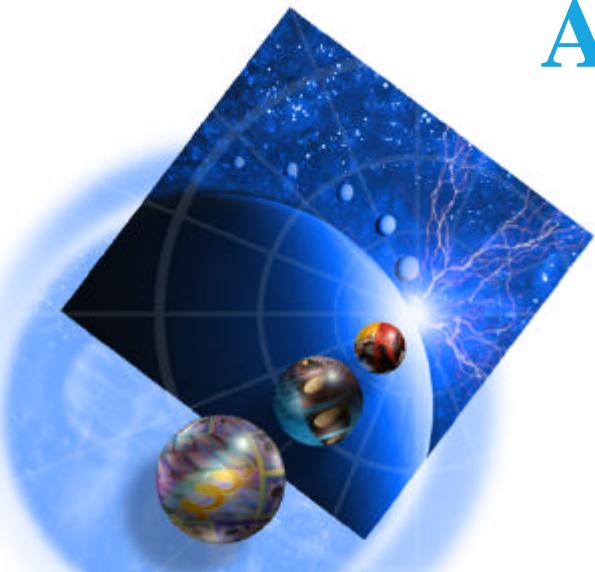




IBM WebSphere Family and Web Application Architecture





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/www/www/



IBM

IBM e-Business base

IBM e-Business Application Framework help you:

- expand current system
- create new system

IT

Web

e

NCF supports Industry Standard:

Java	CORBA
HTML	IIOP
XML	SET
Browsers	HTTP
RMI	SSL
	TCP/IP
	Web Servers



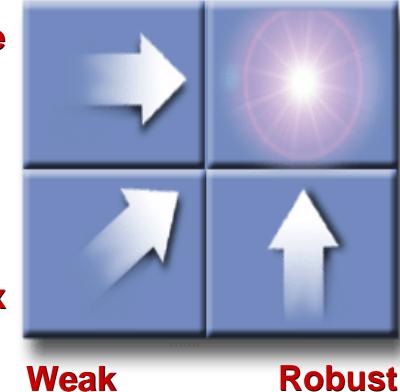
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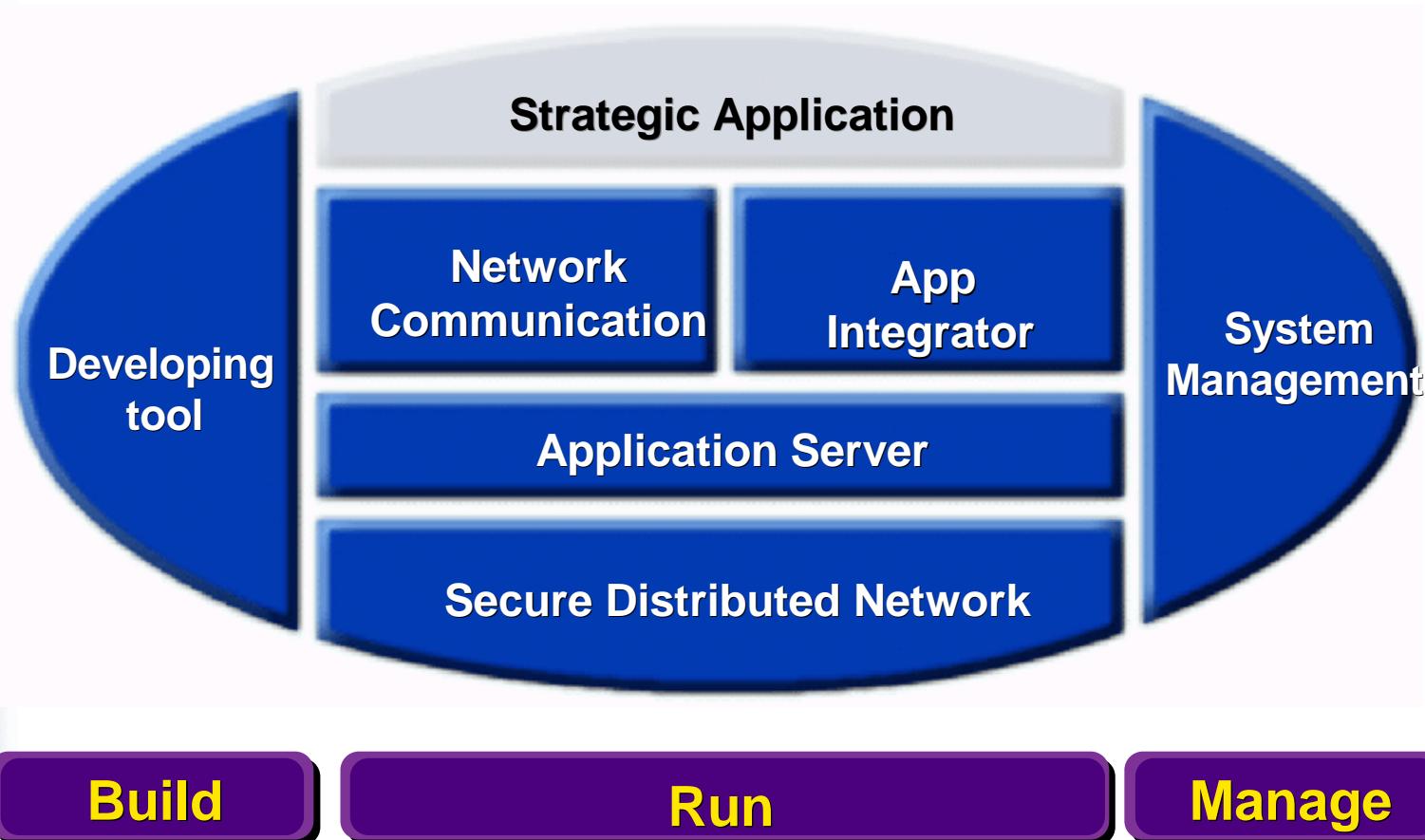
Web Application Evolution

- ▶ In the early days focus on Web publication
 - Retrieve static informations via Web
 - No much diverses for the requirement from different client
 - Accomplished via providing read-only, no-transactional service
- ▶ Rapid developing to interactive personalized Web application
 - Enable communication among customer, business partner and stuff via Web
 - Customer requirement tends to personalized, diverse
 - Provide secure, reliable transaction services
- ▶ Web Application Server to provide runtime environment and related services is necessary





e-Business Application Framework Component



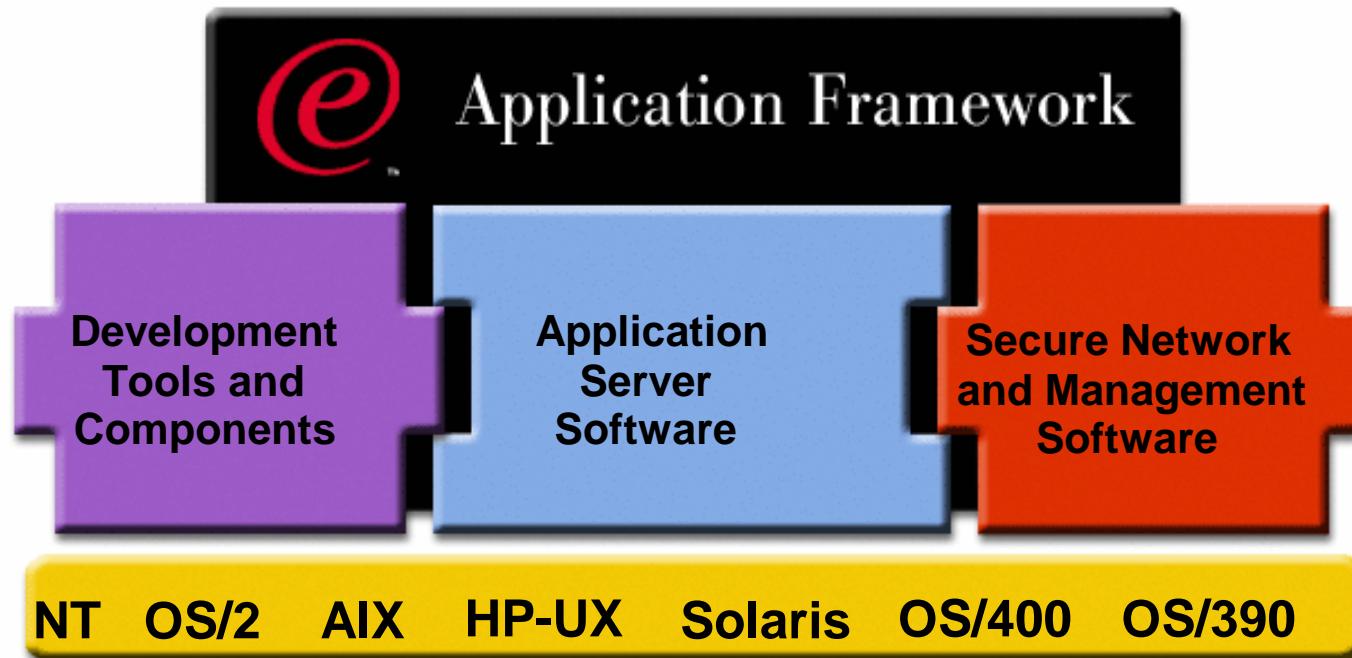
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e-business Application Framework Elements



