



e-business

IBM Software

IBM AD Tools

"e-business performance tuning"

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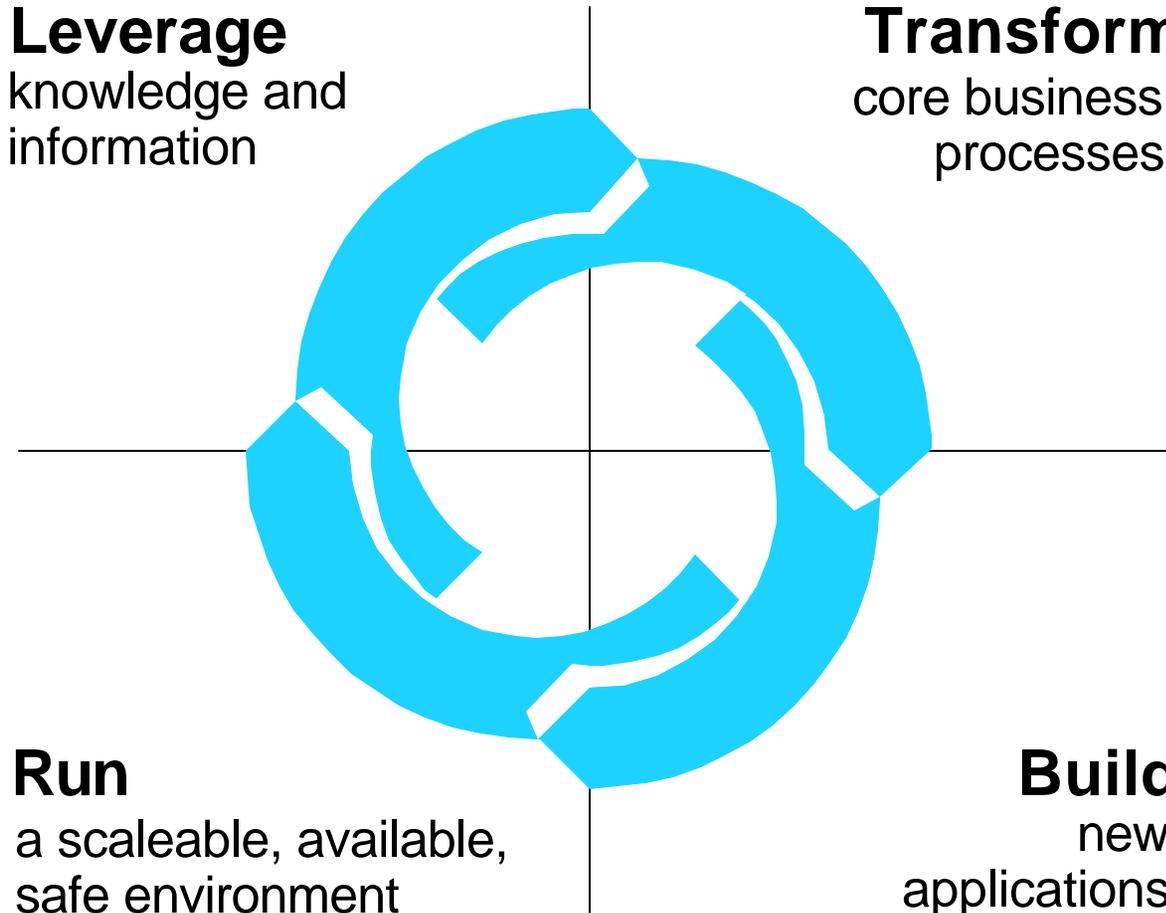
The e-business Cycle

Leverage

knowledge and
information

Transform

core business
processes



Run

a scaleable, available,
safe environment

Build

new
applications





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e-business Acceleration with IBM Tools

- **Modernize, Integrate and Extend Legacy Code**
 - ▶ Free up resource for e-business development by reducing maintenance costs (90% today)
 - ▶ Enable legacy code for e-business (wrap vs scrap)
 - ▶ Reinforce & re-engineer for e-business

- **Radical New RAD Tools**
 - ▶ IDEs, Web Tools, Rules Tools, Components

- **Exploit Runtime Integration**
 - ▶ Productivity enhancements
 - ▶ Mask technology migration issues

- **Full Lifecycle and Role-based Development**
 - ▶ Apply rigor of enterprise AD to web
 - ▶ Enhance productivity of individuals and teams
 - ▶ Mass customization of AD components





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Modernize, Integrate & Extend

Modernize

- Multi-language tooling to support application renewal
 - ▶ *COBOL, PL/I, FORTRAN, RPG, C++, Smalltalk, 4GL, Java*
- Development and deployment across diverse platforms
 - ▶ *OS/390, OS/400, AIX, OS/2, HP-UX, Solaris, NT, DEC, Bull, Linux ...*

