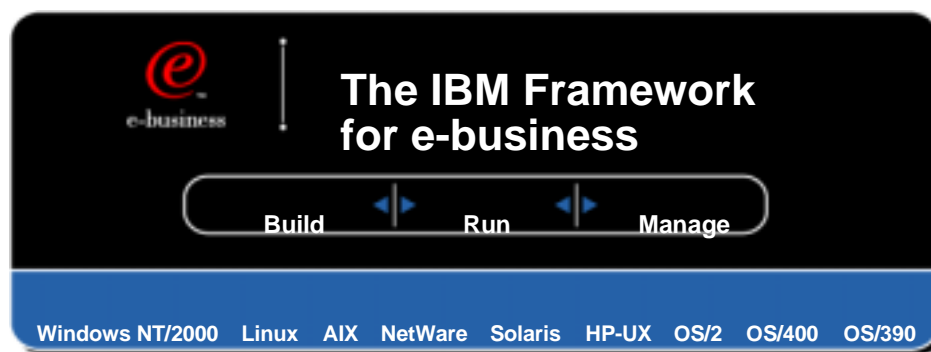
An architecture that enables continued e-business transformation through the use of :

- **an open, standards-based e-business platform**
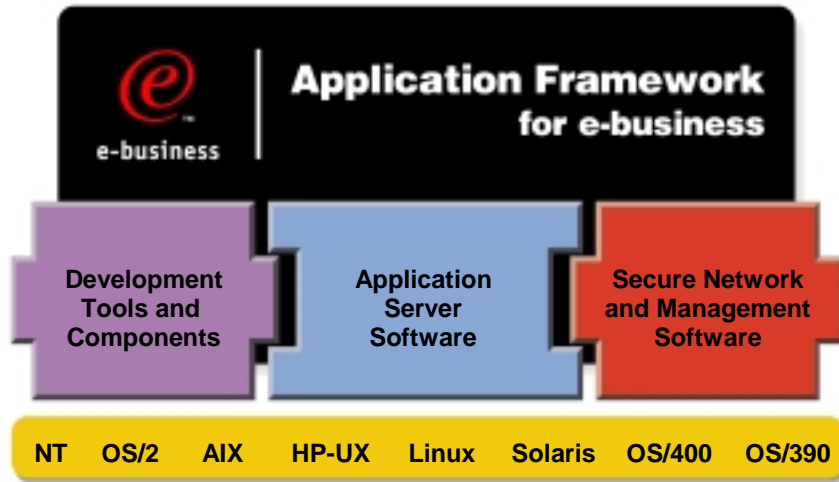- **IBM best practices**
- **a comprehensive product set**

Build   Run   Manage

The Framework Makes It Work

Application Framework for e-business

Development Tools and Components	Application Server Software	Secure Network and Management Software

NT	OS/2	AIX	HP-UX	Linux	Solaris	OS/400	OS/390

- **Field-tested methodology** simplifies development and deployment
- **Rich product portfolio supports simple to sophisticated applications**
- **Based on cross-platform standards including Java**

The IBM Framework for e-business

Transformation & Integration	Web-enable business processes	WebSphere .domino
Leveraging Information	Use data to increase competitiveness	DB2
Organizational Effectiveness	Enable people to be more productive	.domino
Managing Technology	Create a secure, manageable infrastructure	Tivoli SecureWay

Build   **Run**   **Manage**

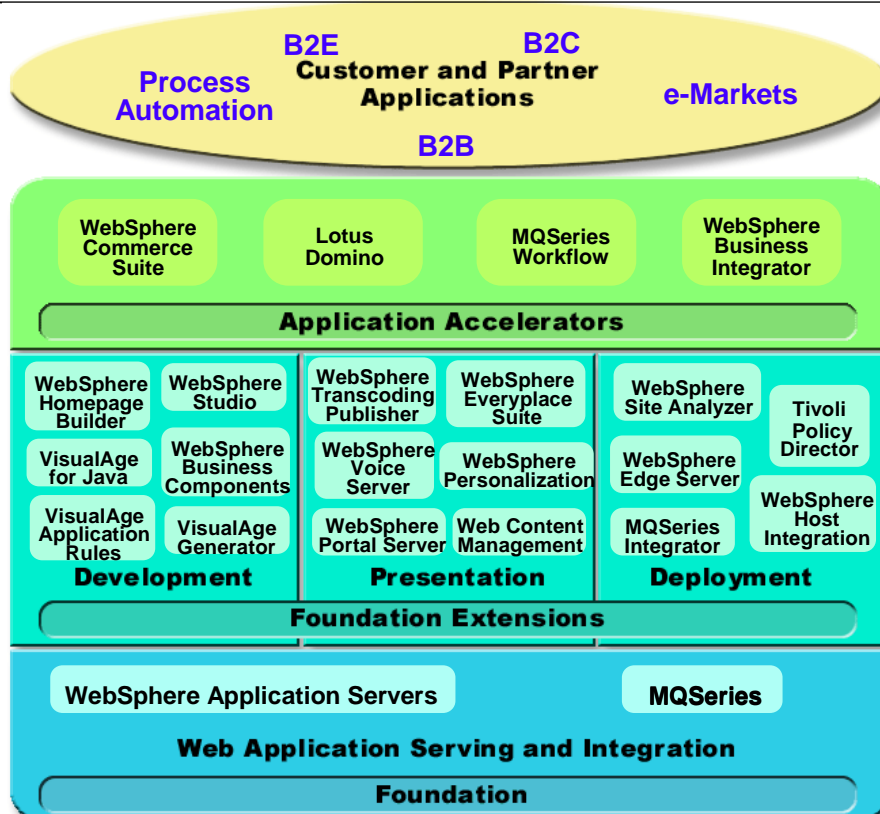## IBM Application Framework for e-business

- A comprehensive open-standard roadmap for e-Business
- Application Framework - principles
  - Server-centric applications
  - Managed thin clients
  - Scalable architectures
  - Java-based techniques
  - Platform, Web server independence
  - Industry-standard components, services, interfaces

WebSphere software platform for e-business

B2E   **B2C**
Process Automation   Customer and Partner Applications   **e-Markets**
B2B

WebSphere Commerce Suite	Lotus Domino	MQSeries Workflow	WebSphere Business Integrator

Application Accelerators

WebSphere Homepage Builder	WebSphere Studio	WebSphere Transcoding Publisher	WebSphere Everyplace Suite	WebSphere Site Analyzer	Tivoli Policy Director
VisualAge for Java	WebSphere Business Components	WebSphere Voice Server	WebSphere Personalization	WebSphere Edge Server	WebSphere Host Integration
VisualAge Application Rules	VisualAge Generator	WebSphere Portal Server	Web Content Management	MQSeries Integrator	

Development   **Presentation**   **Deployment**

Foundation Extensions

WebSphere Application Servers	MQSeries

Web Application Serving and Integration

Foundation

What is an Application Server?

- Execution environment for "transactive applications"
  - More than a simple Web Server: runs business applications
  - Combining data and value added interactive content
- Successful deployment requires
  - high throughput
  - reliability
  - security
  - manageable application environment
  - linear scalability for data, transactions and sessions

Application Servers in WebSphere

- An application server (server) in WebSphere can contain or support:
  - Web (application) container,
  - EJB container, or
  - Both

- A Web application is a set of related Web resources
  - Addressable resources, e.g., HTML pages, servlets, and JSPs

Web Application

- Related set of resources
- Will define a namespace within the URL namespace
  - Root URI

- Define a set of policies
  - Error handler
  - Serve servlets by class name (invoker)
  - JSP support (v0.91, v1.0, V1.1)

- Define both a document root and a classpath

- Provide an associated Servlet Context

- Corresponding RequestDispatcher uses relative URI-based addressing
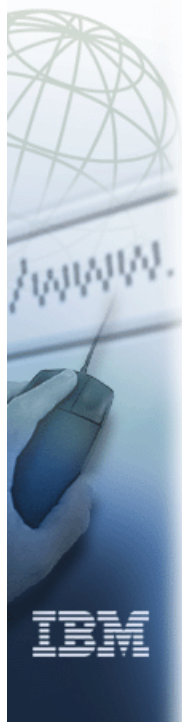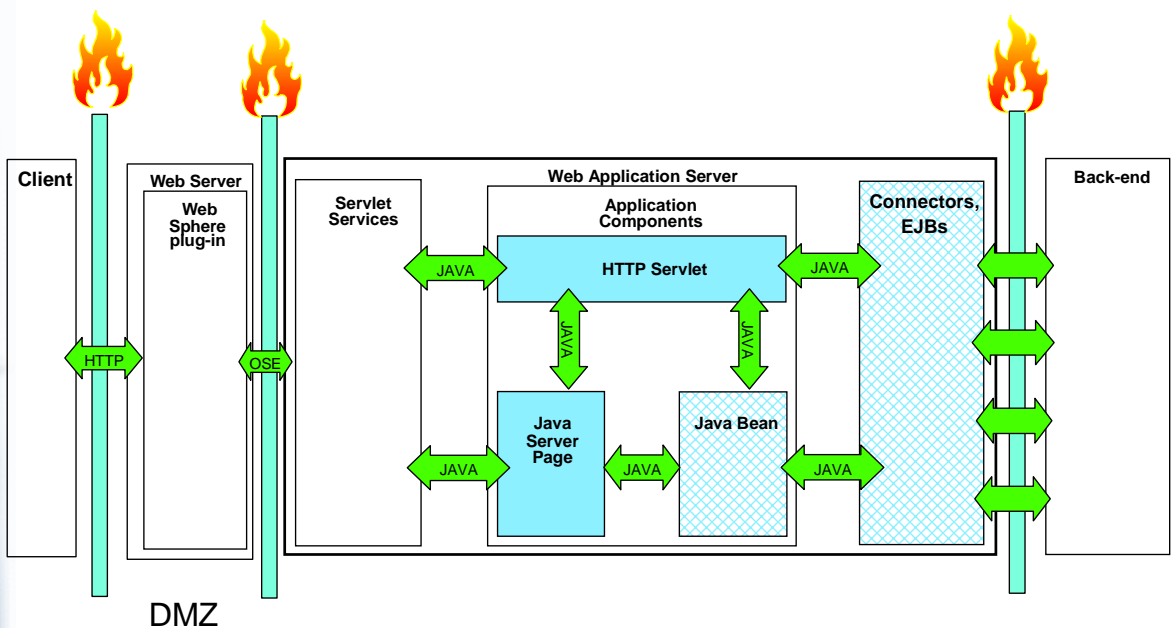 - Separate URI from deployment

Typical Web Application Runtime Architecture

Client   **Web Server** — Web Sphere plug-in   **Servlet Services**   **Web Application Server** — **Application Components** — HTTP Servlet, Java Server Page, Java Bean   **Connectors, EJBs**   **Back-end**

HTTP   OSE   JAVA

DMZ

WebSphere Application Server Editions

Legend:
- TXSeries
- Component Broker
- Enterprise JavaBeans Runtime
- Java Runtime
- Web Server

Features (vertical axis)

STANDARD

Target Developer
- Content Author

Characteristics
- Web Application Server
- Add value to existing web sites

ADVANCED

Target Developer
- Bus logic programmer
- Dyn Content Author

Characteristics
- Departmental clusters
- Scalable, robust
- Java Web application server
- Java business logic
- EJB compliant
- Distributed transactions

ENTERPRISE

Target Developer
- Enterprise programmer

Characteristics
- Enterprise clusters
- Scalable, performance
- Java web application server
- Java, C++ business logic
- EJB superset
- Distributed transactions

IBM HTTP Server 1.3.12

- Based on Apache: guarantee of highest performance
- Additional IBM caching technology
- Secure Sockets Layer (SSL) with Key Management
- Browser-based administration app
- Bundled with WebSphere Application Server 3.x
- NT, AIX, Solaris, and Linux
- For OS/400 based on Apache 2.0
- For OS/390 based on Domino Go Web Server

IBM Secure Internet Connection Server
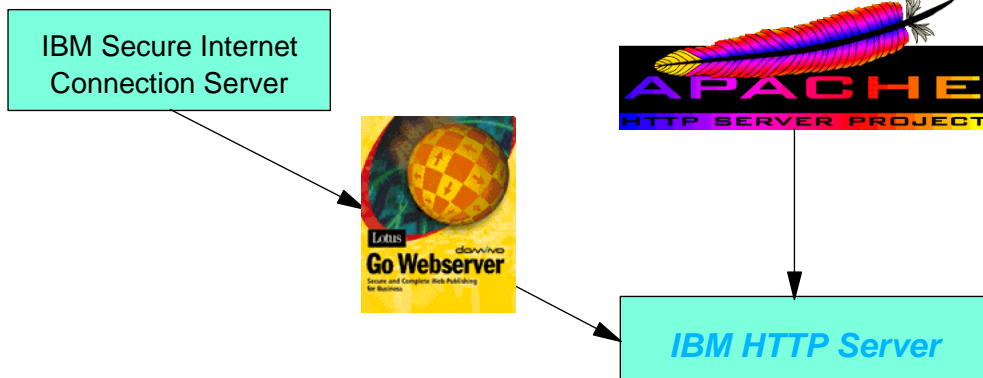
IBM HTTP Server