- Proven methodology simplifies development
- Multi-platform approach increases deployment flexibility
- Applications scale to support 24x7xmillions of users



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Web Application Server

- Middleware running upon Web Server extend the static publication functionality of Web Server to an runtime application environment enable High efficient and reliable connection to backend Core Business System
 - ▶ High performance in RDB access
 - ▶ Advanced session management function
 - ▶ Provide Web Application management tools
 - ▶ Better performance than CGI application
 - ▶ Running upon current platform and Web Server



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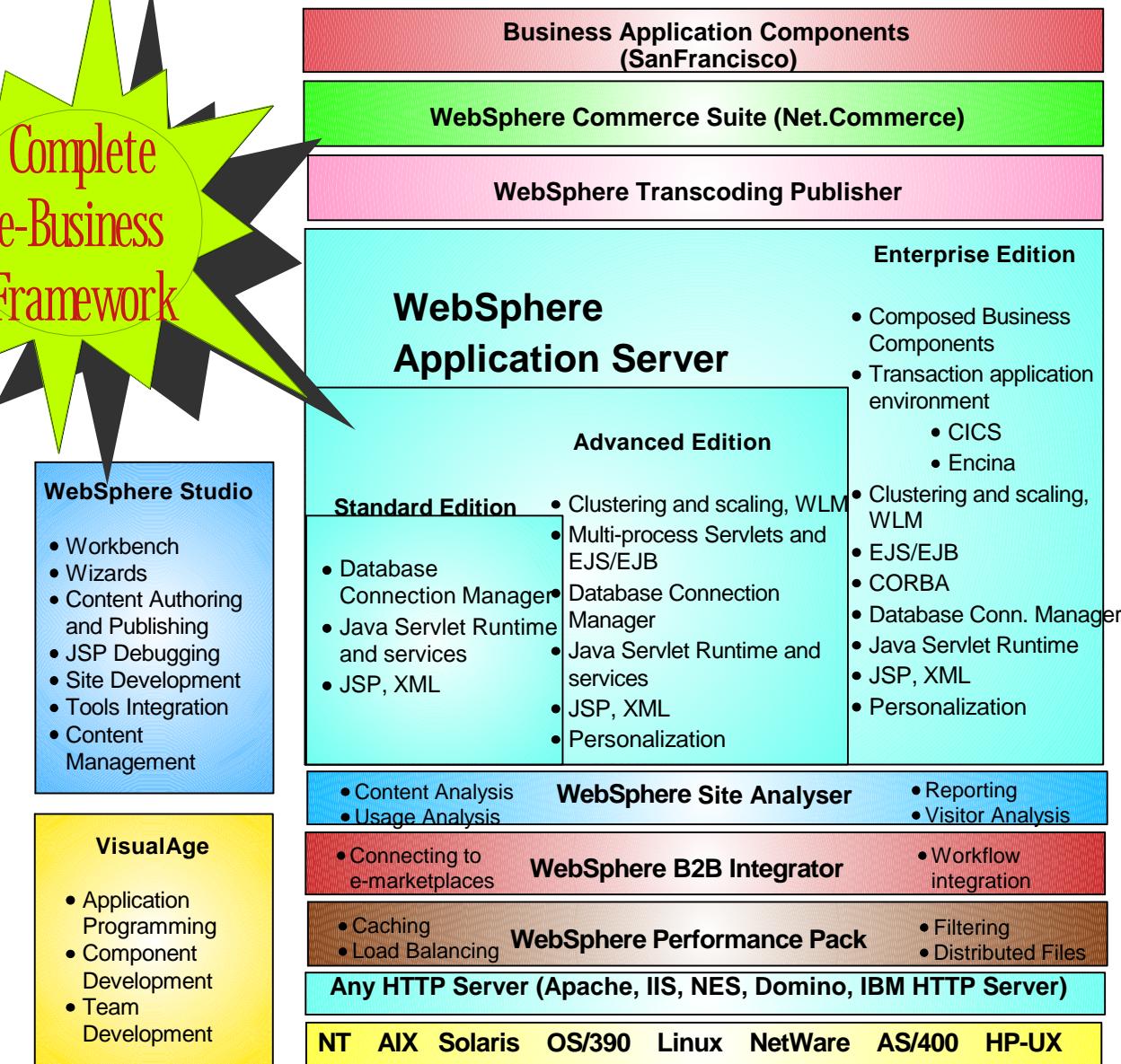


IBM Web Application Strategy

- ▶ In developing IBM WebSphere, IBM followed a strategy which addresses the challenges by delivering the dependable tools required by today's web teams.
- ▶ WebSphere focuses on the tools and capabilities required by today's web teams
- ▶ WebSphere focuses on the tools and capabilities required by the multi-disciplinary web teams while providing capabilities to deliver 7x24 applications.
- ▶ Applications that scale & perform, which is what companies need to keep their successful e-business web sites available around the clock



IBM WebSphere Family



Build

Run

Manage



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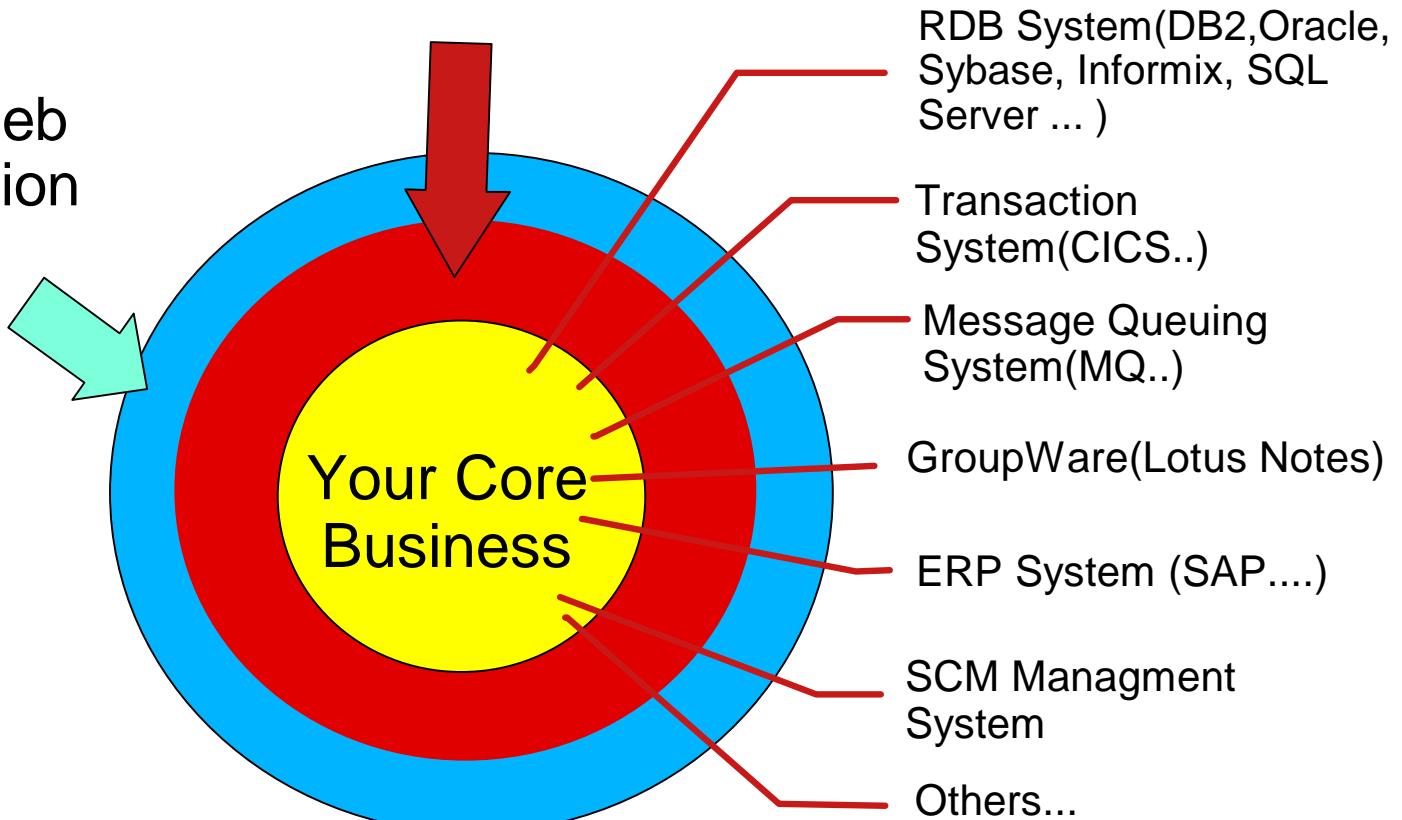
Web Programming Model

- Multi-tier component based.
- The first tier should be browser or other think client.
- The second tier (including Web Server and Application Server(optional)), provide static and dynamic information service.Based on Java Servlet, JavaBean, JSP Technology in WebSphere.
- The third tier provide core business services. In common they are mature commerce system, like DB2, CICS etc.