Integrate

- Simple connectors through reliable messaging through component-based business process re-engineering
 - ▶ *e-business Connectors, MQSeries, WebSphere EE*
- Delivered as a base element of IBM's IDEs
 - ▶ *Enterprise Access Builders, Component Development Toolkit*

Extend

- Re-use of existing business applications, transactions and data
 - ▶ *Introspection tooling for wrapping of business logic and data*



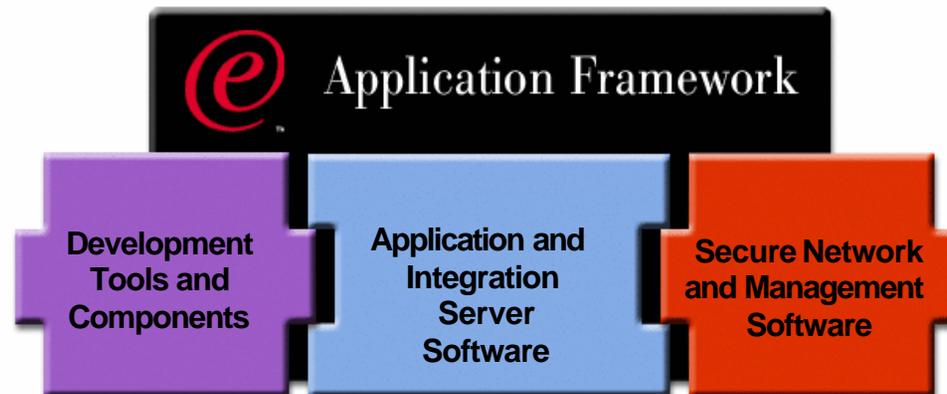


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Radical New RAD Tools

IBM's Application Development Tools

- Most effective way for customers and ISVs to build e-business applications
- Fully integrated with IBM's application servers
- Support diverse developer skills and roles
- Implemented based on IBM's Application framework for e-business





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WebSphere Studio Version 3.0

- **A suite of tools - for design, develop, and publish**
 - ▶ Page designers, graphic artists, and programmers, can all work on the same projects (or just a single user)
 - ▶ Helps you (team) create server-side programming logic

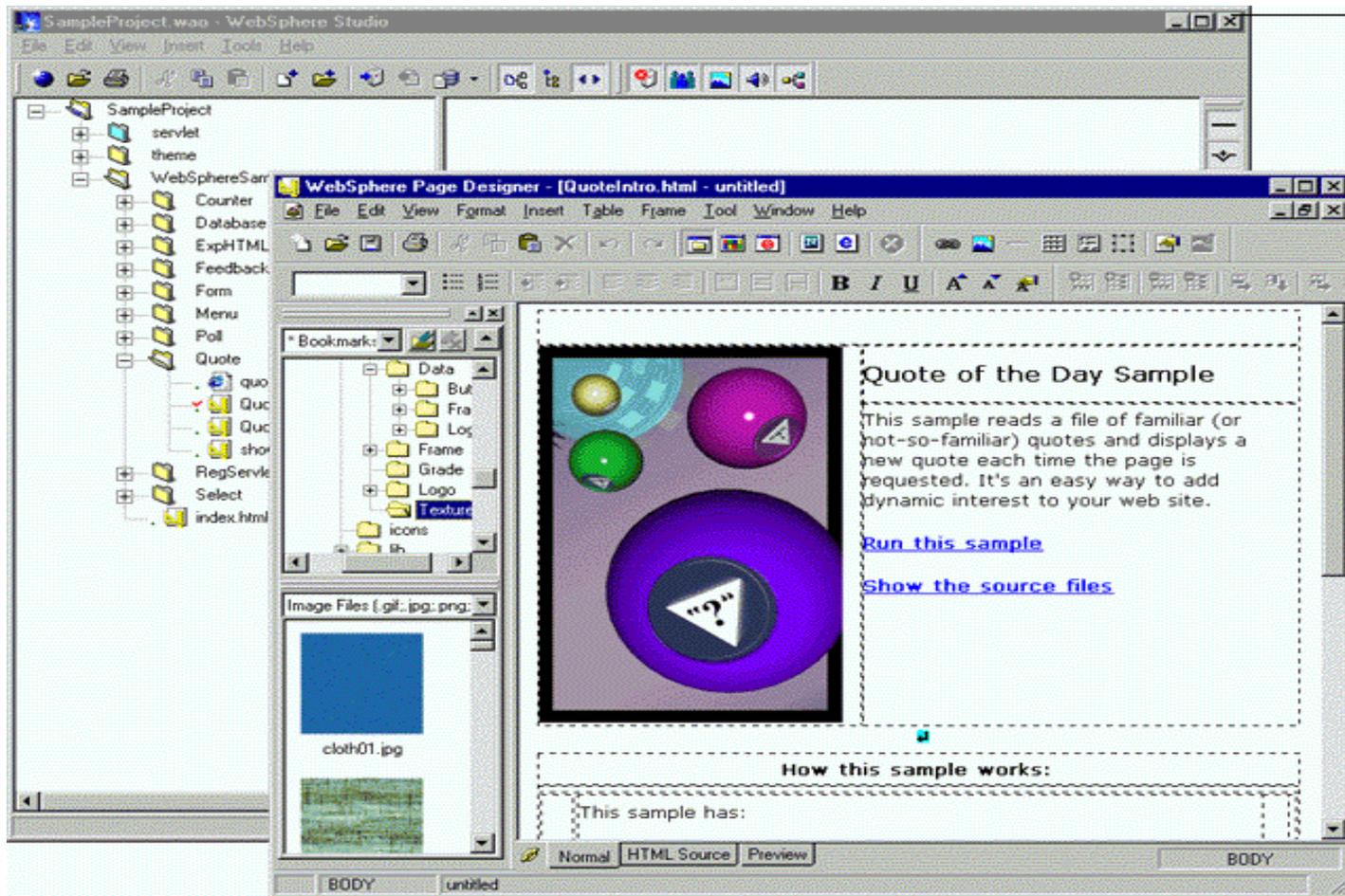
- **Easily create Dynamic Web applications**
 - ▶ Easily debug Web Server logic remotely Supports HTML, DHTML, Image, XML, WML, etc.
 - ▶ Incorporate Java Servlets and Java Server Pages (JSP) and Enterprise JavaBeans into e-business applications, easily and at your own pace