WebSphere Application Server V3.5.3
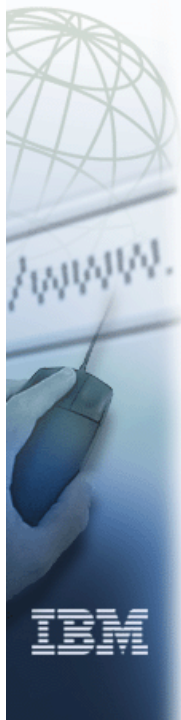## *Standard Edition*

- **Servlet Runtime**
  - IBM JDK 1.2.2
  - Servlet API 2.2
  - Deployment Manager
  - Open support for major web servers
  - HTTP session support (Cookies & URL rewriting)
- **Presentation Services**
  - Dynamic Content generation
  - JavaServer Pages 0.9, 1.0 & 1.1
- **Application Services**
  - Connection Pooling & Datasources
  - Built-in application security
  - XML Document Structure Services
  - LDAP support, JDBC 2.0
  - Java-based application adaptors
- **Single node administration**
- **Integrated Security for all Web resources**
- **Tivoli-ready**
- **Available on NT, AIX, Solaris, HP-UX, OS/390, OS/400, Netware, Linux**
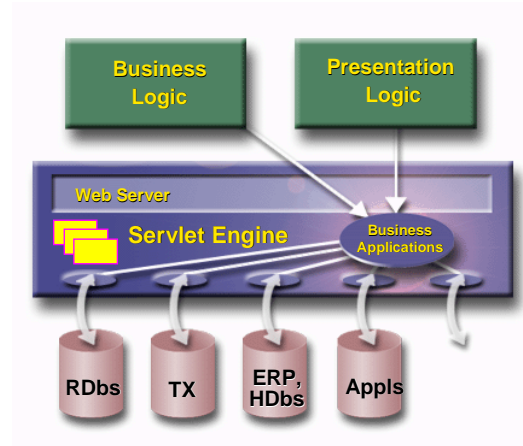
WebSphere Application Server V3.5.3
Advanced Edition

- **"Standard" Plus:**
- **EJB Runtime**
  - Full Session & Entity 1.0+ Support
  - Deployment Manager
- **Application Services**
  - Persistent Storage & 2PC - DB2, Oracle, Sybase, SQL Server, DB2/390
  - JNDI naming service, JMS 1.0.1
  - Common Connector Framework (EABs)
- **Scalability**
  - Clustering: models and clones
  - Servlet Redirector
  - Workload Management
  - Failover support
  - Multi-node administration
- **Platform for**
  - Single signon with Domino
  - Personalization
  - Pervasive computing
  - WebSphere Commerce Suite
- **JSP batch compile, tight integration with VisualAge for Java**
- **Available on NT, Win2K, AIX, HP-UX, Solaris, Linux, Linux/390**
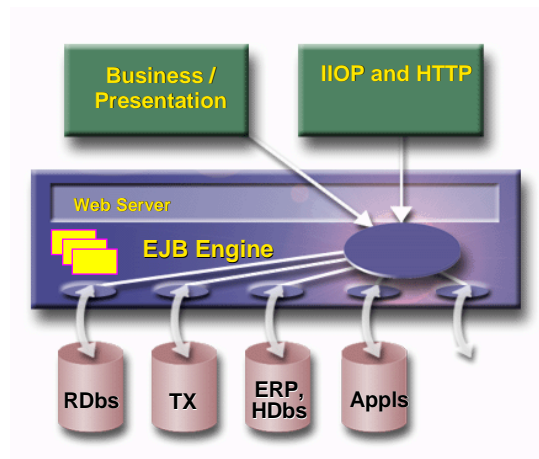
WebSphere Domain

- IBM WebSphere-based applications will be deployed on potentially many physical nodes (logical middle tier)

- Every node participating in an application or collection of applications:
  - Is part of a single administrative domain
  - Will have the WebSphere Adminserver process running on it
  - Will have one or more managed servers or servlet redirectors running on it
  - May have a Web server running on it

WebSphere Scalability Model

- Server Group: collection of identical servers (Servlet or EJB engine, i.e. a JVM)
- Can have multiple servers on one node
- Can have multiple servers distributed across nodes
- A *model* defines the configuration of a server
- Each server is a *clone* of the model (application server + JVM)
- A server group can be regarded as if it were a single server: grouped start, stop...
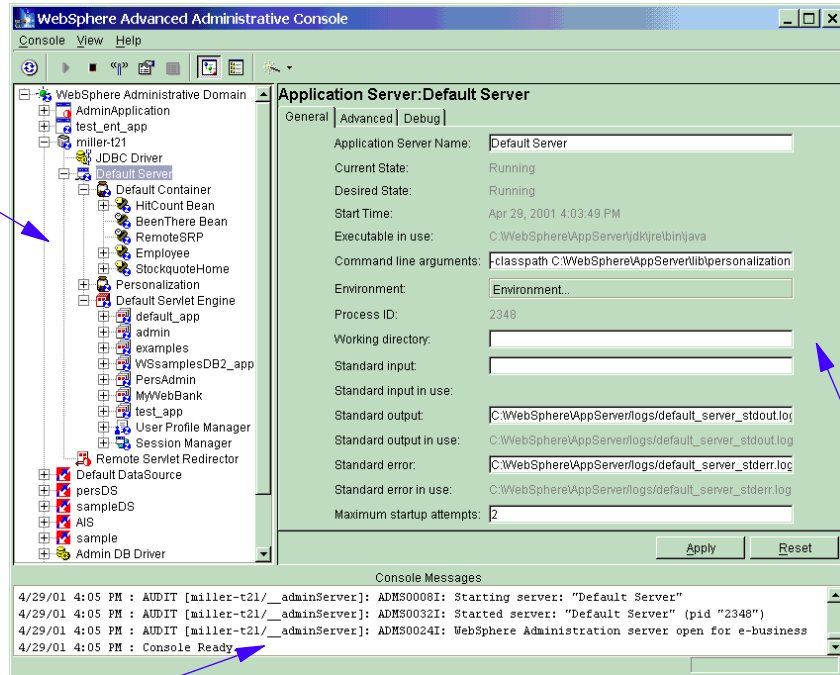- A server group is a collection of servers participating in *Workload Management*

WebSphere App Server Admin Console

Topology
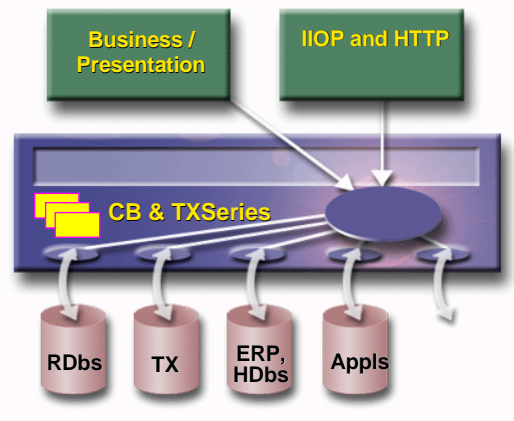

Messages

Settings

WebSphere Application Server V3.5
Enterprise Edition

- **"Advanced" Plus:**
- **Component Broker**
  - JDK 1.2
  - ORB Support for Enterprise JavaBeans
  - C++ & Java remote CORBA objects
  - Security enhancements
  - AIX enhancements
  - CB Toolkit
    - Team support enhancements
    - VAJava integration
    - EJB support
  - Informix support
- **TXSeries**
  - CICS 4.2.1 support
  - Encina 4.2.1 support
  - Tivoli support
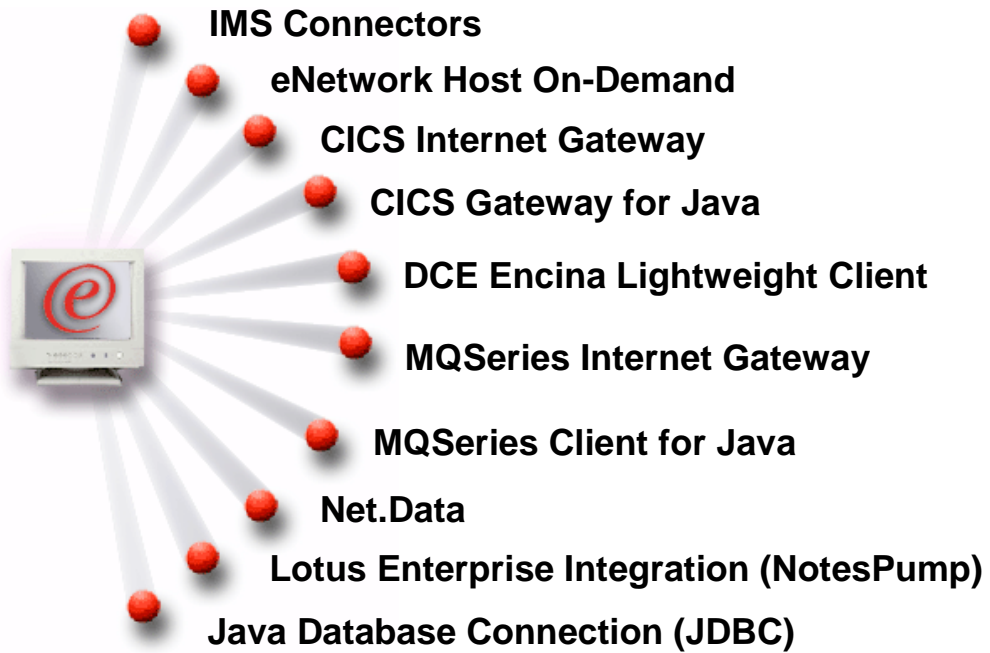- **Available on AIX, OS/390 (via CB/390 and TX/390), Win NT, Solaris**

Business / Presentation

IIOP and HTTP

CB & TXSeries

RDbs   TX   ERP, HDbs   Appls

e-business Connectors

IMS Connectors

eNetwork Host On-Demand

CICS Internet Gateway

CICS Gateway for Java

DCE Encina Lightweight Client

MQSeries Internet Gateway

MQSeries Client for Java

Net.Data

Lotus Enterprise Integration (NotesPump)

Java Database Connection (JDBC)

- Universal Web access to all IT assets
- Increased productivity

The Challenge

- Moving information between different systems
- Different Operating Systems
- Across Different Network Protocols
- Into Different Application Environments

Web Server
- or -
Notes Appl.
- or -
DEC VAX

Created with Visio

New York   London   Sydney   Frankfurt

Enterprise
Applications
(CICS / IMS /
SAP / etc.)
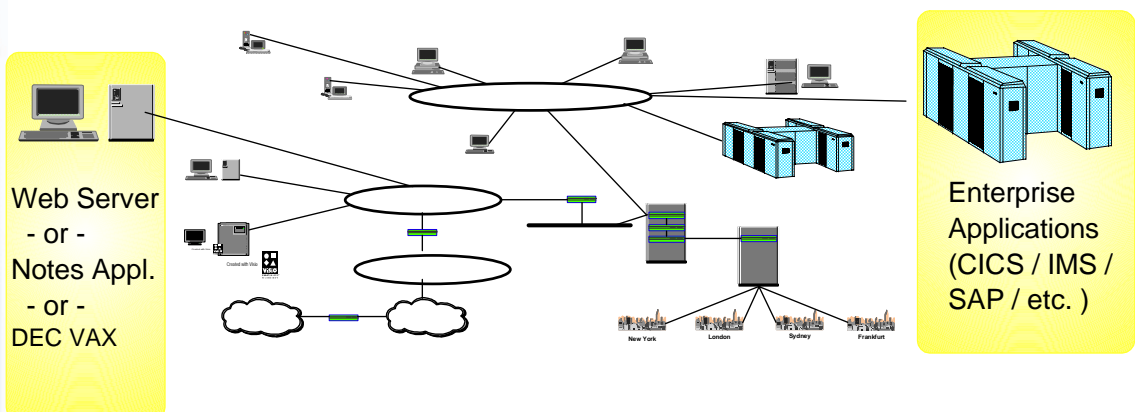
The Solution -- IBM MQSeries

- IBM's Commercial Message Product
  - Message Oriented Middleware (MOM)
- Message Delivery
  - Assured Delivery - Once and only once
  - Simple application interface
  - Supports over 35 platforms
- Transactional
- Secure
- Fast
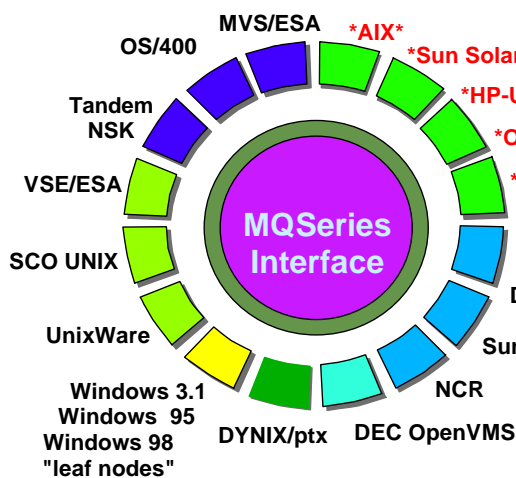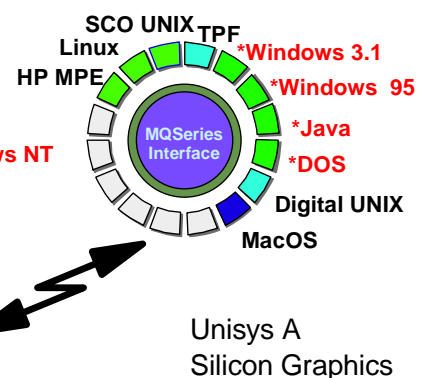- Supports Java Message Service 1.0.1
- Ideal for transporting XML

MQSeries Platform Coverage

Queue Managers

Clients only

Queue Managers:
OS/400, MVS/ESA, *AIX*, *Sun Solaris, *HP-UX, *OS/2, *Windows NT, SINIX, DC/OSx, SunOS, NCR, DEC OpenVMS, DYNIX/ptx, Windows 3.1, Windows 95, Windows 98 "leaf nodes", UnixWare, SCO UNIX, VSE/ESA, Tandem NSK

MQSeries Interface

Clients only:
SCO UNIX, Linux, HP MPE, TPF, *Windows 3.1, *Windows 95, *Java, *DOS, Digital UNIX, MacOS

MQSeries Interface

Unisys A
Silicon Graphics

plus
- *Compaq Tru64 UNIX*
and several more ...