What is WebSphere Application Server?

WebSphere Application Server

Your Web Application



IIS,Netscape, Apache, Domino, Domino GO, etc

NT Solaris AIX OS/2 AS/400 OS/390 Linux

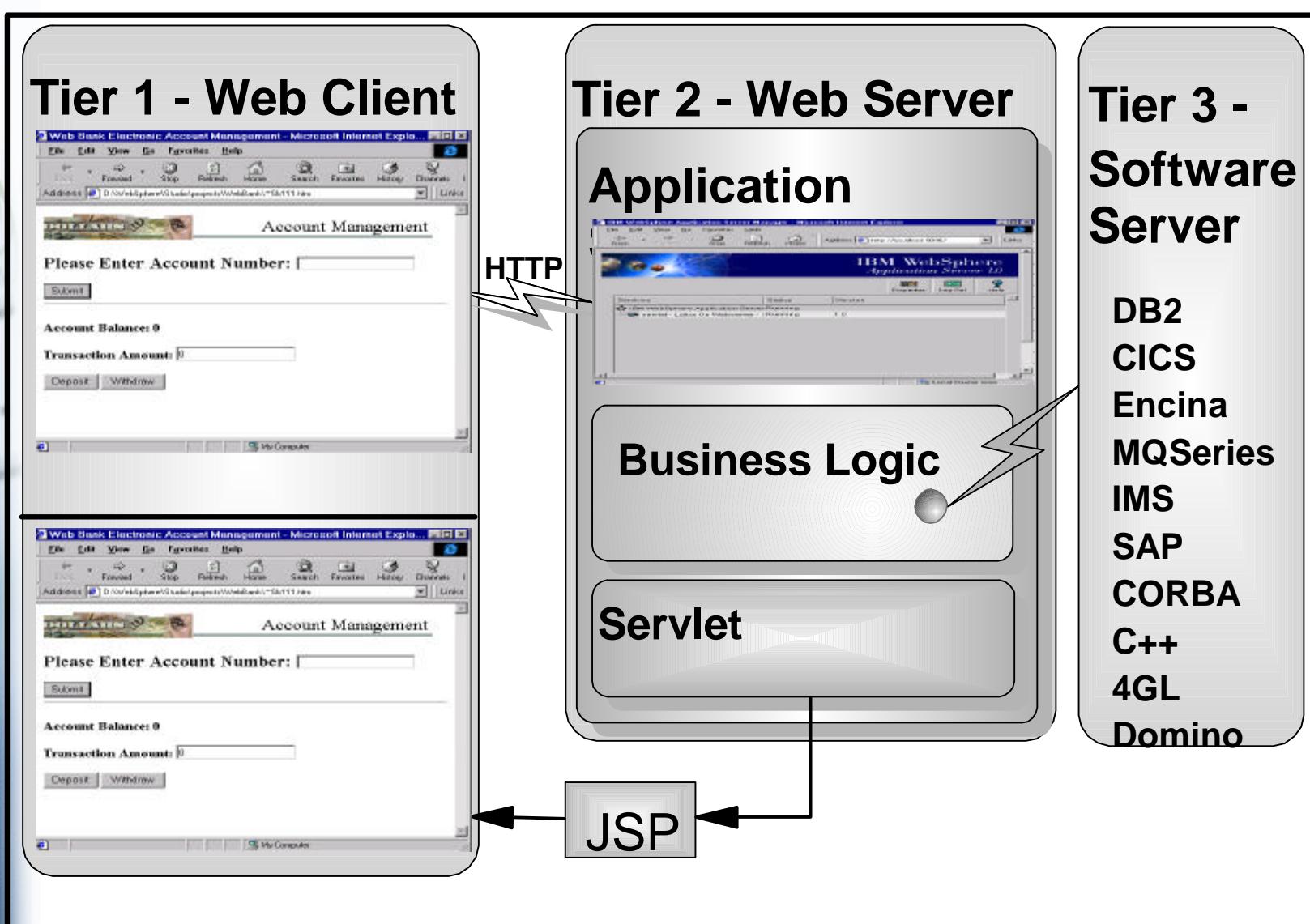


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Web Application Topology



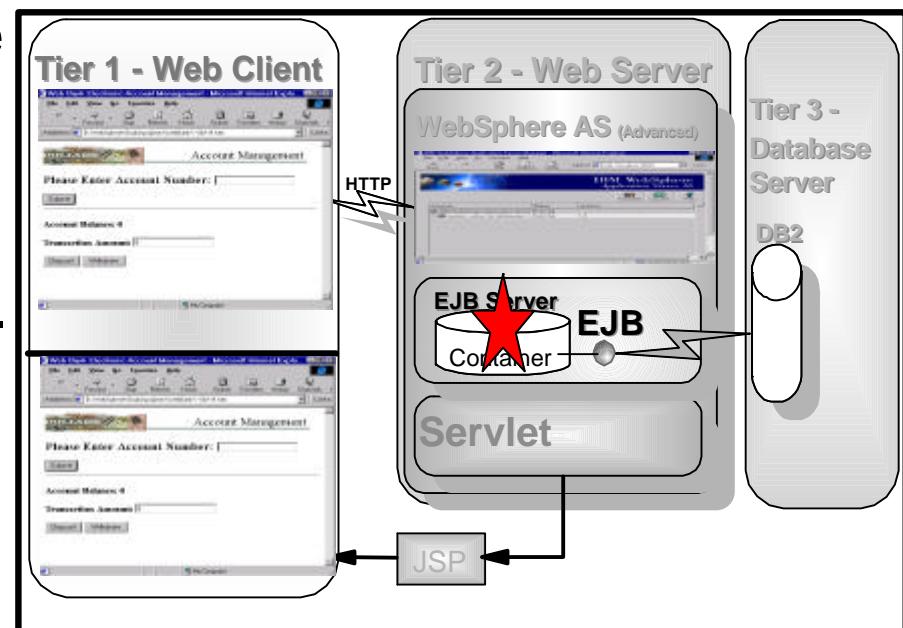


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Business Logic

- Business logic serves as the **model** for a web application
 - ▶ Implemented as JavaBeans or Enterprise Java Beans (EJBs)
 - Access to software services
 - e.g. databases, transactions, applications, etc.



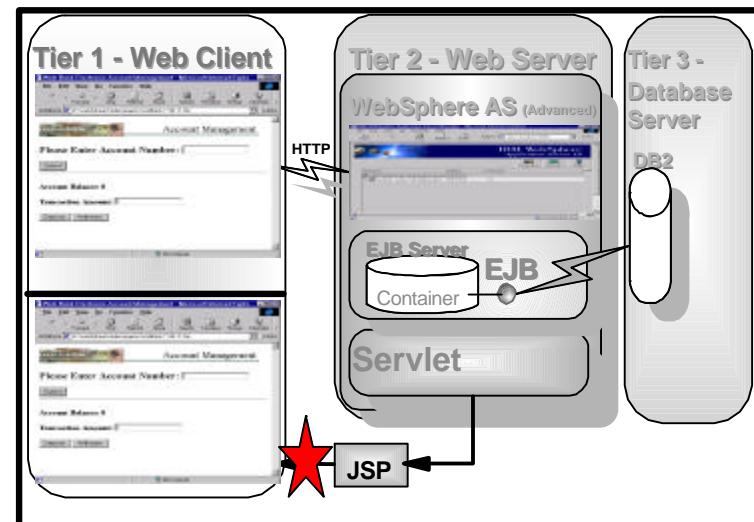


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JSP

- Serves as **view** for web application
 - ▶ Scripting technology
 - HTML + embedded Java
- JSP is compiled and HTML is returned to web client
- Key Benefits:
 - ▶ Build dynamic web applications easily
 - ▶ Separation of roles for web team