- **Helps your multi-disciplinary team work together**
 - ▶ Common view of assets and relationships
 - Helps deal with lots of independent parts - it's easier to maintain
 - Parts are created and maintained by the appropriate people
 - Any tools can plug in, you can work with your favorites
 - ▶ Cool tools included like IBM HotMedia and NetObjects ScriptBuilder



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WebSphere Studio - Version 3.0



- First visual builder for Java Server Pages with round trip edit
- First multi-level debug support (JSP, HTML and Java)
- File & link management - rapid deployment to multiple servers
- Open to plug-in 3rd party tools, import existing web sites





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VisualAge for Java - Leadership IDE



Best Development Tool
November



Judges' Choice Award
COMDEX '98



Star Product
November



Rated hottest of
the hot
September



March



Best of Test
Center for 1997
January



(UK) July



Best Java IDE for
1998

World Class Award

Java Developers Journal
April 1999

PC Expert (France)

"Excellence Technique"
in "Application
Development Tools"
January 1999



Outstanding
Rating
May



Reviewers' Pick
April

- VisualAge for Java - Market Leader in three categories
(Source: PCData, US 2Q99 Java Tools Channel Sales)
 - ✓ Enterprise product sales via distributors (82%)
 - ✓ Enterprise product sales via corporate resellers (94%)
 - ✓ Sales overall via corporate resellers (66%)
 - Sales overall via distributors (33%)
- Over 100,000 registered users to VADD





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VisualAge for Java

- **Extend existing applications to e-business**
 - Leverage existing IT assets to produce e-business solutions faster
- **Exploit the IBM Application Framework for e-business**
 - Adherence to open standards ensures options for deployment
 - Build, run, manage and grow your e-business
- **Tight Integration with WebSphere Application Servers**
 - Rapid application development and deployment to WebSphere
 - Integrated and remote debug delivers productivity
- **Award-winning tools encompass entire AD lifecycle**
 - Customer proven with major applications in production today
 - Partnerships accelerate development cycle with additional tools / methodologies

The market leader in Enterprise Java development





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VisualAge Java 3.0 Enhancements

■ **Broadest Enterprise Access in the Industry**

- ▶ IMS Enterprise Access Builder
- ▶ MQ Enterprise Access Builder
- ▶ Host on Demand
- ▶ Full support also includes CICS, TXSeries, Java-RMI, J2C++, CORBA IIOP, SAP R/3, JDBC
- ▶ Enhanced wizards and templates for ease of use