*Version 5 Support

WebSphere software platform
Foundation Extensions - *Development*
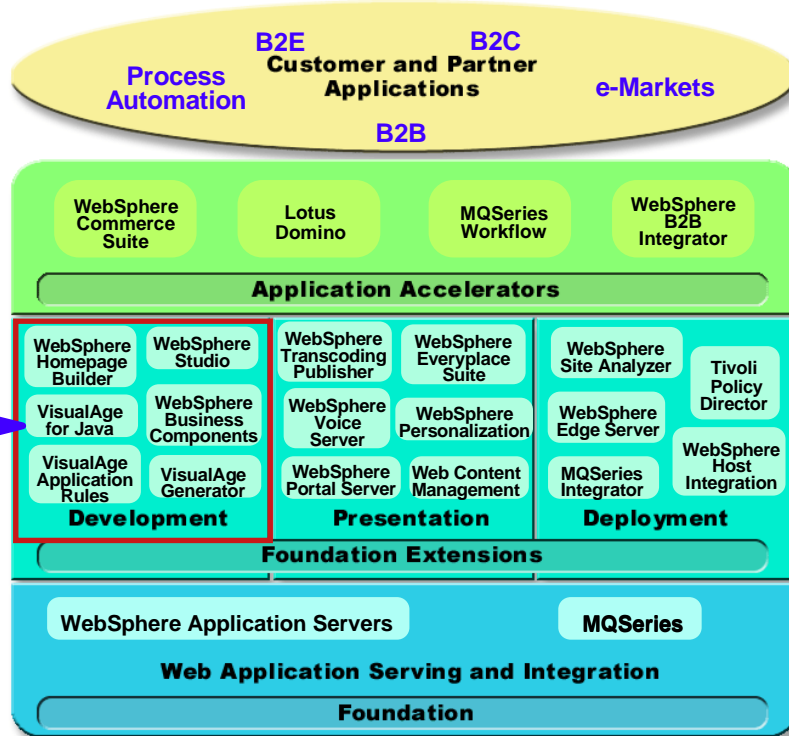
The Web Application Programming Model
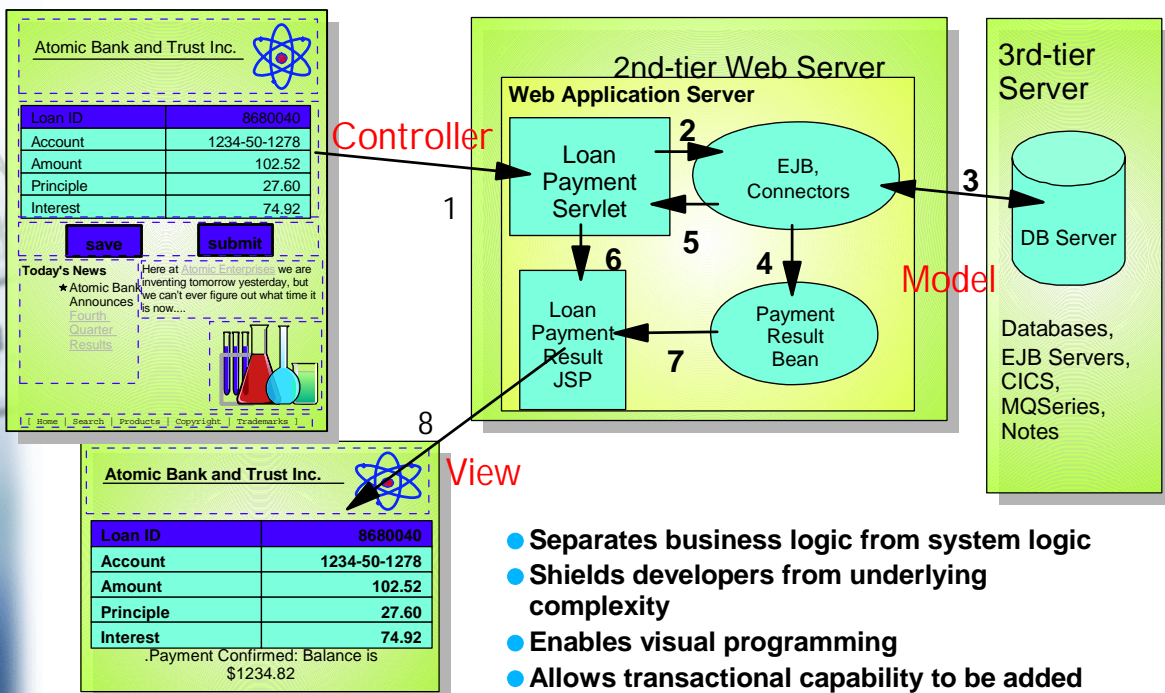
- **Separates business logic from system logic**
- **Shields developers from underlying complexity**
- **Enables visual programming**
- **Allows transactional capability to be added separately and quickly**
- **Develop once, deploy anywhere**

Application Components comparison

Servlets
- Content Generation
- Advantages
  - Java benefits
- Disadvantages
  - Constant changes required

JavaBeans
- Content Access
- Advantages
  - Reusable components
  - Easy editing
- Disadvantages
  - Not transactional

Java Server Pages
- Content Presentation
- Advantages
  - Flexible usage
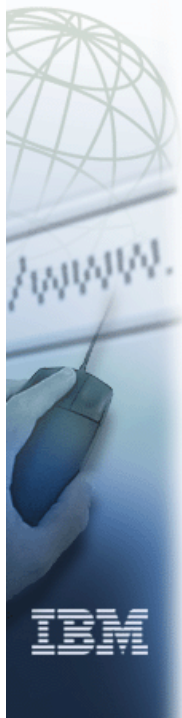 - Easier editing
- Disadvantages
  - Same as for servlets

Enterprise JavaBeans
- Transactional Content Access
- Advantages
  - Simplifies servlet programming
  - Maximizes servlet stability

Development Tools

Skill Type

Component Developers			VisualAge Java, VisualAge Generator
Business Logic Developers		VisualAge Application Rules (Versata)	
Application Analysts		Domino & Designer	
Content Authors	WebSphere Homepage	WebSphere Studio V3.5	
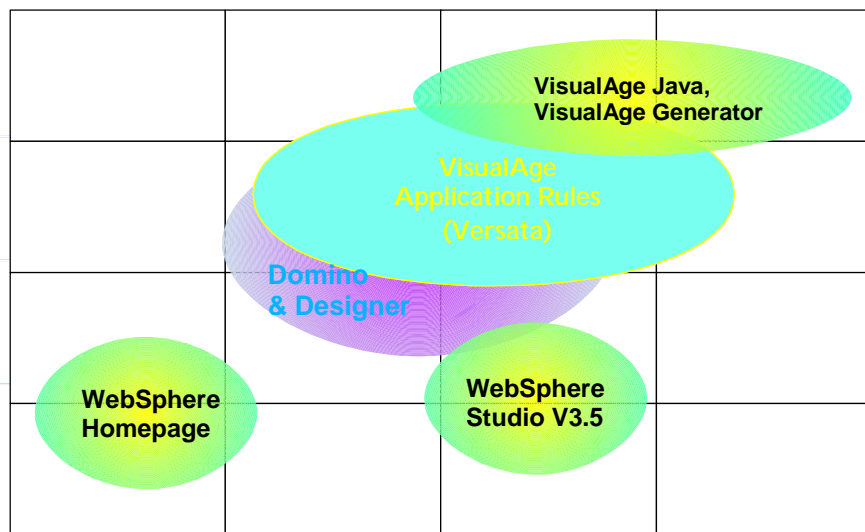
Static Publishing → Dynamic Publishing / Database-driven → Transactional

Web Site Value/Complexity

VisualAge for Java

Full Featured Java Development Environment

- Visual composition with JavaBeans
- Teamwork with shared repository, plus tight integration with 3rd Party SCM tools
- Versioning - including project resources
- Incremental Compilation
- Permanent Consistency Checking
- Coding assistance and easier JDK migration
- Integrated Debugger
- Integrated Test Environment, Servlets, JSP, EJBs
- Servlet wizard
- Built-in IBM high-performance JDK, with all Java standards and extensions: Swing, SQLJ, RMI...
- XMI Toolkit and round-trip interface with Rational Rose
- ORB interoperability -- use multiple ORBs
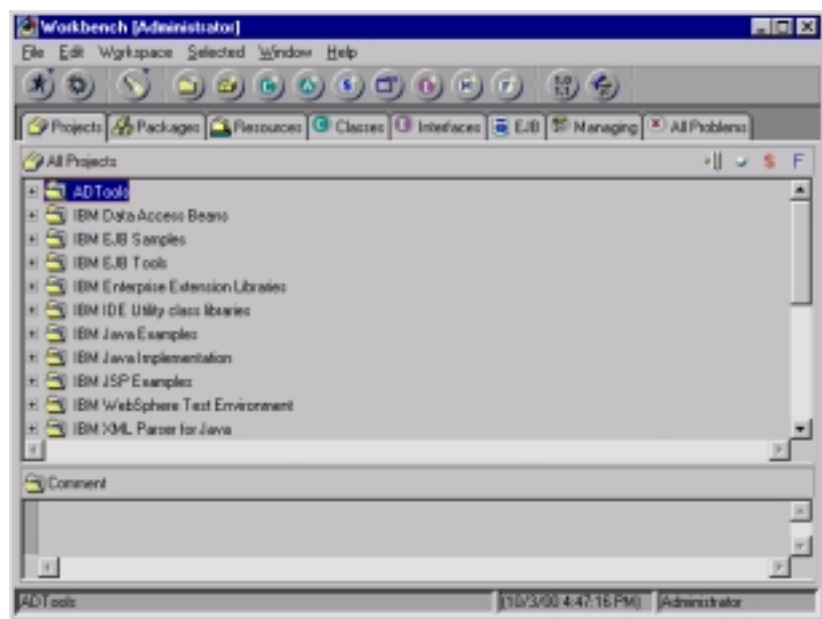- Supports Jakarta Tomcat
- Includes Domino access classes

VisualAge

The IDE Workbench Views

- Projects
- Packages
- Resources
- Classes
- Interfaces
- EJB
- Managing
- All Problems