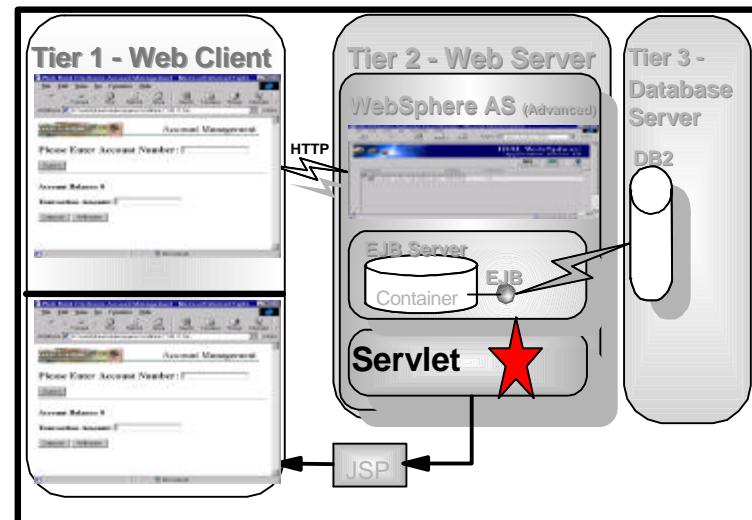


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Servlet

- Serves as **controller** for web application
 - ▶ Parses parameters passed in from HTML page
 - ▶ Invokes business objects to process request
 - ▶ Invokes Java Server Page (JSP) to return results



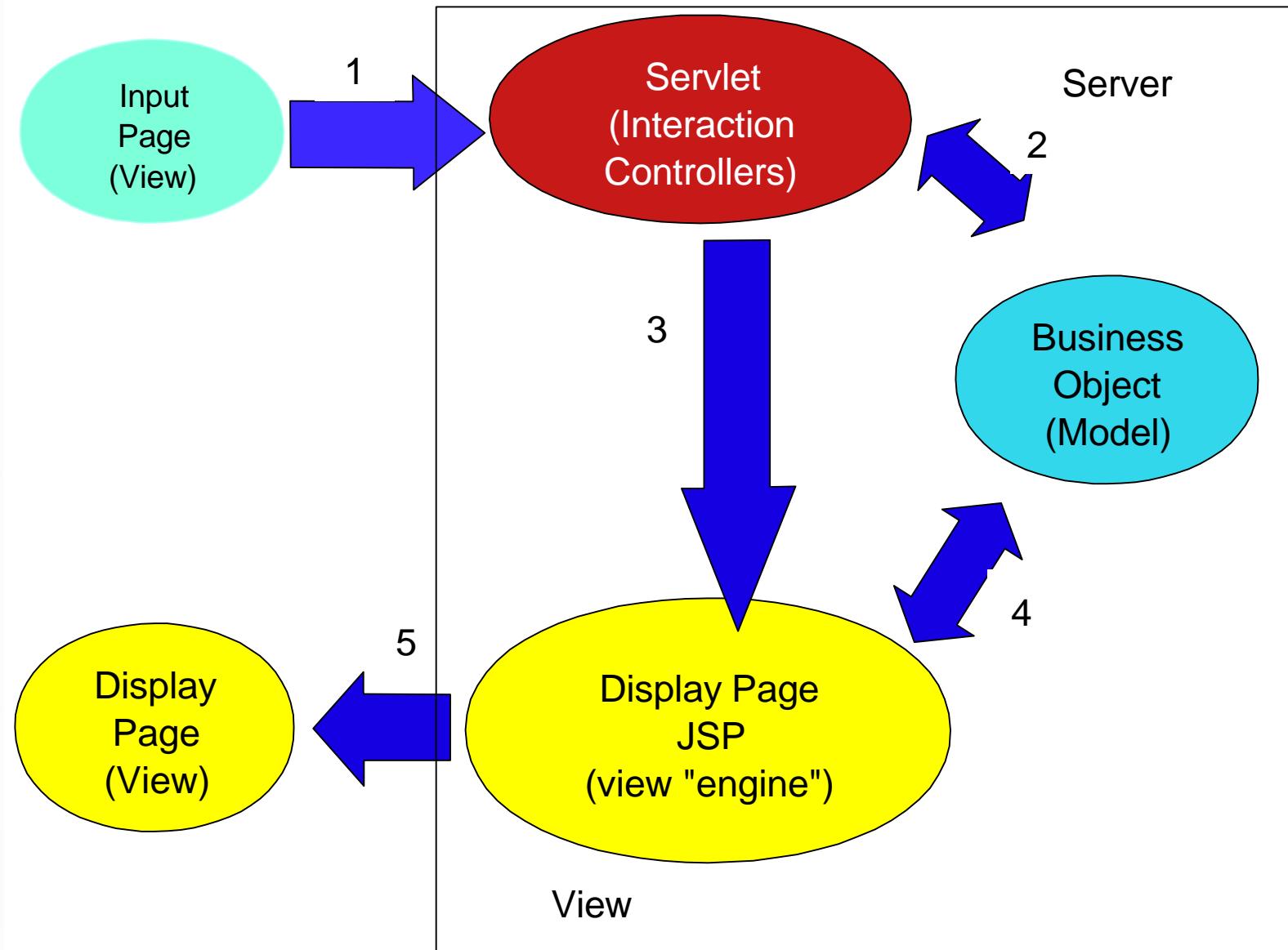


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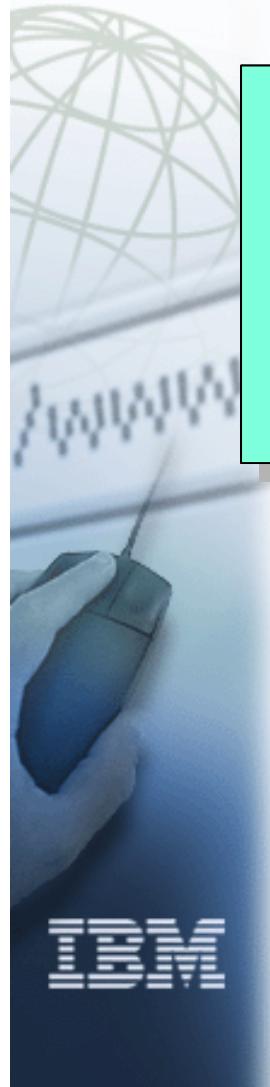
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Separating Presentation and Content (three components)