■ **More Secure / Faster Data**

- ▶ Stored Procedure Builder
- ▶ SQLJ
- ▶ Data Access Beans

■ **Rational Suites Integration**

- ▶ XMI Bridge

■ **Linux Platform Support - Develop & Deploy**

■ **Java2 Support**

■ **Solaris Platform Support - Deploy**



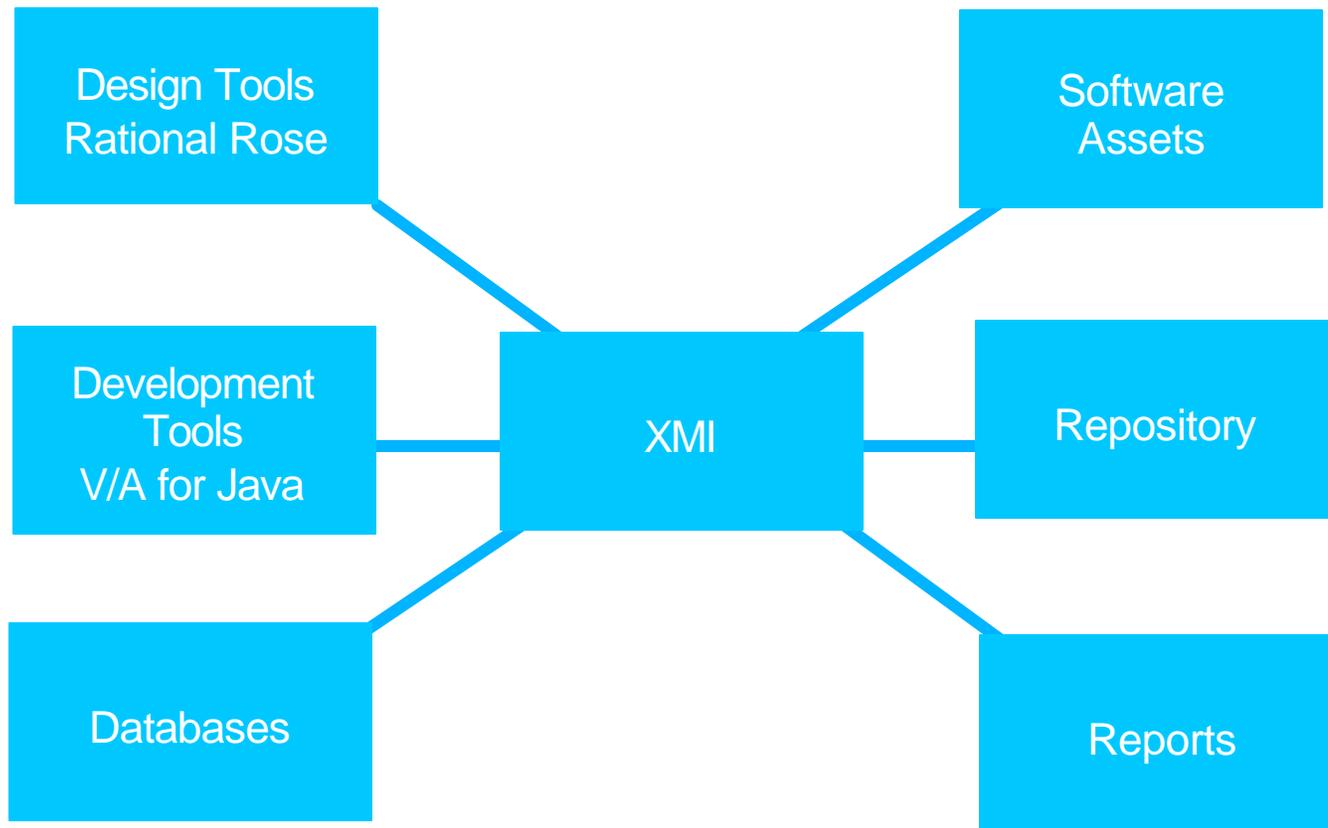


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Open Standards Enable Partnerships

■ XMI Toolkit

- ▶ Open access to modeling tools using XMI
- ▶ Bridge to Rational Rose - Round Tripping
- ▶ Base for future integration



Transform - Application Lifecycle Tooling



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Success - Applications in Production

■ Harvard University

- ▶ Reduced application maintenance by 70%
- ▶ "It's the Rolls Royce of IDEs. It puts everything you need for full-scale professional development together in one complete package."

■ Charles Schwab

- ▶ "VisualAge for Java is a secret weapon in remote debugging, a godsend!"

■ Fireman's Fund

- ▶ 90% productivity boost due to extensive software code reuse and Java components

■ North Carolina Farm Bureau

- ▶ 50% productivity improvement thanks to VisualAge Java's re-generation of business models
- ▶ "After two to three weeks of training, they were ready to start...and they became efficient within two months. We consider that a very short learning curve."

■ Allied Signal

- ▶ "We were able to cut the time it takes to write COBOL wrappers from a week to less than two days."
- ▶ Transformed 80 hours worth of code work to the touch of a button.