VA Java IDE -- customized

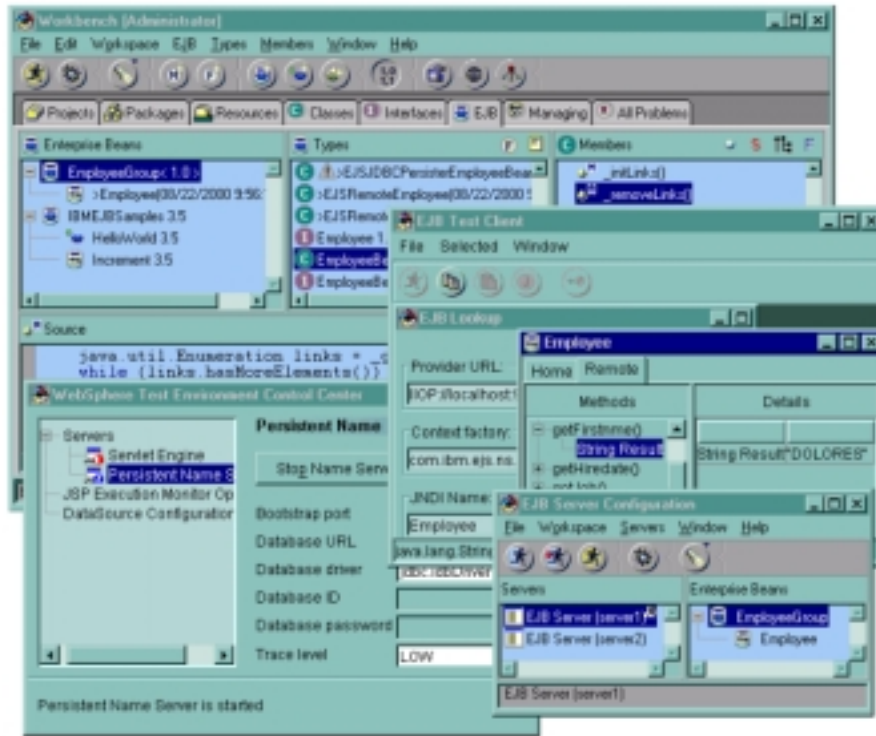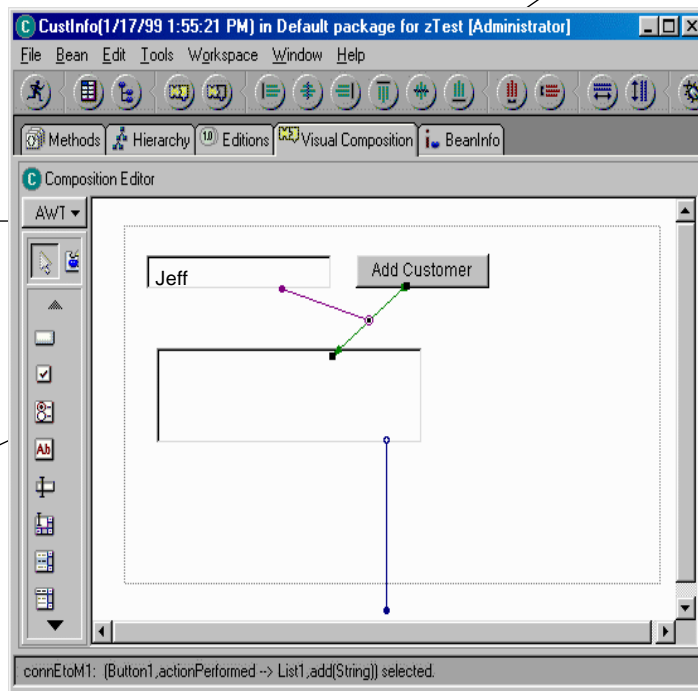# VA Java GUI Builder

Composition Editor

Bean Palette
visual beans, non-visual beans, custom beans 3rd party

Java Code
- Applets
- Applications
- JavaBeans
- JavaScript
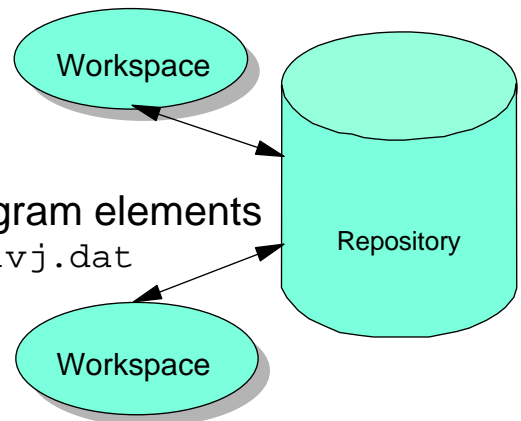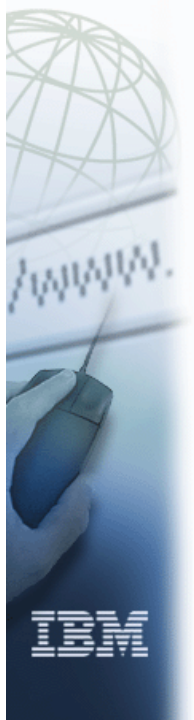
How the IDE stores data

- The Repository
  - Central store for all classes
  - Contains information of all program elements
  `x:\IBMVJava\Ide\Repository\ivj.dat`
  - May be shared

- The Workspace
  - Holds all classes presently being worked with
  - Add elements by creating or adding from repository
  `x:\IBMVJava\Ide\Program\ide.icx`
  - One per client

Manipulating Versions

- The value of versioning ...
  - To take a snapshot
  - To have a baseline for code you plan to modify
- Automatic Version Control and Source Recovery
  - History of all changes
  - Easy to experiment and back out
- Support Multiple Versions of a Project
  - Prototype through to Production
- Only one version, loaded in Workspace at a time
- Can replace with a different version from repository
- Can compare with a different version

WebSphere Studio

- **Design, develop, debug/test, and publish**
  - Page designers, graphic artists, and programmers, can all work on the same projects
  - Comprehensive tools for you or your team to create all elements of static and dynamic web sites
- **Help your multidisciplinary team work together**
  - Common view of Web project files and relationships
    - Manages Web projects and lets you manage all of interrelated files
    - Files are created and maintained by the appropriate people
    - Any tool can plug in, so you can work with your favorites
- **Main goal is to help you easily create Dynamic Web applications:**
  - Standard HTML and other Web technologies: Applets, Beans, Images, XML...
  - Wizards to build
    - Java servlets and JavaServer Pages (JSP)
    - JavaBeans
    - Database Access

WebSphere Studio Workbench

Studio Includes Everything You Need...

- Studio Workbench
  - Helps you mange and maintain your site's files
  - Creates, edits, copies and publishes files
  - Supports file sharing
- Studio Wizards
  - Gets developers up and going quickly
  - Provides support for database applications with JavaBeans
- Page Designer
  - Edits HTML & JSP pages

Page Designer Views

- The page edit area has three views...

Text editing (HTML Source)

WYSIWYG graphical (normal)
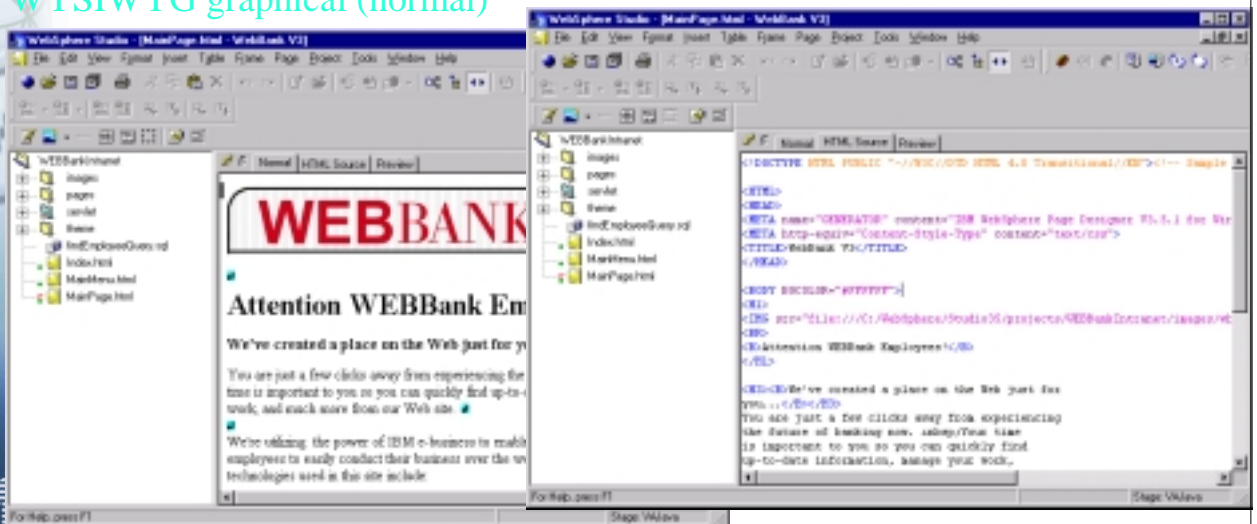
Web Application Development and Roles

Concern	Page Layout and Content (View)	Application Flow (Controller)	Business Logic (Model)	Operational Environment (Application)
Role	Page Producer	Application Assembler	Bean Builder	Web Master
Components Produced	Java Server Pages, HTML, MIME types	HTTP Servlets, JavaBeans	Java Beans	Configuration Data, Site Usage Statistics
Components Used	JavaBeans	JavaBeans	Java Beans+ others	All
Programming Skills Required	Little or None	Pure Java	Java + others	None
Tools	WYSIWYG Editors	Specialized Wizards	Java IDE	Admin

"Let the right expert do the work."

WebSphere Business Components

- Tools and EJBs that enable RAD
- Platform-neutral
- Two levels
  - Advanced components
    - Coarse-grained
    - Provide large independent parts which when assembled together can be used to create an application
  - Base Components
    - Fine-grained
    - Provide smaller interrelated parts used either to directly create an application or to create coarse-grained components
- http://www.ibm.com/software/components/annc112800.html

WebSphere software platform
Foundation Extensions - Presentation

B2E   **B2C**
Customer and Partner Applications
Process Automation   **e-Markets**
B2B

| WebSphere Commerce Suite | Lotus Domino | MQSeries Workflow | WebSphere Business Integrator |

Application Accelerators

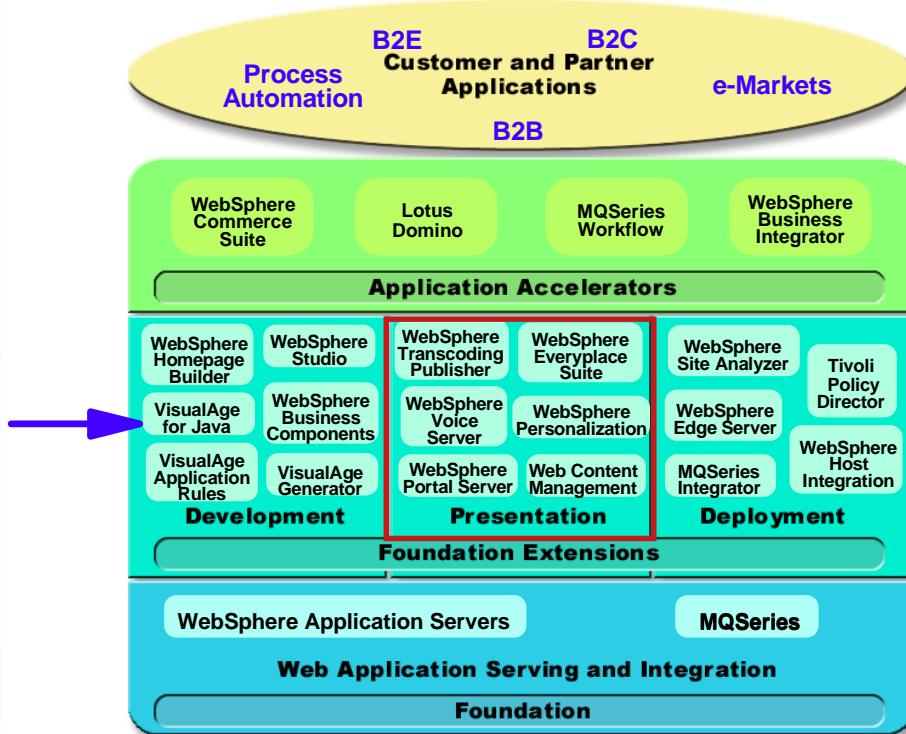| WebSphere Homepage Builder | WebSphere Studio | WebSphere Transcoding Publisher | WebSphere Everyplace Suite | WebSphere Site Analyzer | Tivoli Policy Director |
VisualAge for Java	WebSphere Business Components	WebSphere Voice Server	WebSphere Personalization	WebSphere Edge Server	WebSphere Host Integration
VisualAge Application Rules	VisualAge Generator	WebSphere Portal Server	Web Content Management	MQSeries Integrator	
Development		**Presentation**		**Deployment**	

Foundation Extensions

| WebSphere Application Servers | MQSeries |

Web Application Serving and Integration

Foundation

Multiple Devices Requirement

Web browser — HTML

H T T P S

Business Application Servlets — **Ent. Conn.** — API

XML

WAP or UP.link Gateway — WML/HDML

Mobile Net Connect Gateway — HTML

Palm VII — **Palm.Net Gateway** — HTML Subset

Pager — **Pager Gateway** — FLEX

TRANSCODER SERVLET

Profile Manager (ODS)