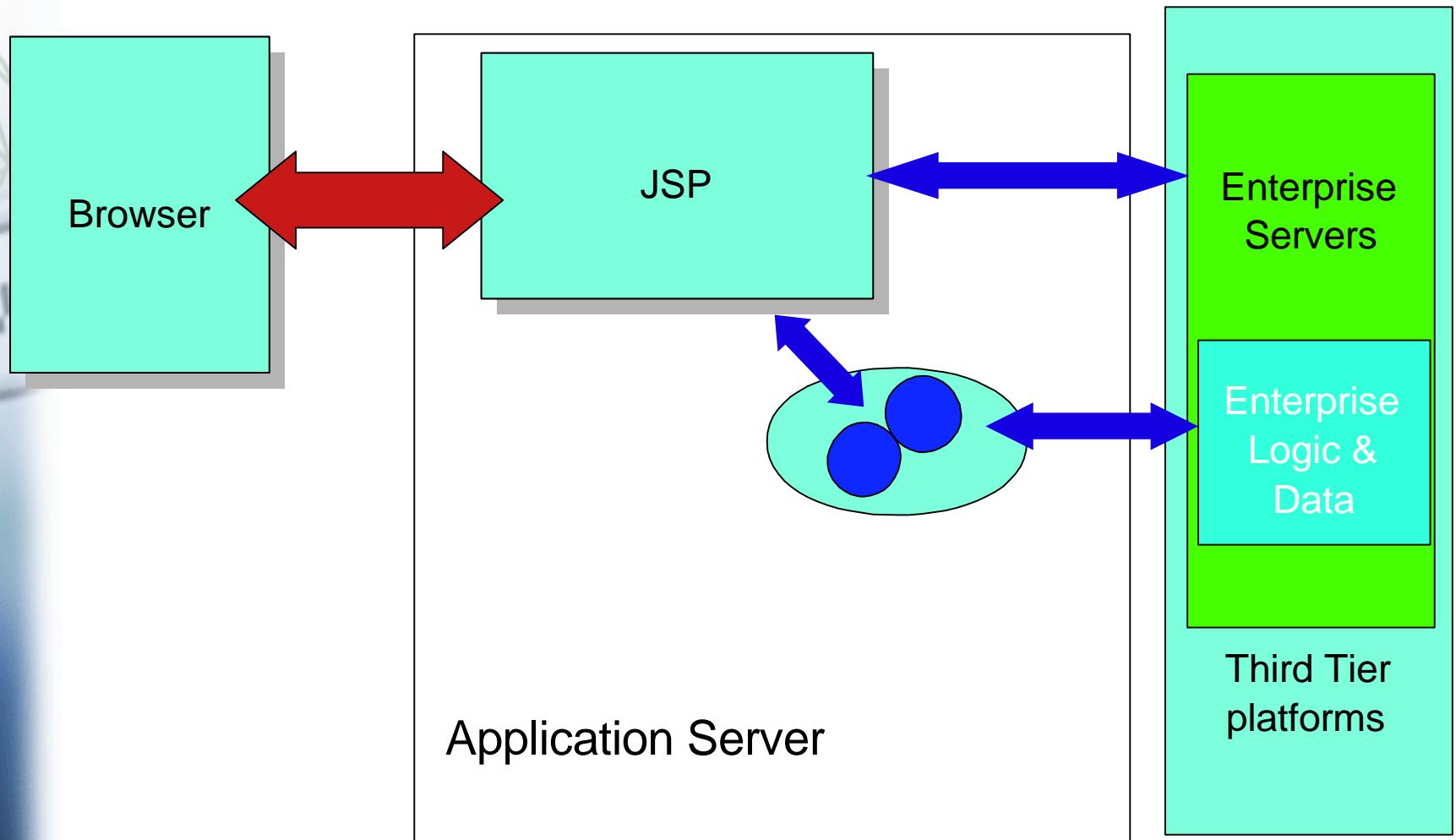




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JavaServer Pages(another scenario)



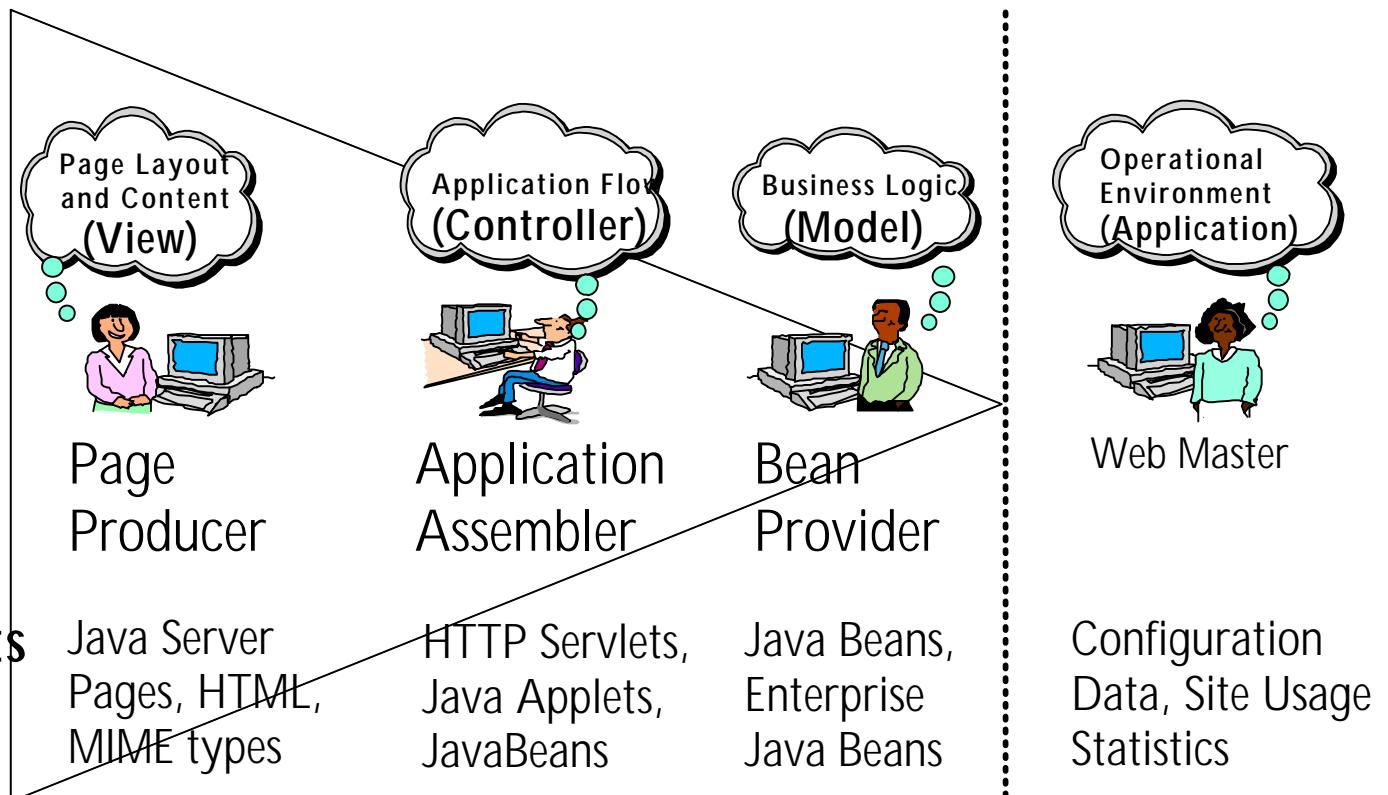


Web Application Roles and Responsibilities

Concern

Role

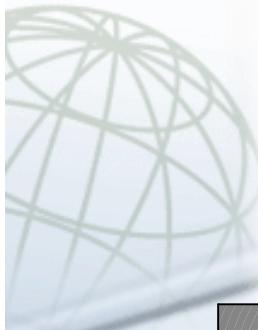
Components
Produced



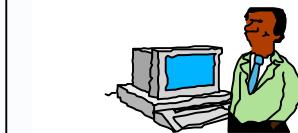
"Let the right expert do the work independently."



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Web Application Tasks and Tools



Analyst

Task:

1. Analysis & Design
2. Develop Model
3. Generate Bean Interfaces

Primary Tools:

- Rational Rose
- XMI Toolkit
- VisualAge for Java



Parallel Development



Bean Provider

Task:

- Generate Enterprise Access
Develop Business Logic

Primary Tool:

- VisualAge for Java



Assembler

Tasks:

- Generate Web Application Templates
Develop Servlet

Primary Tools:

- WebSphere Studio
- VisualAge for Java



Page Producer

Tasks:

- Develop HTML
Develop JSP

Primary Tools:

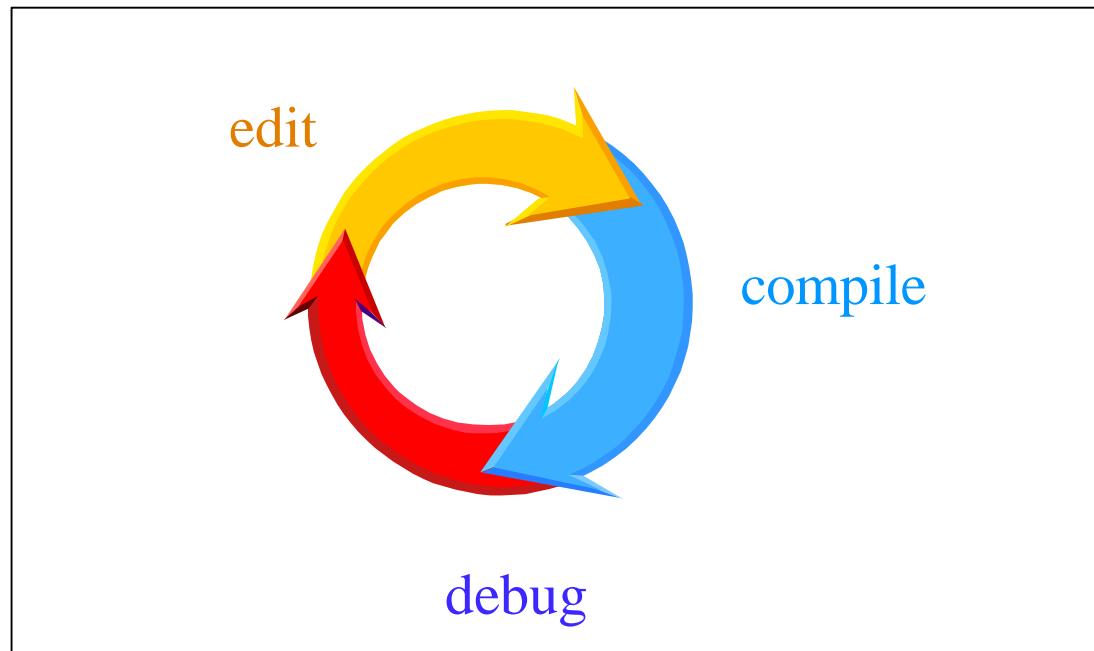
- WebSphere Studio
- WebSphere Page Designer



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Rapid Application Development





VisualAge Java

VisualAge for Java is a professional Java IDE tool who has gained a lot of World-Wide award.