The market leader in Enterprise Java development



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Enterprise RAD - VisualAge Generator

- **Rapidly develop complex server logic**
 - ▶ High transaction rate applications
 - ▶ Scales up or down - (best tool for S/390 apps)
 - ▶ Dramatic programmer productivity gains
- **Masks complexities of underlying systems**
- **Completely portable code**
 - ▶ Automatically generates code for many client and server environments - 17 platforms in all
- **Interactive test facility**
- **Facilitates Java clients, creates JavaBeans**

*Enterprise development environment for
traditionally skilled programmers*





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Workgroup RAD - VisualAge Interspace

- **Seamless access for Visual Basic and PowerBuilder programmers to IBM middleware**
 - ▶ Reduces costs by using existing skills
 - ▶ Improves productivity
 - ▶ Enables easy access to legacy systems
- **Supports Java for mixed development environments**
- **Connects existing clients to IBM middleware**
- **Acquisition of Planetworks**





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VisualAge for Embedded Systems

- **Brings richness of VisualAge family to embedded device development**
 - ▶ Visual Composition Editor
 - ▶ Integrated and remote debugging
 - ▶ Access to common connectors and reusable server components
- **Speeds development time, reduces costs**
- **Enterprise applications as small as 1MB and device runtimes as small as 27KB**
- **Beta now available (www.ibm.com/embedded)**

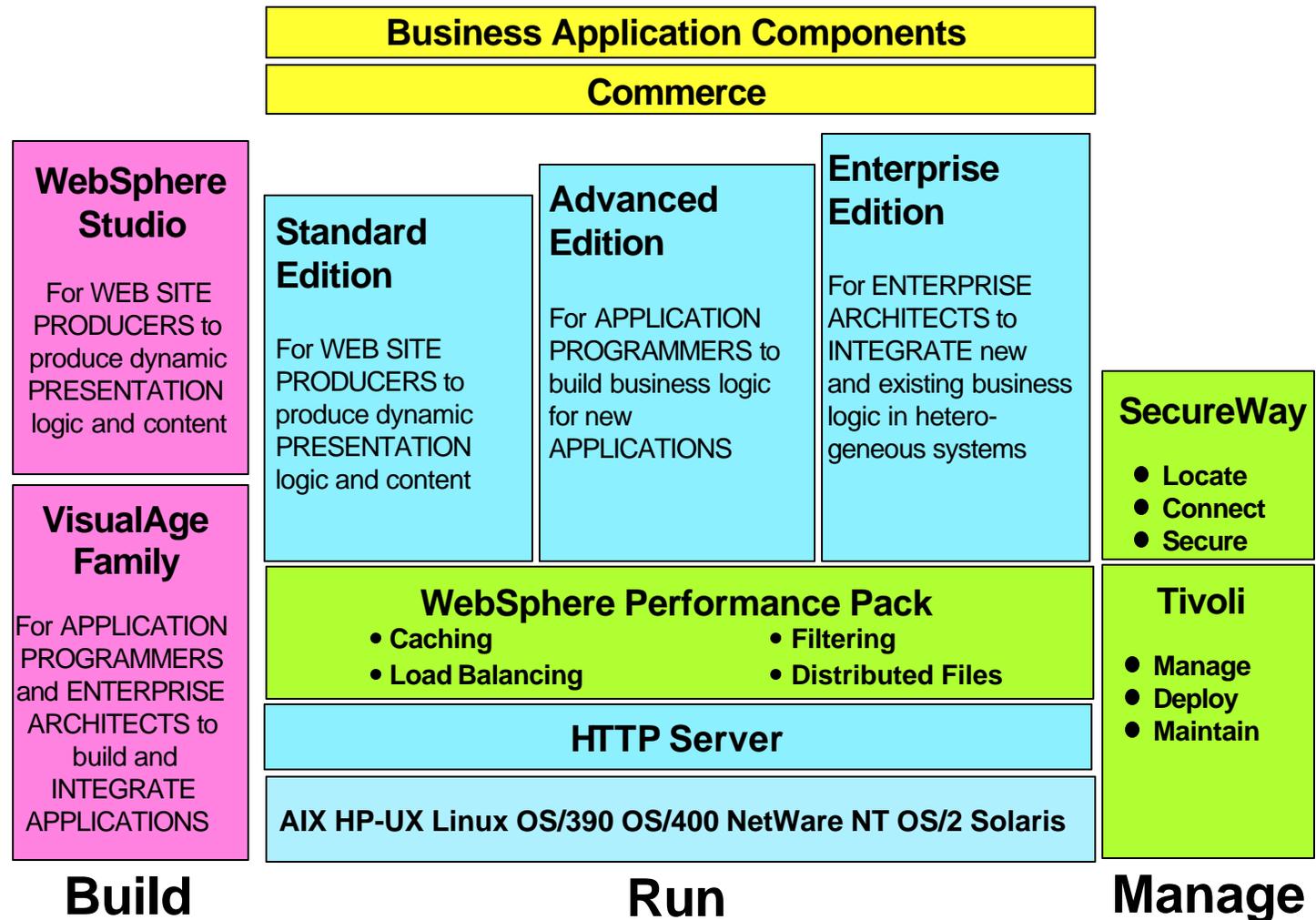




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WebSphere Family Integration