Profile access & Maintenance

LDAP

Device & User preferences

XSL

Style Sheets

Web Application Server (WebSphere)
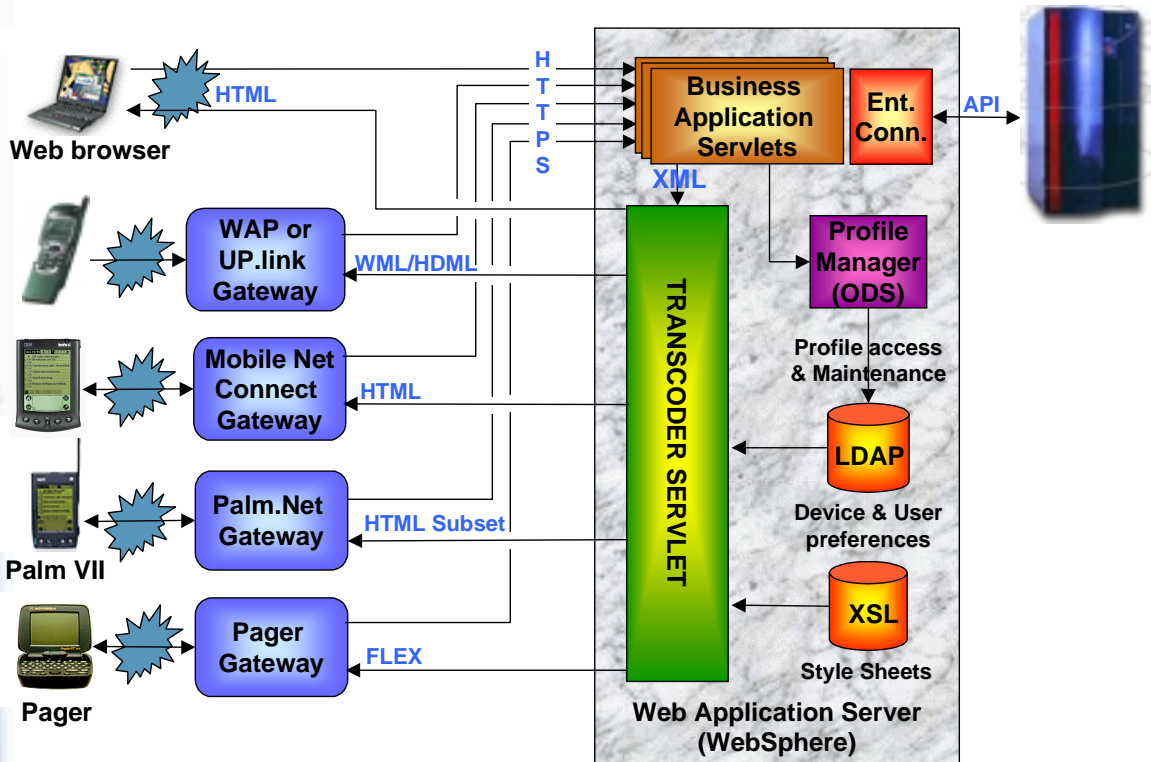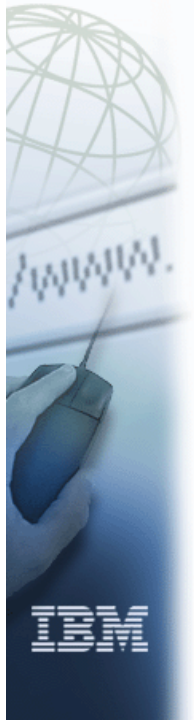
The Solution to Data Interchange

Transcoding

- Software that filters, enhances, converts, or reformats data (e.g., Host and Web content) to:

  - Match the form factor and capabilities of the client device

  - Personalize data to user or environmental requirements

  - Enhance business to business communications via XML technology

  - Provide a wide range of devices and systems and their users with better access to information

WebSphere Transcoding Publisher

- Transcoding Publisher **JavaBeans** can be included within WebSphere applications to provide transcoding services

- Transcoding Publisher **Servlets** can complement unchanged WebSphere applications to transform content

- **Proxy** configurations enable wide range of placement options for transcoding services

WebSphere Everyplace Suite

- Develop, manage and deliver Web and enterprise applications to a variety of devices, including wireless handsets, PDAs and other Internet appliances

- Combines into one product the necessary "software ingredients" for Pervasive Computing

WebSphere Everyplace Suite

Suite Content:
- Wireless GW
- Transcoder
- Boundary Server
- Edge Server
- Subscriber Mgmt
- Directory
- WAS
- Synchronization

Connectivity
- Protocol Convert
- Wireless Gateway

Content Adaptation
- Asynchronous Messaging
- Emulation
- Sync Engine
- Transcoding
- Plug-ins

Security
- Authentication
- Firewall
- Encryption
- VPN Tunneling

Optimization
- Wireless Opt.
- Load Balancing
- Caching

Management Systems
- Accounting Info.
- User Enablement
- Cust. Service
- Billing Info.
- Self Care
- Provisioning
- Subscriber Mgmt.
- Device Mgmt.

Services
- LDAP
- Operator Console
- Install/Upgrade
- Server Configuration

HTTP Server

WebSphere Personalization

- Deliver pages that are customized to the interests and needs of each site visitor

- Personalization elements include
  - User Profile
    - Users of the site
    - Contains attributes about the user
    - Groups and Hierarchies
    - Implemented as EJBs
  - Content Model
    - Products, articles, programs, etc
    - Defines attributes about the content
    - Groups and Hierarchies
  - Matching Technology
    - Filtering, Rules or Recommendation Engines or combinations of all three
    - Matches user to the "right" content
  - Explicit/Implicit population of user and content repositories
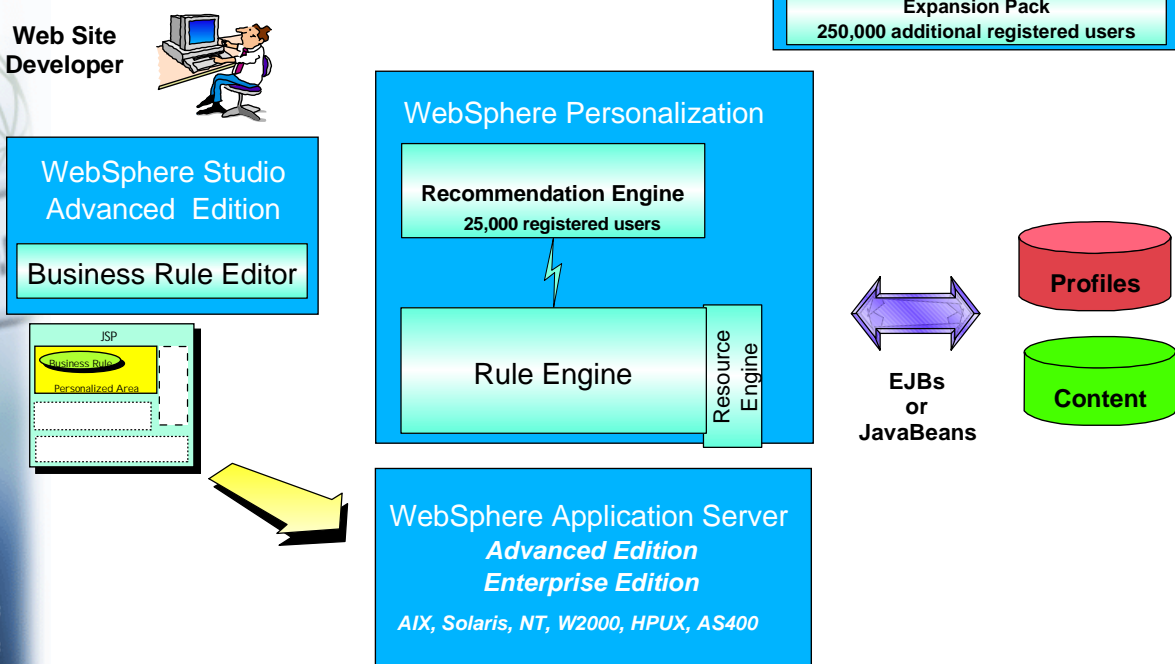 - Feedback on personalization effectiveness

```
If
    user income > $50,000
  and
    investment risk
      tolerance is high,
then
  select * from Stocks
    where
      category=Internet Startups
```

WebSphere Personalization

Web Site Developer

WebSphere Studio Advanced Edition

Business Rule Editor

JSP
Business Rule
Personalized Area

WebSphere Collaborative Profiles

Expansion Pack
250,000 additional registered users

WebSphere Personalization

Recommendation Engine
25,000 registered users

Rule Engine

Resource Engine

WebSphere Application Server
Advanced Edition
Enterprise Edition
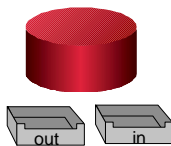*AIX, Solaris, NT, W2000, HPUX, AS400*

Profiles

EJBs
or
JavaBeans

Content

WebSphere Content Management

"Get me all the info I need for ..."

Integrated Information

Business Process	Analysis	Computer Generated Output	Images & MultiMedia	Experience
‣ Order status ‣ A/R situation	‣ Customer profile ‣ Buying patterns	‣ Invoices	‣ Correspondence ‣ Analyst reports ‣ Annual reports	‣ Expertise
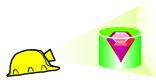
---

WebSphere Portal Server

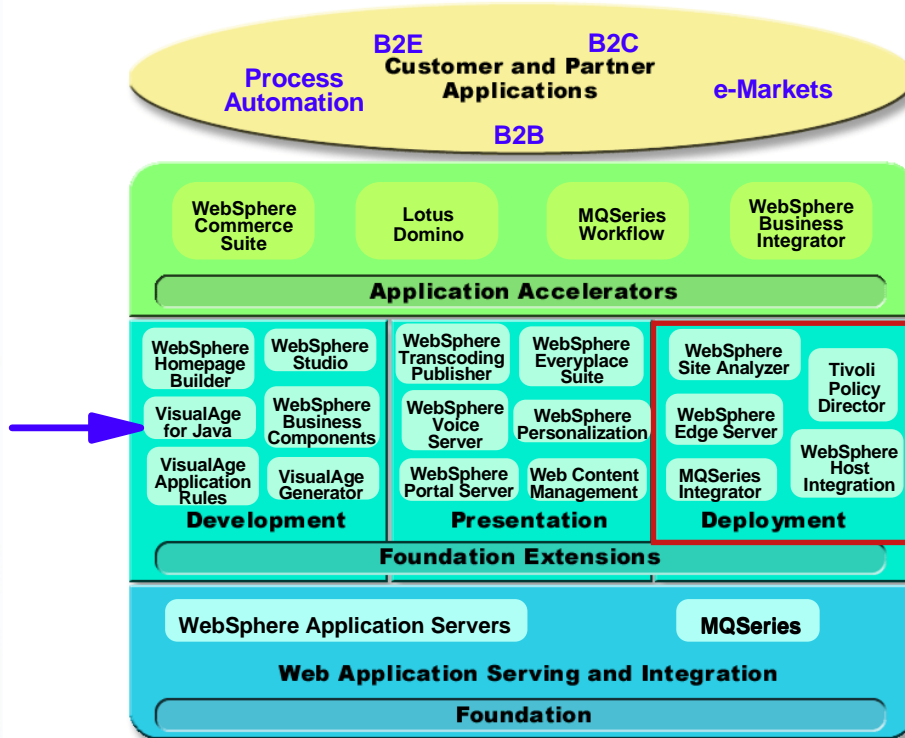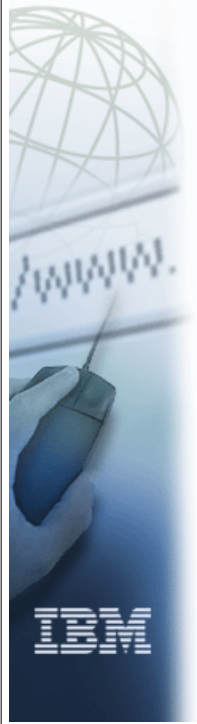- Allows companies to build their own custom portal Web sites for employees, business partners and customers
- Includes
  - WebSphere Personalization
  - The IBM Enterprise Information Portal (federated search engine)
  - Tivoli for management
- Includes information, application, collaboration, integration, and management services
- Works with WebSphere Content Publisher
- IBM and Lotus joint development

WebSphere software platform
Foundation Extensions - Deployment

Customer and Partner Applications

B2E   B2C

Process Automation   e-Markets

B2B

Application Accelerators

| WebSphere Commerce Suite | Lotus Domino | MQSeries Workflow | WebSphere Business Integrator |

Development

- WebSphere Homepage Builder
- WebSphere Studio
- VisualAge for Java
- WebSphere Business Components
- VisualAge Application Rules
- VisualAge Generator

Presentation

- WebSphere Transcoding Publisher
- WebSphere Everyplace Suite
- WebSphere Voice Server
- WebSphere Personalization
- WebSphere Portal Server
- Web Content Management

Deployment

- WebSphere Site Analyzer
- Tivoli Policy Director
- WebSphere Edge Server
- MQSeries Integrator
- WebSphere Host Integration