- VisualAge for Java Standard
- VisualAge for Java Professional
- VisualAge for Java Enterprise Edition



WebSphere Studio

- Studio Workbench
 - ▶ Manages Web projects, files, and link relationships
 - ▶ Team enabled - common view, check-in/out,
- Integrated Page Designer
 - ▶ Visual layout for dynamic JavaServer Pages (JSP)
 - ▶ Creates dynamic JSPs with the same ease of creating HTML
- Integrated Servlet Wizards



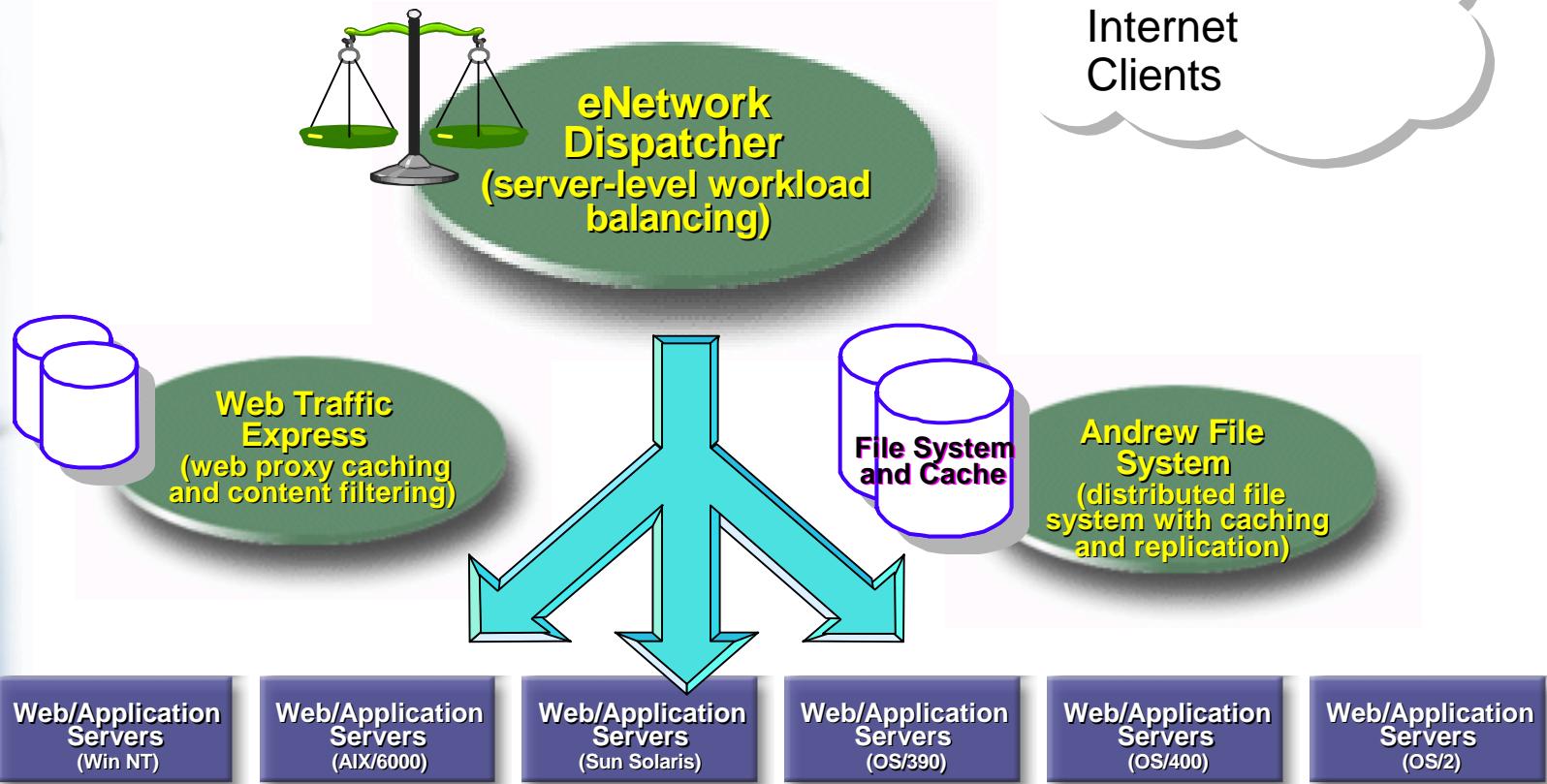
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WebSphere Performance Pack

Scalability, Performance, and Availability





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WebSphere Application

- Servlet Engine
- Servlet V2.1
- JSP V1.0 & V0.91
- Session Management
- User Profile Management
- WLM Support
- XML Support
- EJB support
- CORBA support
- GUI Site Analysis Tools

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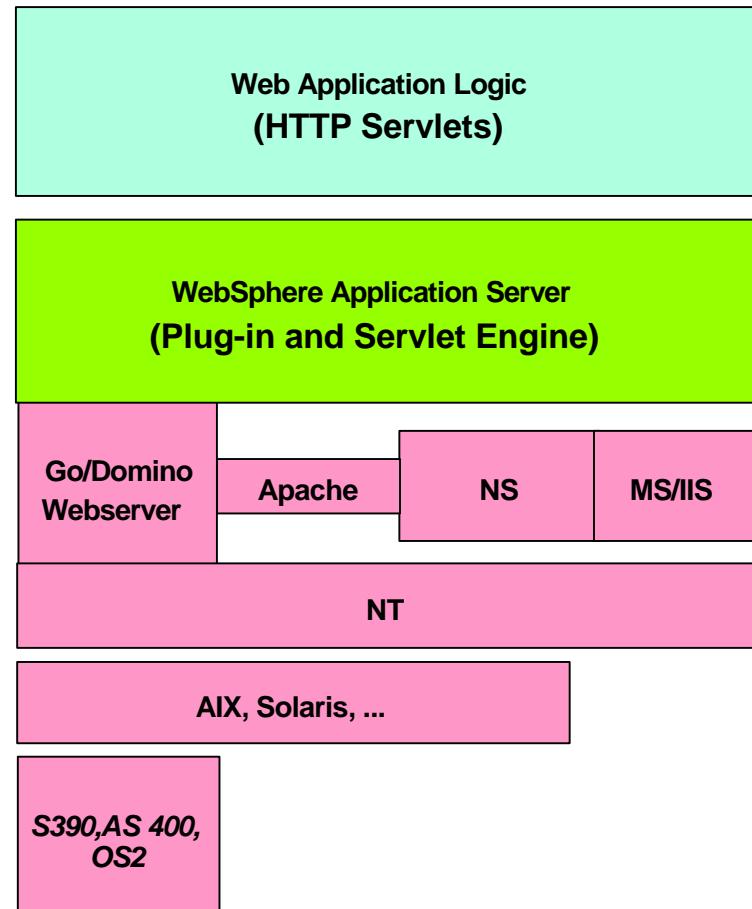


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WebSphere Application Server Portability

- ▶ Support multiple popular WebServers
 - ▶ Apache, Domino, Netscape, Microsoft IIS, Go Webserver
- ▶ Support multiple platforms
 - IBM AIX, MS Windows NT, SUN Solaris, OS/390, OS/400.