Family of Complementary, Integrated Products

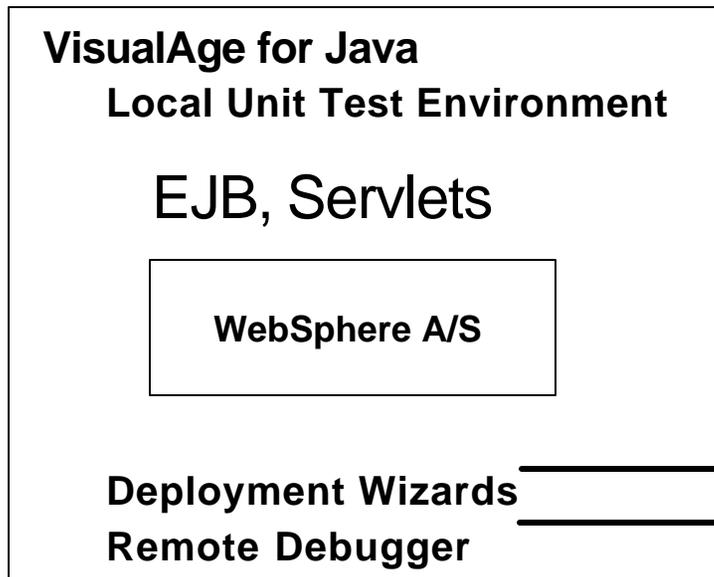




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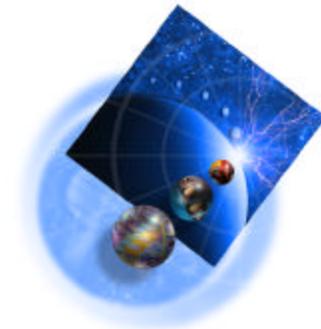
Integrated & Remote Debug

■ Test Prior to Deployment



■ Test After Deployment

WebSphere Application Server



■ Advantages of Testing within IDE

- ▶ Start / stop application or server and change on the fly
- ▶ Save multiple steps / save time
 - Deploy to Server
 - Run on Server
 - Find Bug
 - Repeat

■ Remote Test to WebSphere

- ▶ "Debug on" mode





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Integration with DB2

■ Easier Data Access

- ▶ Easy-to-use beans for accessing relational data
- ▶ Quickforms for faster development of User Interface
- ▶ Support for SQLJ

■ Faster / more secure Data Access

- ▶ Stored Procedure Builder
 - ◆ Wizard-based tooling creates Java Stored Procedures targeting DB2
 - ◆ Access through called routine, not schema access

■ Enterprise JavaBeans persistence to DB2

- ▶ Fast development of EJB
 - ◆ Session, Entity (CMP / BMP) bean support
- ▶ Map to existing data schemas via persistence framework