Foundation Extensions

WebSphere Application Servers   MQSeries

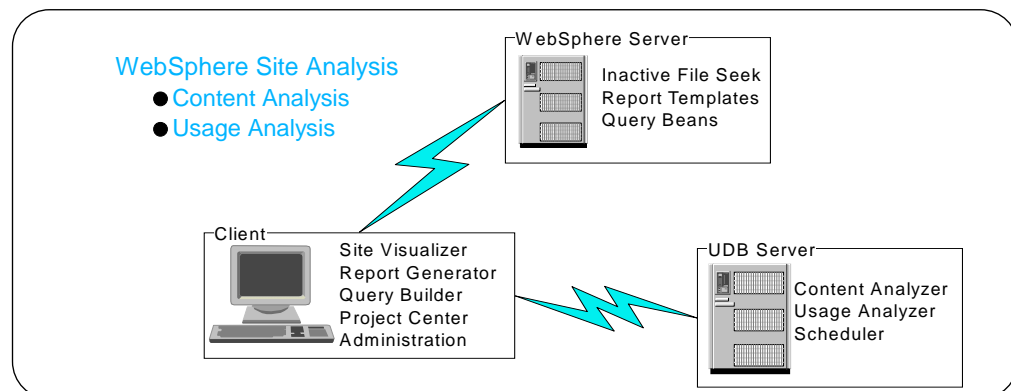**Web Application Serving and Integration**

Foundation

WebSphere Site Analyzer

Understand, monitor and improve structure and usage patterns of web sites, and assist in personalizing site content

Usage:
- **Measure and optimize usage** rates (WebMaster)
- **Build the most effective designs** for personalized content (page designers)
- **Improve site flows** after initial deployment (creative director)
- **Find structural web site problems** (creative director)
- **Track usage** profiling and **behavior analysis** to ensure effective customized, personalized content delivery (analyst)

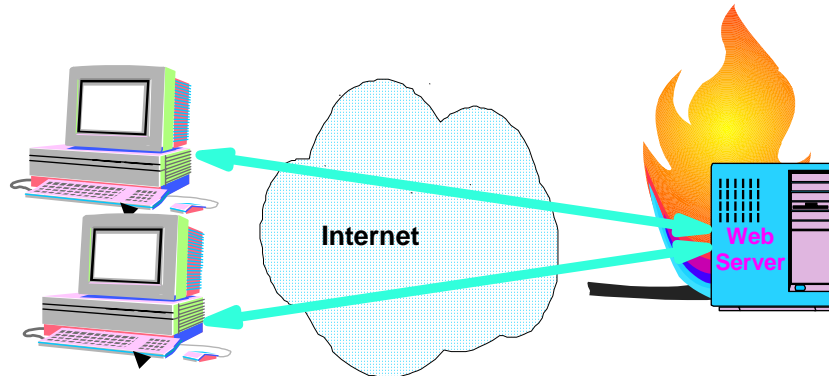*First shipped with WAS 3.0, now a separate product*

WebSphere Site Analysis
- Content Analysis
- Usage Analysis

WebSphere Server
Inactive File Seek
Report Templates
Query Beans

Client
Site Visualizer
Report Generator
Query Builder
Project Center
Administration

UDB Server
Content Analyzer
Usage Analyzer
Scheduler

WebSphere Edge Server

Plan for success...Or Else!

Internet

Web Server

Rapid growth, Peak Loading problems
- ► Web Server connection limitations
- ► Time to recover from failures, maintenance
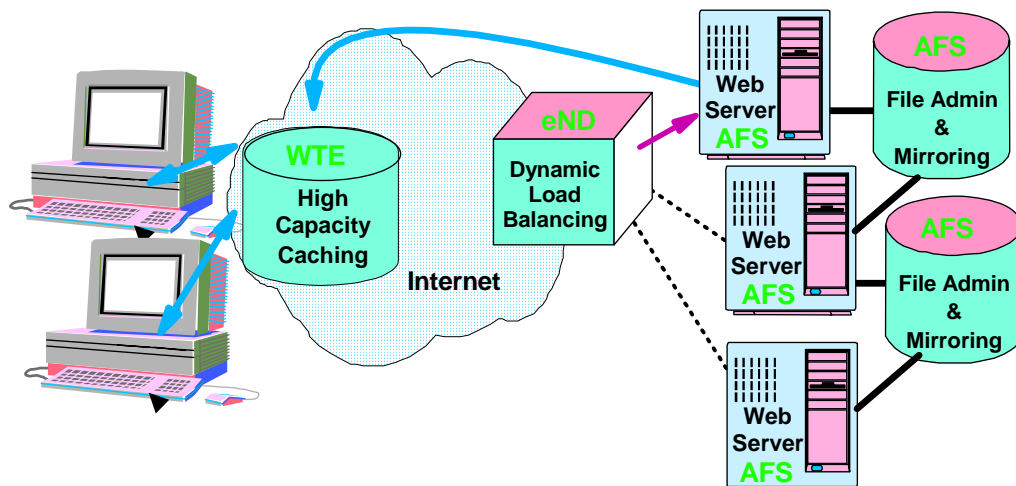- ► 'Crash & Burn' under peak loads - 'Hot Spots'
- ► User dissatisfaction

WebSphere Edge Server

Scalability, Performance, and Availability

WTE High Capacity Caching

Internet

eND Dynamic Load Balancing

Web Server AFS

AFS File Admin & Mirroring

Web Server AFS

AFS File Admin & Mirroring

Web Server AFS

MQSeries Family

MQSeries Workflow

- Workflow, Process flow
- Application Svcs
- Tools

MQSeries Integrator

- Transforms, Rules, Routing
- API Framework
- Templates, Utilities
- XML
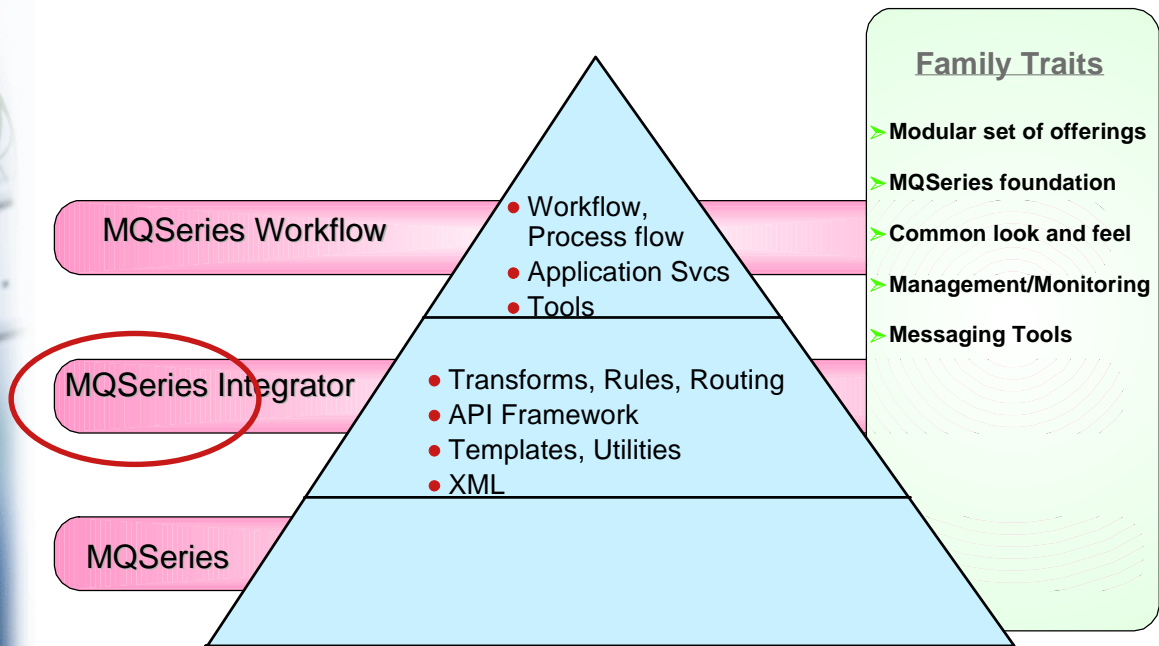
MQSeries

The Challenge: Incompatible Message Formats

Application A

name;address;amount

amount;name;address

Application C
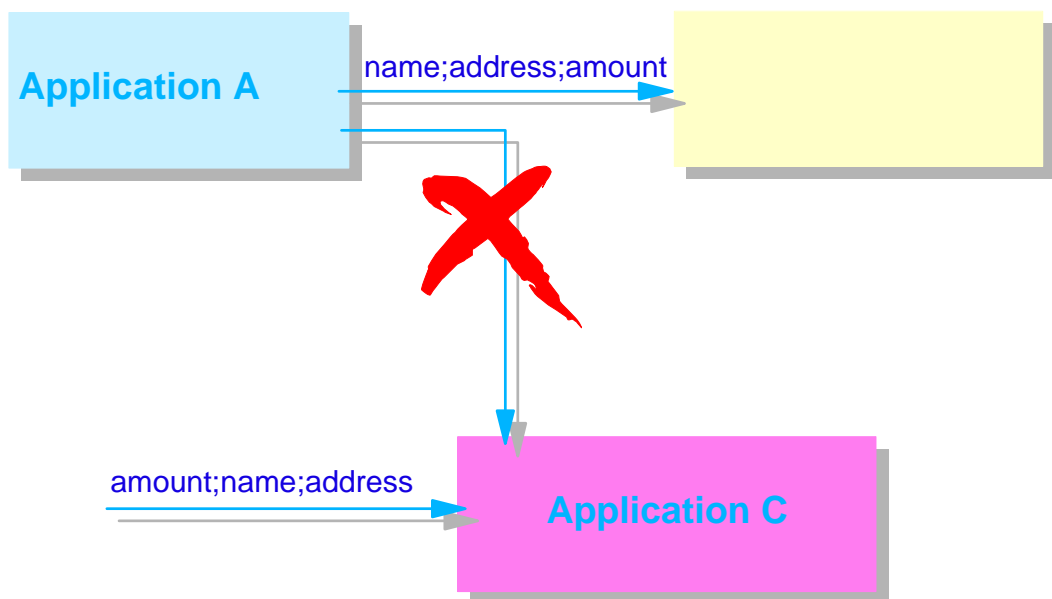
The Challenge: Point-to-Point Links
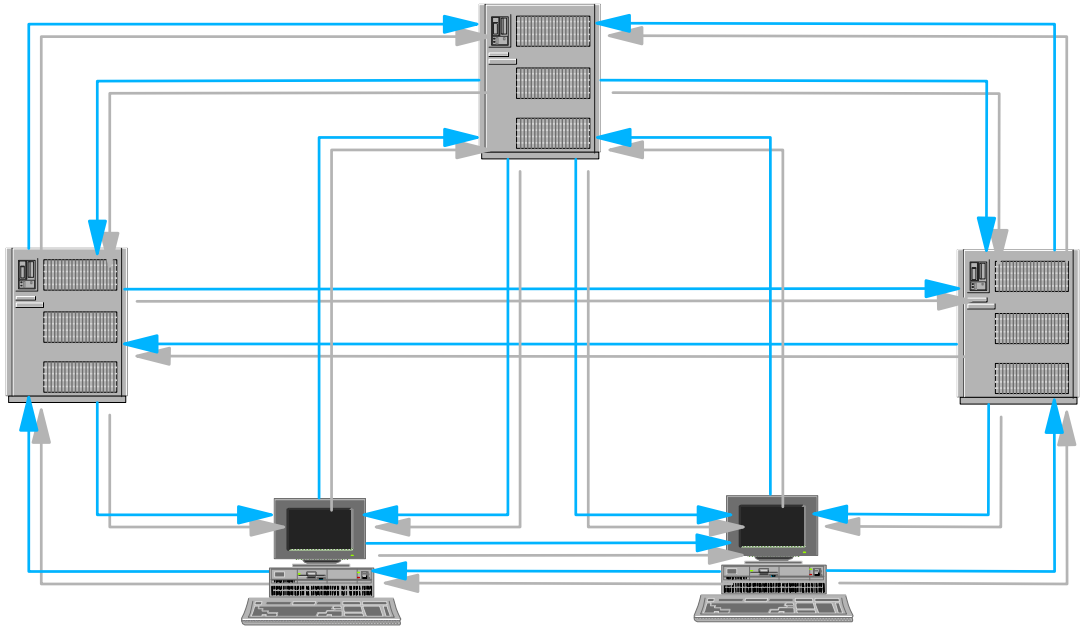
The Solution: MQSeries Integrator