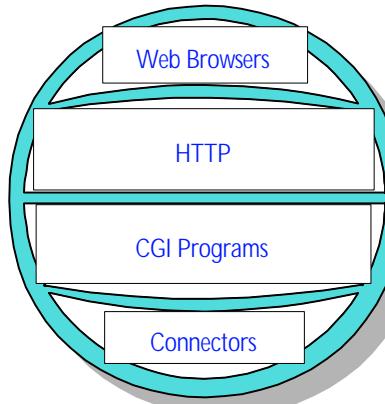


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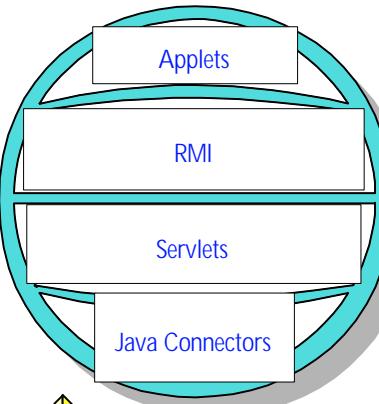


Web Application Runtime Evolution

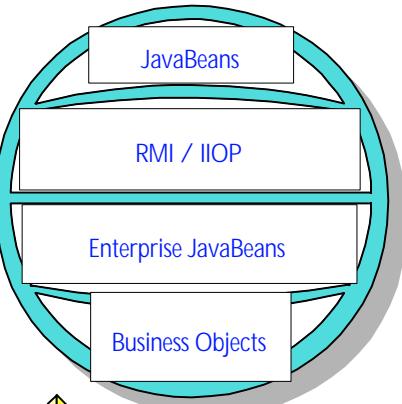
Clients



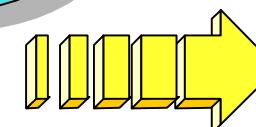
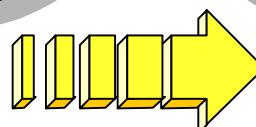
Protocols



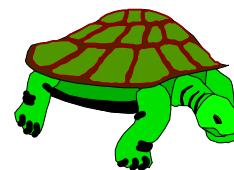
Server Logic



Enterprise Integration



Established



Available 6/98



Emerging



CGI

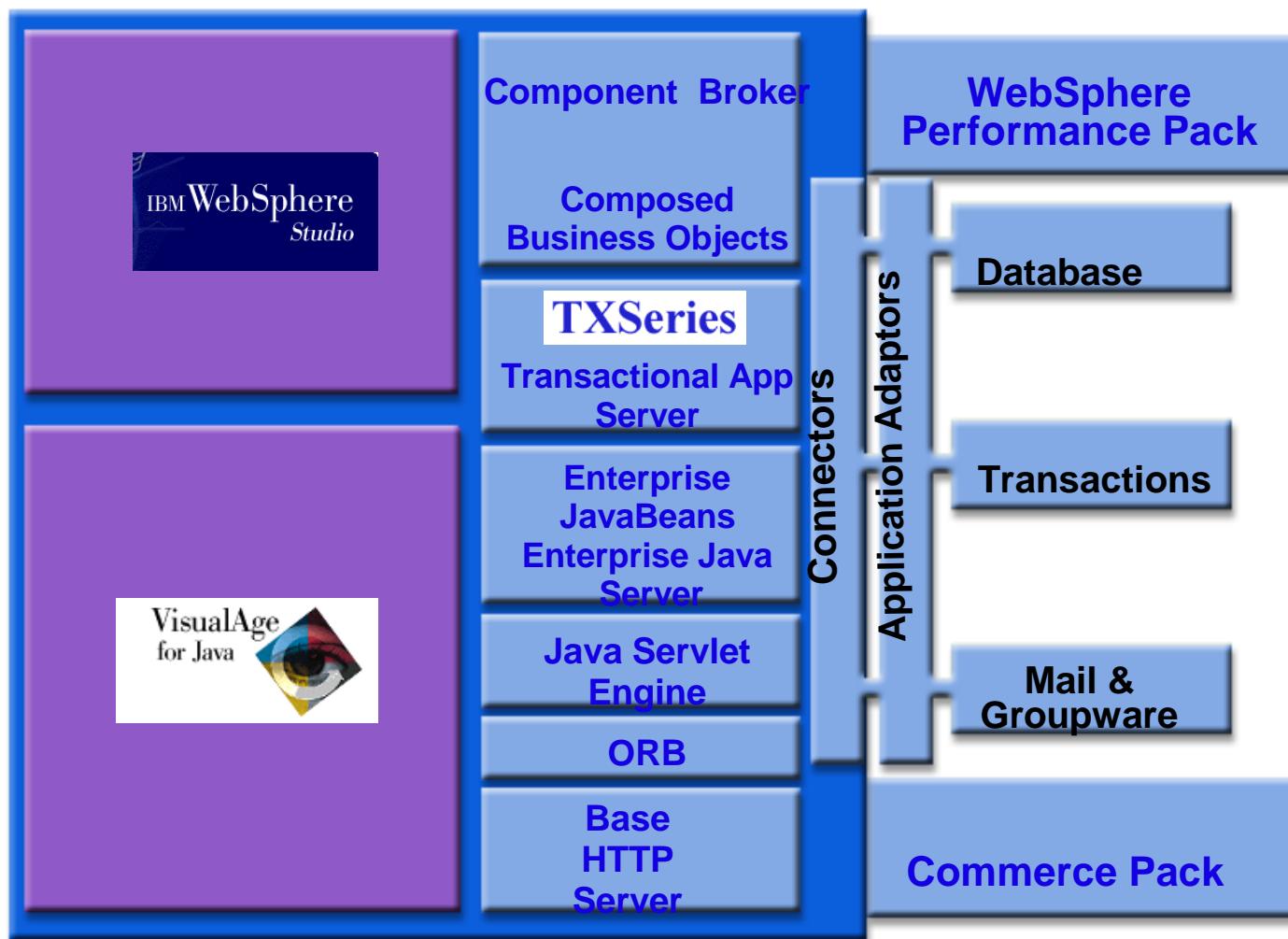




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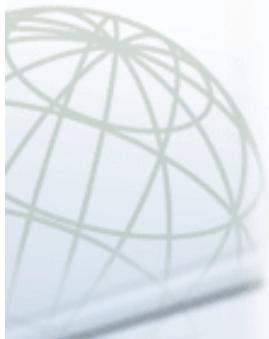


WebSphere Application Server Enterprise Edition



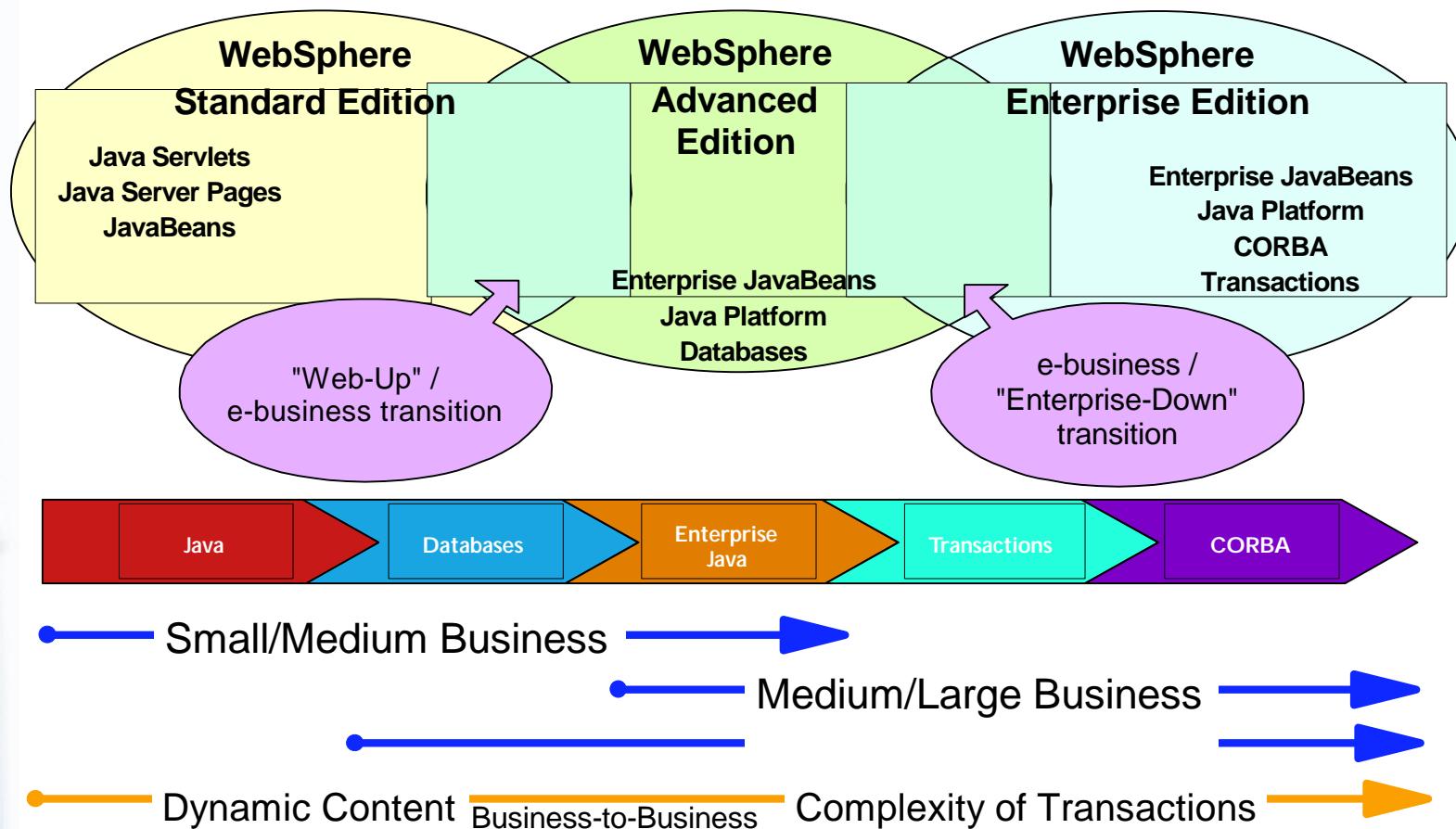


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WebSphere Market Analysis



Separation of Roles:

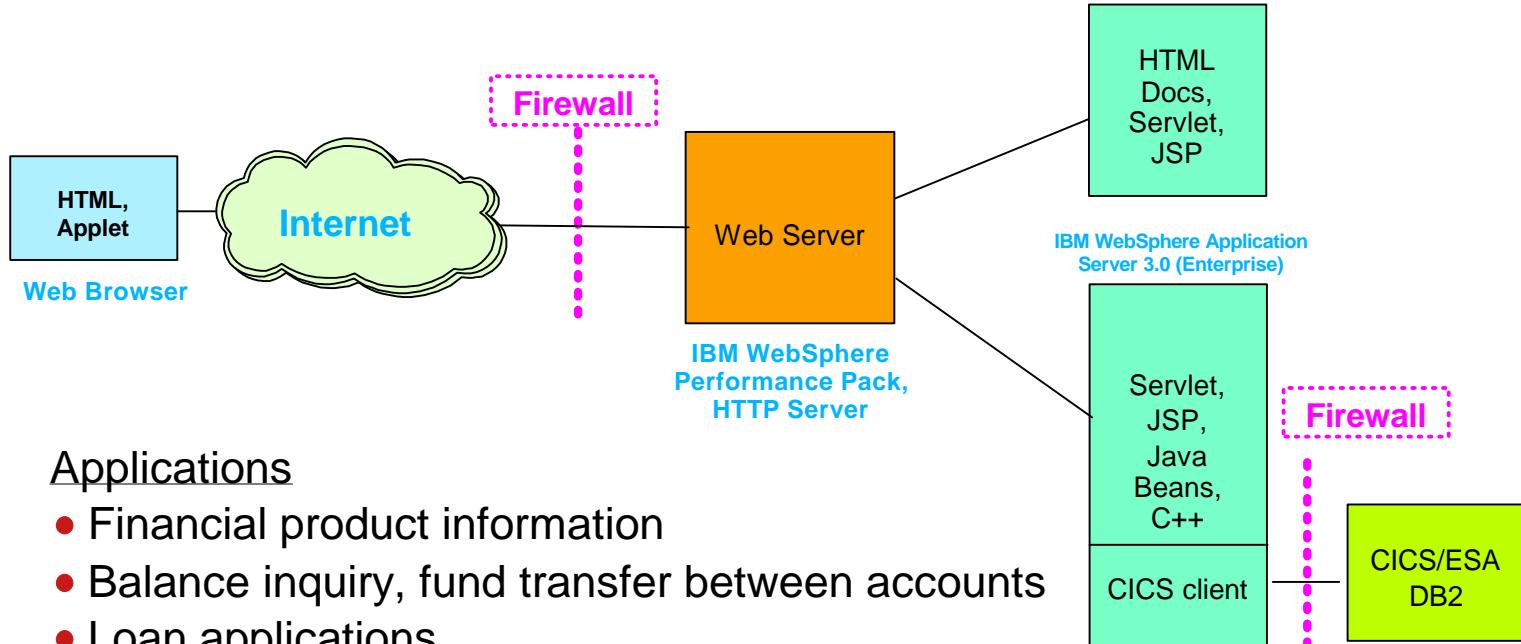
1. Content Generation (Servlets)
2. Content Access (JavaBeans)
3. Content Display (Java Server Pages)
4. Advanced Content Access (Enterprise JavaBeans)



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Software Architecture Internet/Intranet



Applications

- Financial product information
- Balance inquiry, fund transfer between accounts
- Loan applications
- Collecting customer demographic data

Technical Features

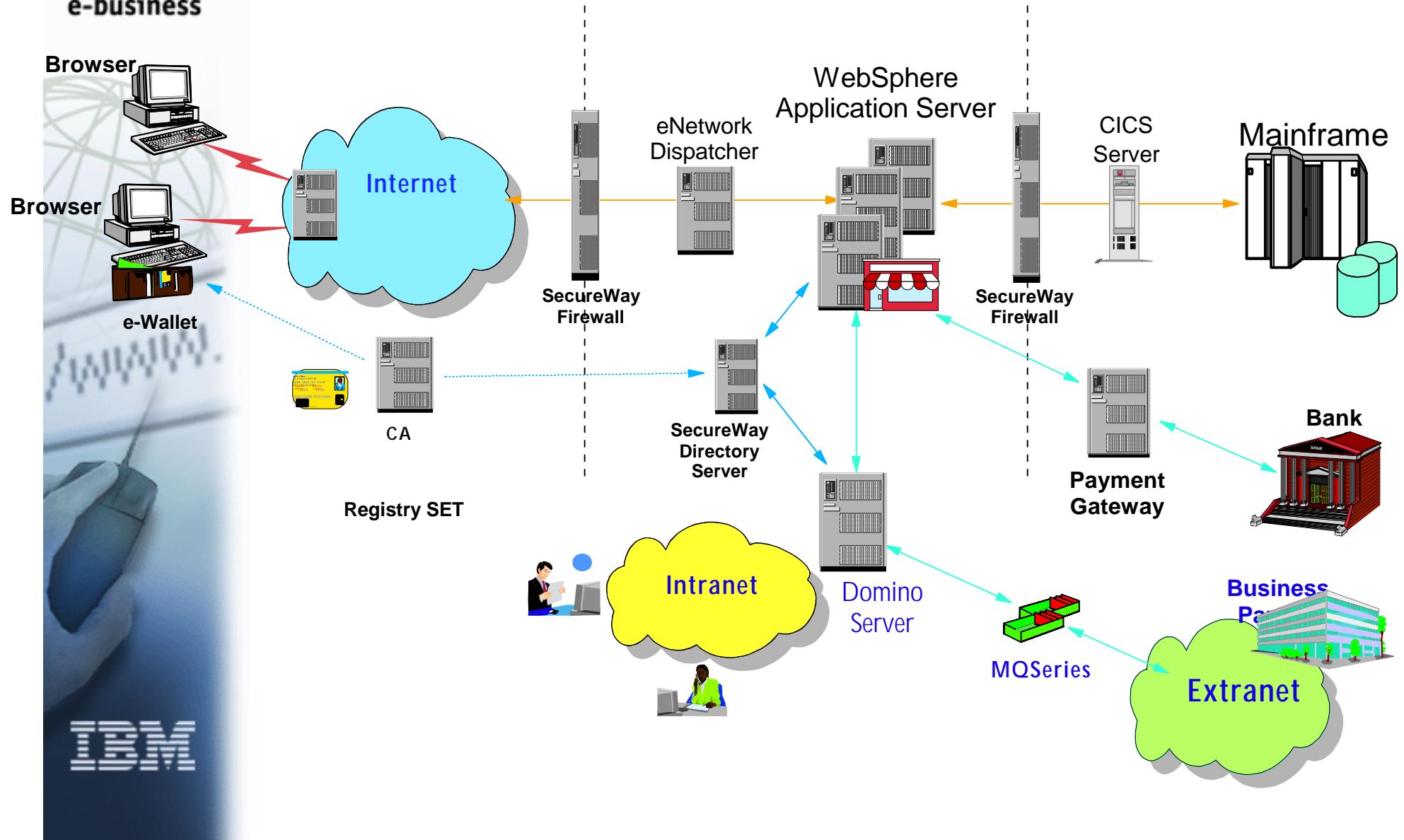
- Separation of Content and Application for load distribution
- Dual firewall for better security
- Servlet and JSP for dynamic content serving
- Java Beans and C++ for application logic



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Browser
Browser
e-Wallet

3-tier Web Application





WebShpere Scalability

- Performance improve
 - TCP/IP level
 - Application level
- Security Control
 - FireWall
- System Management
 - Tivoli