OS/390

AIX

OS/400

Intel

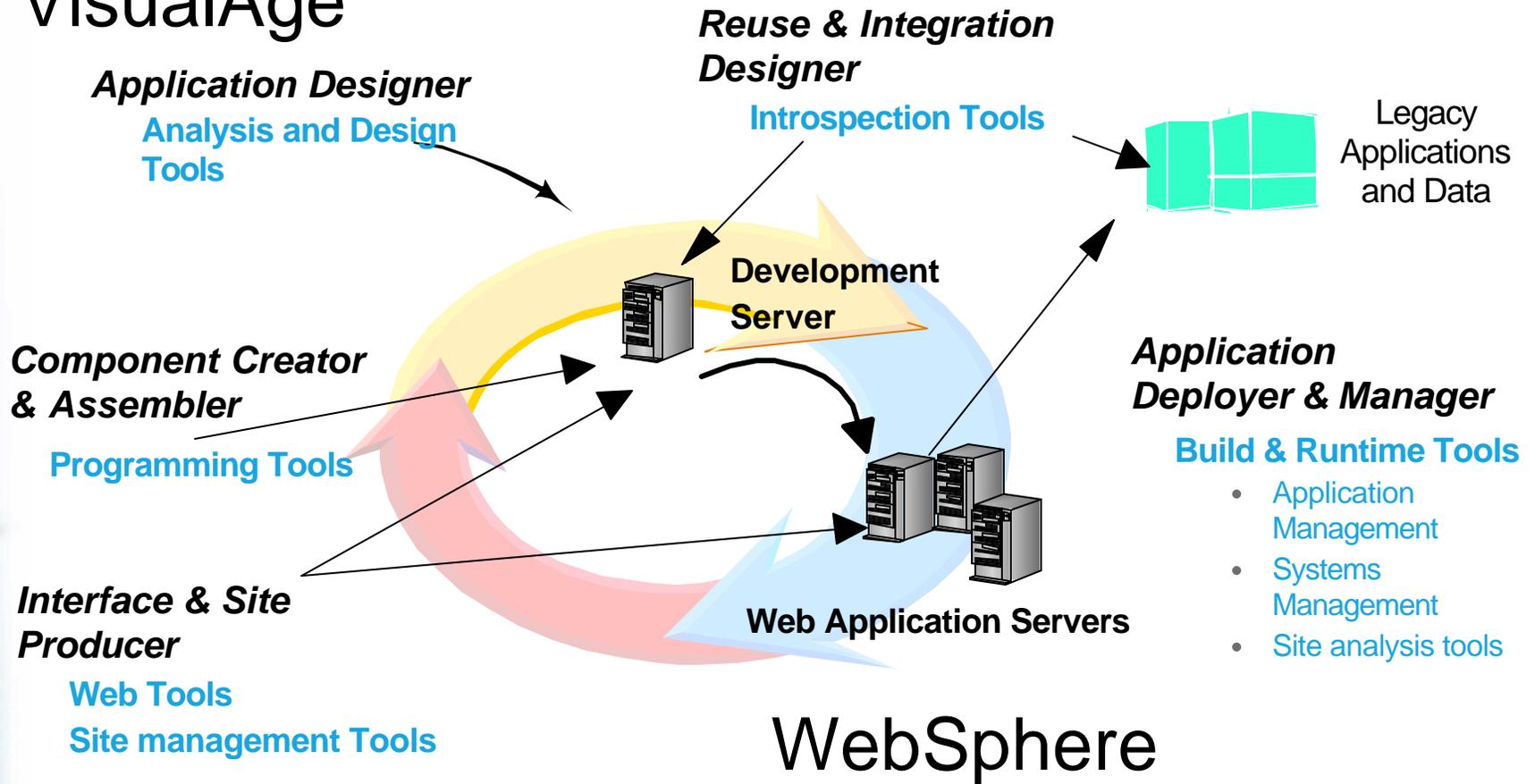




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Integrated Roles-based Tools

VisualAge



WebSphere

Studio

Integrated, Productive, Team-based Development

- Tools that work together, for people who work together
- Design, build, test, run, manage -- tools that do the right job, and the whole job
- End-to-end solutions