✔ Intelligent Message routing -- is a **hub**
✔ Rules-based Data transformation

Q Mgr A

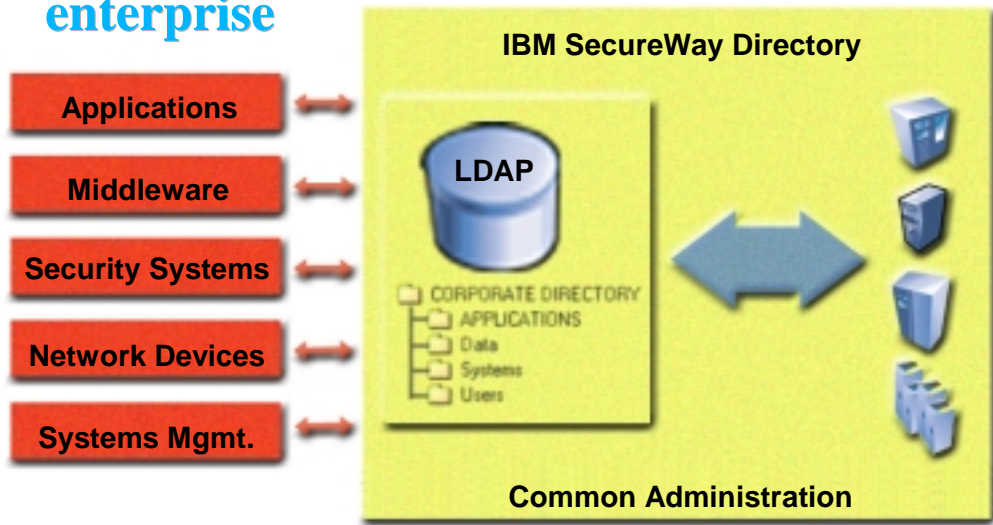SSN#   Dept#   50000

LastName FirstName $ 50,000

Q Mgr F

Q Mgr B

MQ Integrator
(QMgr)
Rules

CICS Header ...   SSN#   50000

Q Mgr E

Q Mgr C

Q Mgr D

FirstName LastName   SSN#   50000
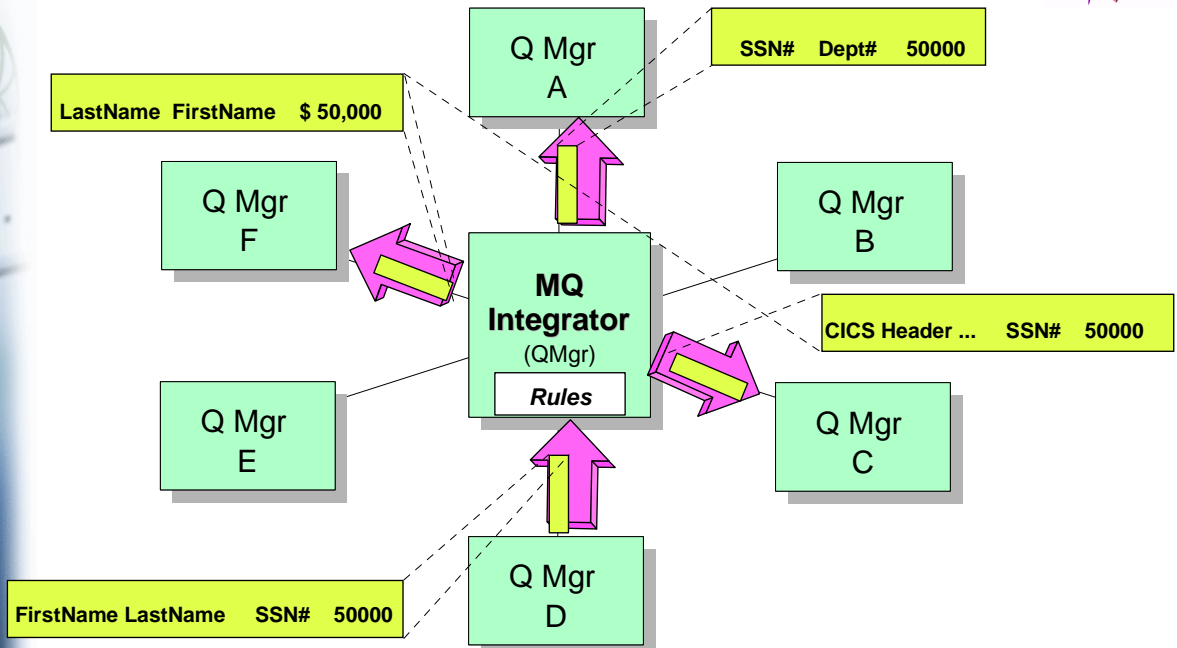
SecureWay LDAP Directory Server

A common directory for the enterprise

Applications

Middleware

Security Systems

Network Devices

Systems Mgmt.

IBM SecureWay Directory

LDAP

CORPORATE DIRECTORY
APPLICATIONS
Data
Systems
Users

Common Administration

A single consistent view of all your directory information

IBM Offers a Complete Solution

Internet

Cluster
WebSphere App Server
Servlets/JSPs/EJBs

Admin console
WebSphere App Server

load balancing
RMI-IIOP

load balancing
TCP/IP

HTTP Servers

network dispatcher
+ 'standby'

WebSphere Edge Server

Shared
HA
DB

LDAP

WebSphere software platform for e-business

Customer and Partner Applications
B2E   B2C   B2B

Process Automation   e-Markets

Application Accelerators

WebSphere Commerce Suite	Lotus Domino	MQSeries Workflow	WebSphere Business Integrator

Development

- WebSphere Homepage Builder
- WebSphere Studio
- VisualAge for Java
- WebSphere Business Components
- VisualAge Application Rules
- VisualAge Generator

Presentation

- WebSphere Transcoding Publisher
- WebSphere Everyplace Suite
- WebSphere Voice Server
- WebSphere Personalization
- WebSphere Portal Server
- Web Content Management

Deployment

- WebSphere Site Analyzer
- Tivoli Policy Director
- WebSphere Edge Server
- MQSeries Integrator
- WebSphere Host Integration

Foundation Extensions

- WebSphere Application Servers
- MQSeries

Web Application Serving and Integration

Foundation

IBM Corporation

WebSphere software platform
Application Accelerators

- WebSphere Commerce Suite

- Lotus Domino

- MQSeries Workflow

- Business Integrator

Websphere Commerce Suite

- **Objectives:**
  - ▶ Provide the industry leading integrated e-Commerce Solution
    - ✔ Robust application server platform
    - ✔ Complete e-Commerce solution based on IBM best of breed technology
    - ✔ Performance, reliability, scalability, robustness
    - ✔ Open and extensible framework based on industry standards
- **Benefits**
  - ▶ Modular & robust solution that satisfies short term needs and longer term growth and extensibility requirements
  - ▶ Highly scalable solution that grows to meet the business demands
  - ▶ Complete solution from a single vendor

WCS V5 Themes

- **New Commerce Server**
  - Java, EJBs, JSPs
  - Multicultural support
  - Pricing/discounts
  - Pervasive computing enablement
  - B2B enhancements
  - Enhanced operational tools
- **Commerce Accelerator**
- **Business Intelligence**

WCS Marketplace Edition

Catalog	**Orders**	**Payment**

Business-to-Consumer

Integration & Workflow	**tpaML**	**Negotiated Pricing**

Business-to-Business

WebSphere e-marketplace

WebSphere Business Integrator

WebSphere Commerce Suite

- **Catalogs**
- **Pricing**
- **RFI / RFQ**
- **Negotiations**
- **Contracts**
- **Auctions**

e-markets

Lotus Domino

- An integrated messaging and Web application software platform

- **Mail Server**
  - Full support for the latest Internet mail standards
  - Industry-leading messaging capabilities -- all in one manageable and reliable infrastructure

- **Application Server**
  - Open, secure platform
  - Optimized to deliver collaborative Web apps that integrate your enterprise systems with changing business processes

- **Enterprise Server**
  - All of the above
  - Plus clustering for the high availability/reliability required by mission-critical applications
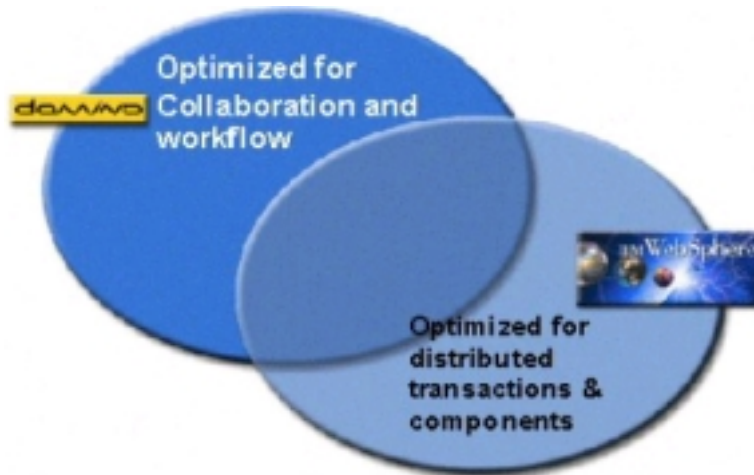
Lotus Domino

- Works well with WebSphere

Optimized for Collaboration and workflow

Optimized for distributed transactions & components

- Often used together

MQSeries Workflow

Family Traits

> **Modular set of offerings**

> **MQSeries foundation**

> **Common look and feel**

> **Management/Monitoring**

> **Messaging Tools**

MQSeries Workflow
- Workflow, Process flow
- Application Svcs
- Tools

MQSeries Integrator
- Transforms, Rules, Routing
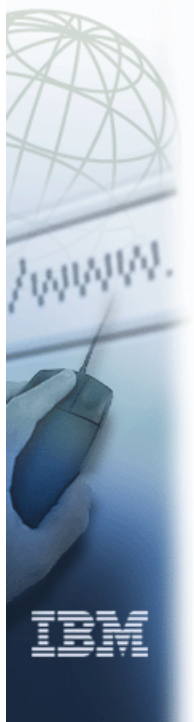- API Framework
- Templates, Utilities
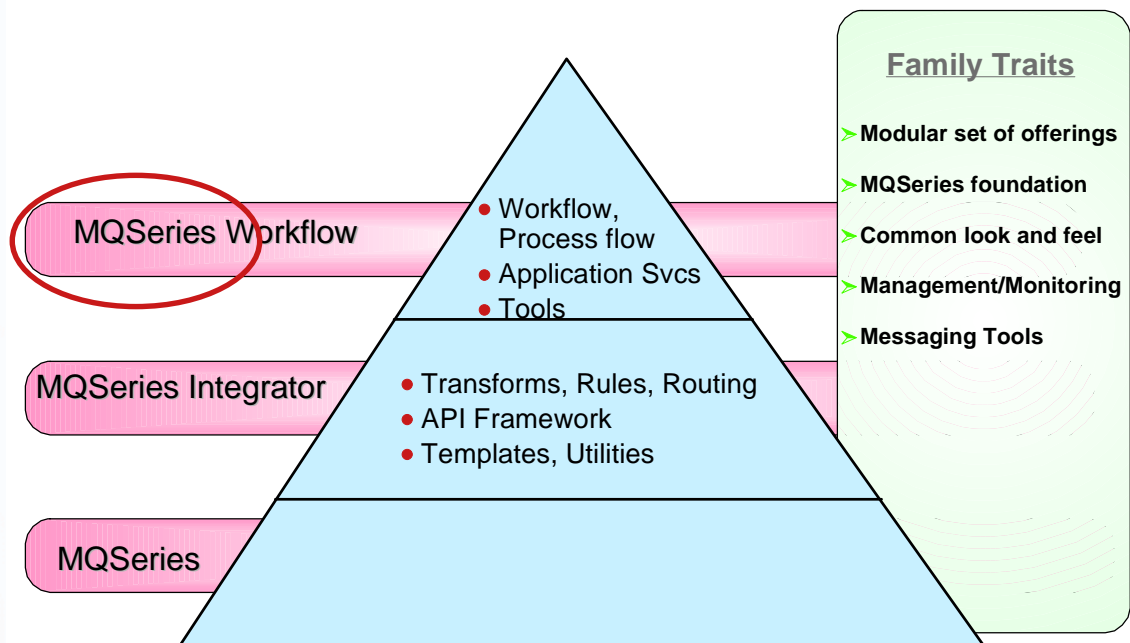
MQSeries

MQSeries Workflow

- Model-driven e-business process automation and tracking
- Combines the ability to define and manage the business processes, organization, and infrastructure
- Removes the flow dependency from the application
- Allows you to extract standard data management functions from an application program
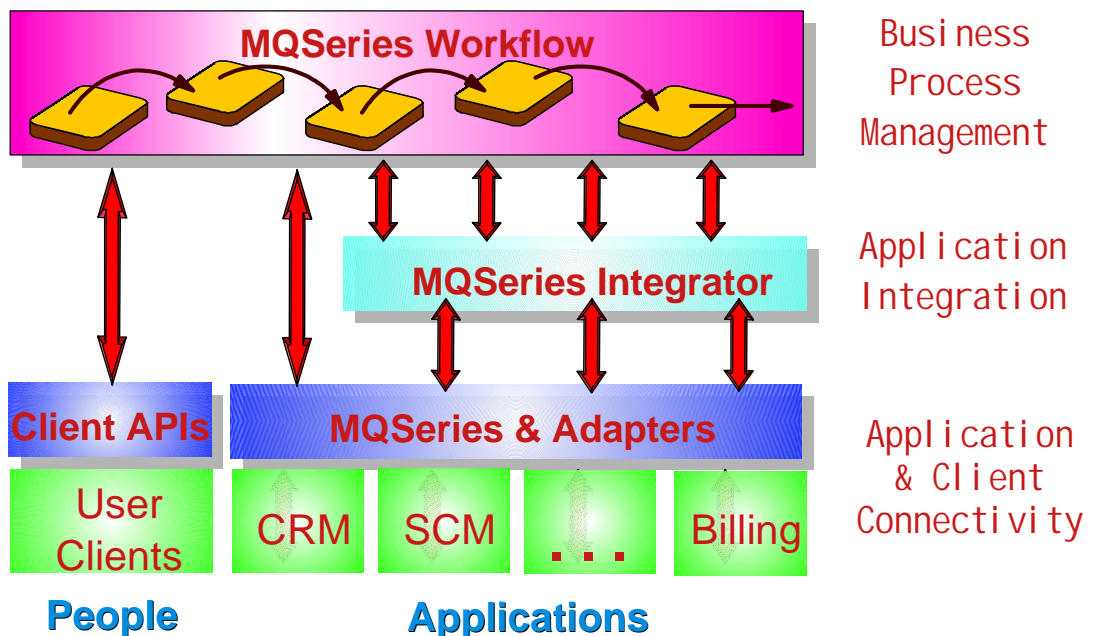- Transactional and universal integration based on MQSeries and XML

MQSeries Family

MQSeries Workflow

Business Process Management

MQSeries Integrator

Application Integration

Client APIs   **MQSeries & Adapters**

Application & Client Connectivity

User Clients   CRM   SCM   . . .   Billing

People   **Applications**

WebSphere Business Integrator (Formerly WebSphere B2B Integrator)

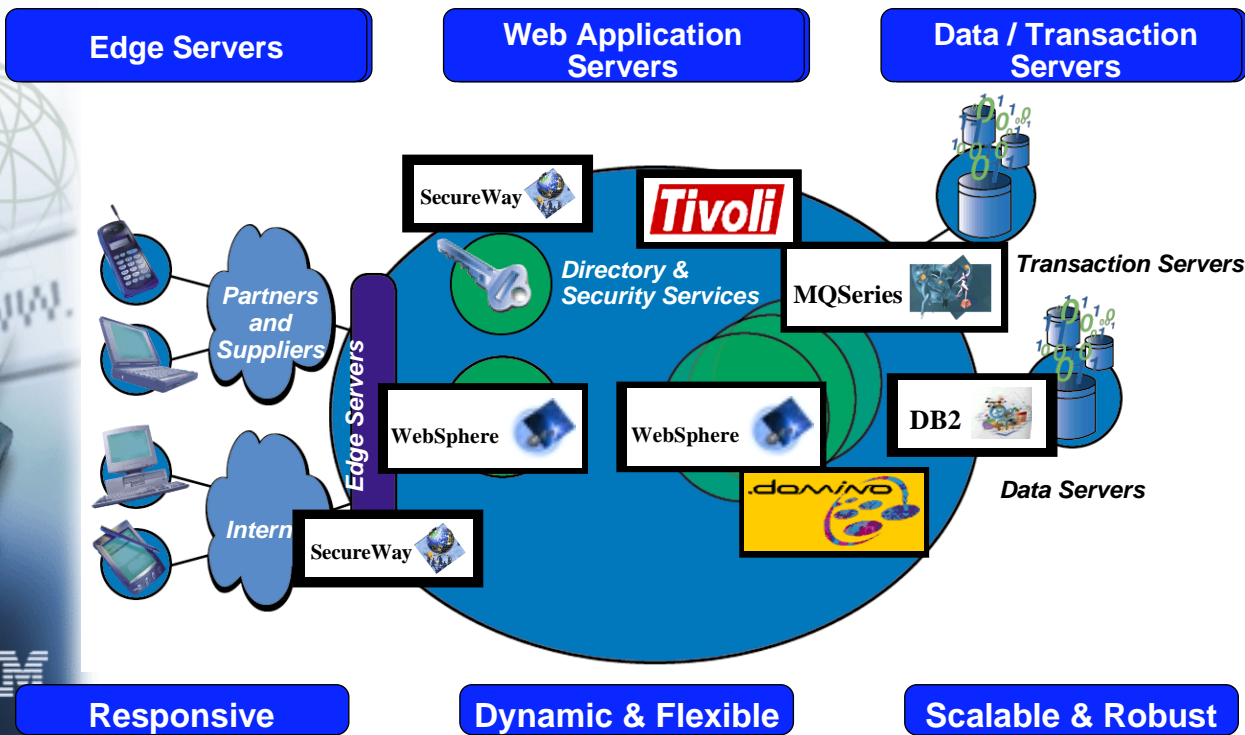## An integrated framework for end-to-end e-business process management (e-BPM)
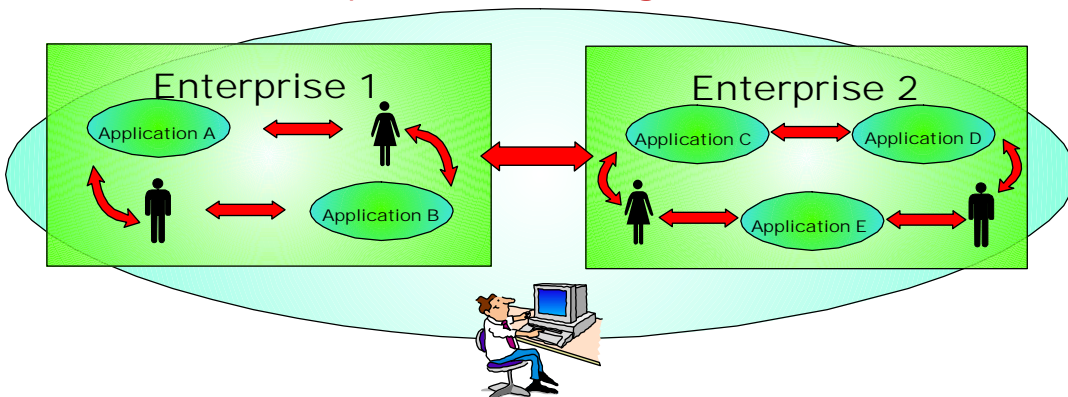
Enables companies to
create, execute, and manage business processes
that span diverse applications, enterprises, and people...
...and to manage them -- as well as the underlying
operational infrastructure -- as a complete system.

Topology for e-business

Edge Servers   **Web Application Servers**   **Data / Transaction Servers**

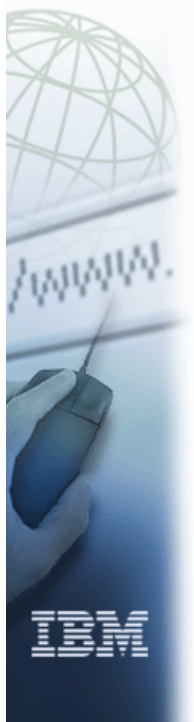**Responsive**   **Dynamic & Flexible**   **Scalable & Robust**

Key Differentiators of WebSphere

- End-to-end Solution and Consistency
- Performance, Scalability, and Reliability
- Supports Growth of Web Applications
- Promotes Effective team Development
- Promotes Componentized Web Applications and Reuse of parts
- Cross Platform/Portable Applications
- Supports all Java/Internet Standards
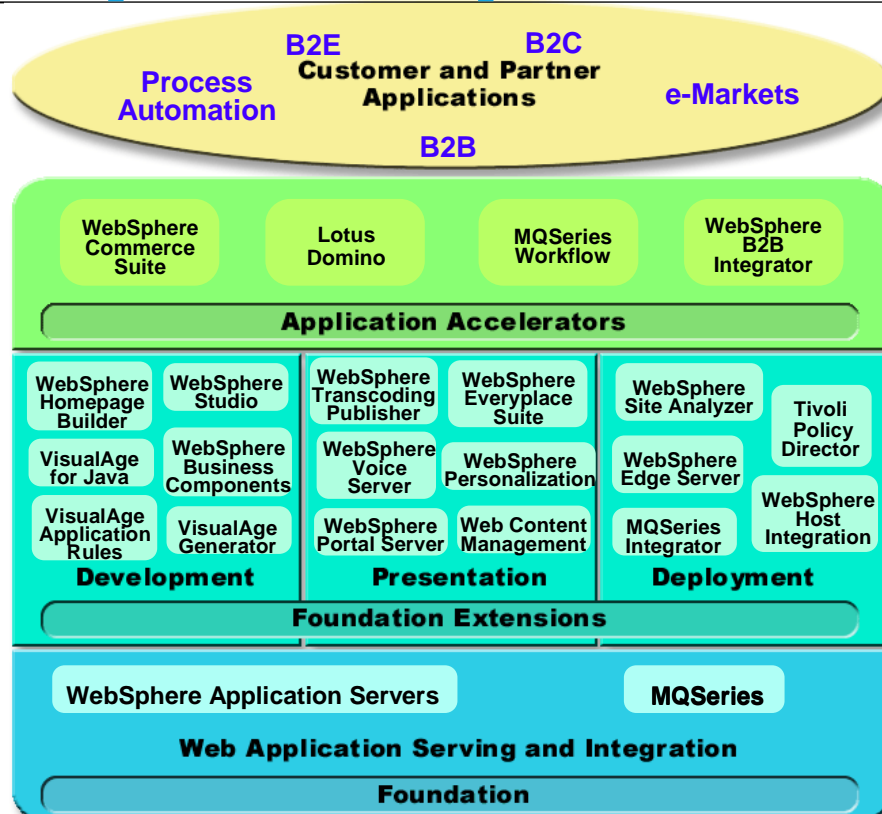- Combines Robust Back-end connectivity with Flexible interfaces
- Based on open standards

WebSphere software platform for e-business

B2E   **B2C**
Customer and Partner Applications
Process Automation   **e-Markets**
B2B

| WebSphere Commerce Suite | Lotus Domino | MQSeries Workflow | WebSphere B2B Integrator |

Application Accelerators

WebSphere Homepage Builder	WebSphere Studio	WebSphere Transcoding Publisher	WebSphere Everyplace Suite	WebSphere Site Analyzer	Tivoli Policy Director
VisualAge for Java	WebSphere Business Components	WebSphere Voice Server	WebSphere Personalization	WebSphere Edge Server	
VisualAge Application Rules	VisualAge Generator	WebSphere Portal Server	Web Content Management	MQSeries Integrator	WebSphere Host Integration
Development		**Presentation**		**Deployment**	

Foundation Extensions

| WebSphere Application Servers | MQSeries |

Web Application Serving and Integration

Foundation

Useful IBM URLs

- **IBM Software:** www.software.ibm.com
  - Spec sheets for all products
  - downloadable trial versions
  - support and e-fixes
- **PartnerWorld for Developers:** www.developer.ibm.com
  - Marketing & sales support
  - Technical support
  - Education
- **DeveloperWorks:** www.ibm.com/developerWorks
  - Technology Zones: java, standards, web architecture ...
  - Developer offerings: How to buy, downloads, support
  - Education, tutorials, White Papers, tips...
- **Redbooks:** www.redbooks.ibm.com
  - Extensive documentation on Websphere, WCS, VAJ, DB2, architecture and developement...
  - Downloadable and printable PDFs on-line
- **AlphaWorks:** www.alphaworks.ibm.com
  - IBM emerging "alpha-code" technologies
- **Case Studies:**
  http://www2.software.ibm.com/casestudies/swcs.nsf/topstories
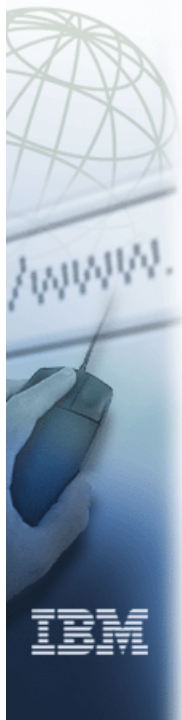
WebSphere software platform for e-business

Takes your Company

Further
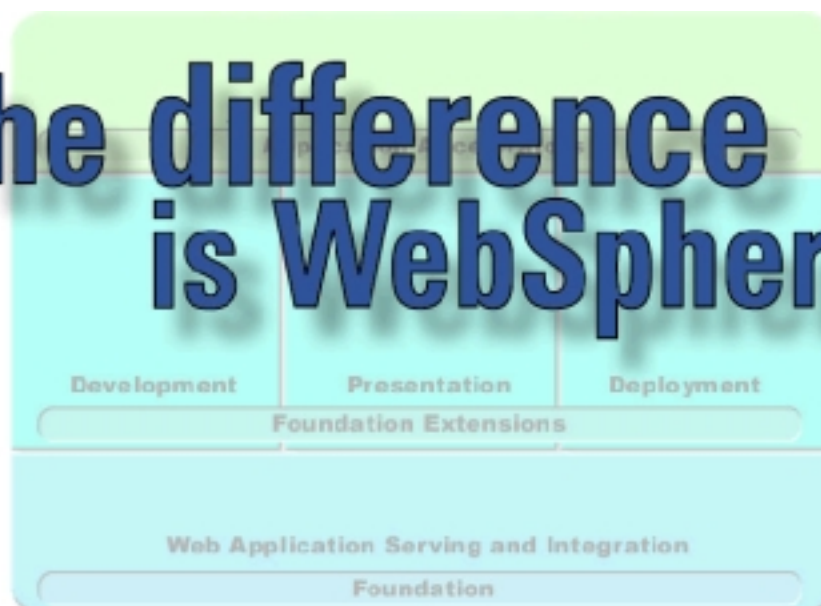
End

Thanks for Attending!

Questions?