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WebSphere AD Tools

The Components

OO Integration Architects

OO Application Programmers

Traditional Application Programmers

Web Site Producers

Application Complexity

WebSphere Server

San Francisco

The Tools

VisualAge Component Development for WAS EE

VisualAge for Java, EE

VisualAge for Java, EE

VisualAge Generator

VisualAge Generator

WebSphere Studio

WebSphere Studio

WebSphere Studio

Standard Edition

Advanced Edition

Enterprise Edition

Presentation

Application

Integration

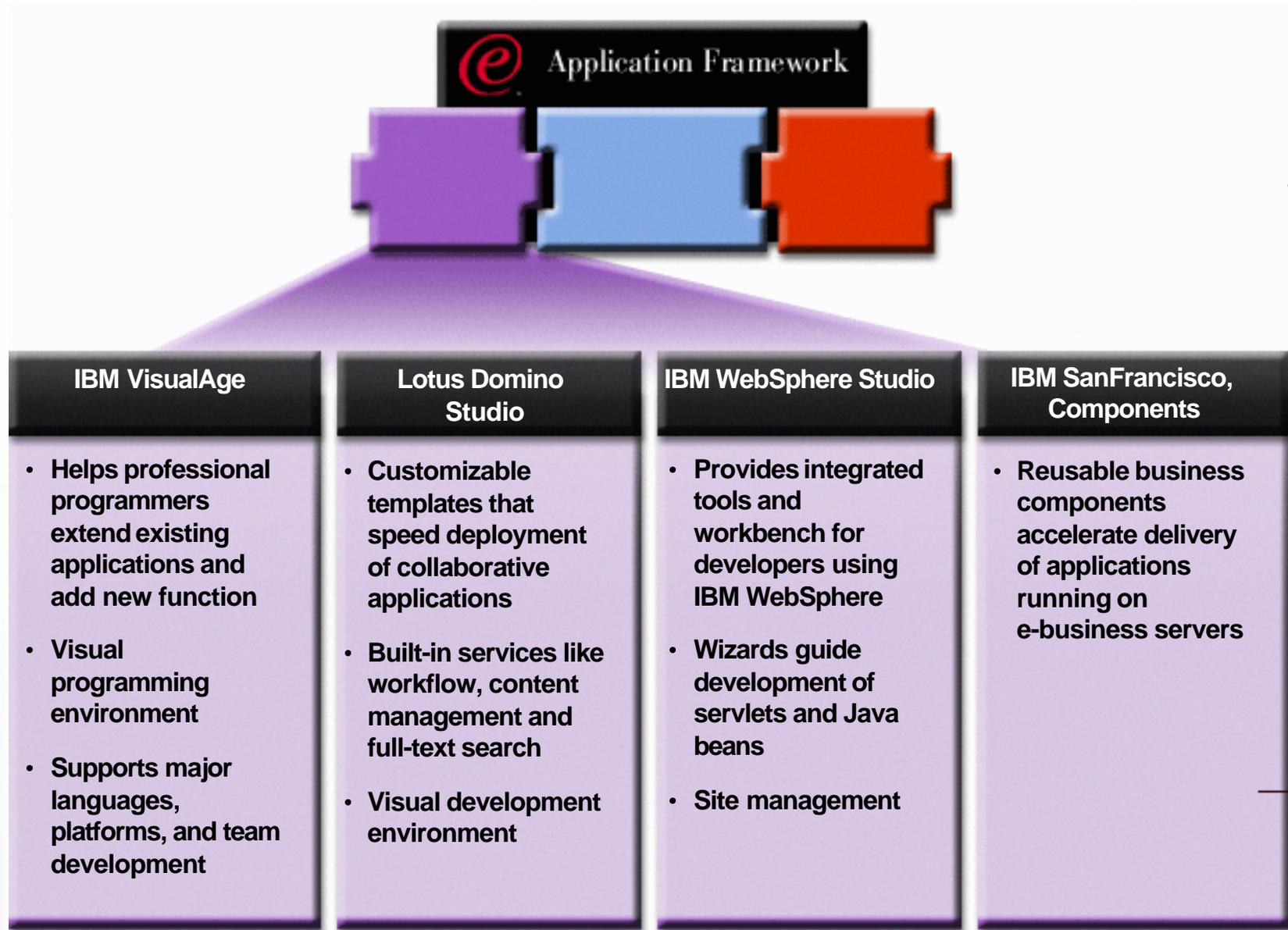
The





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Development Tools and Components





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e-business at Harvard University

Challenge

- ▶ Aging applications in Registrar's Office
- ▶ Difficult to use and maintain

Solution

- ▶ Create a new object-oriented application layer that leverages existing systems

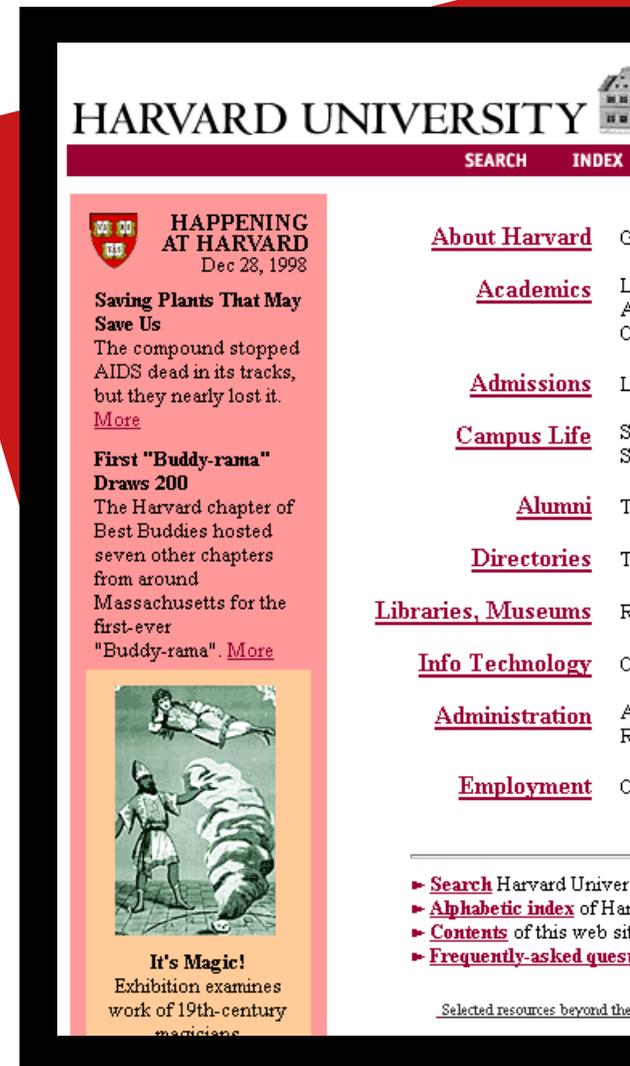
Business Value

- ▶ Users are productive in days, not months
- ▶ Application supports new users
- ▶ 70% faster maintenance

Products

- ▶ VisualAge for Java

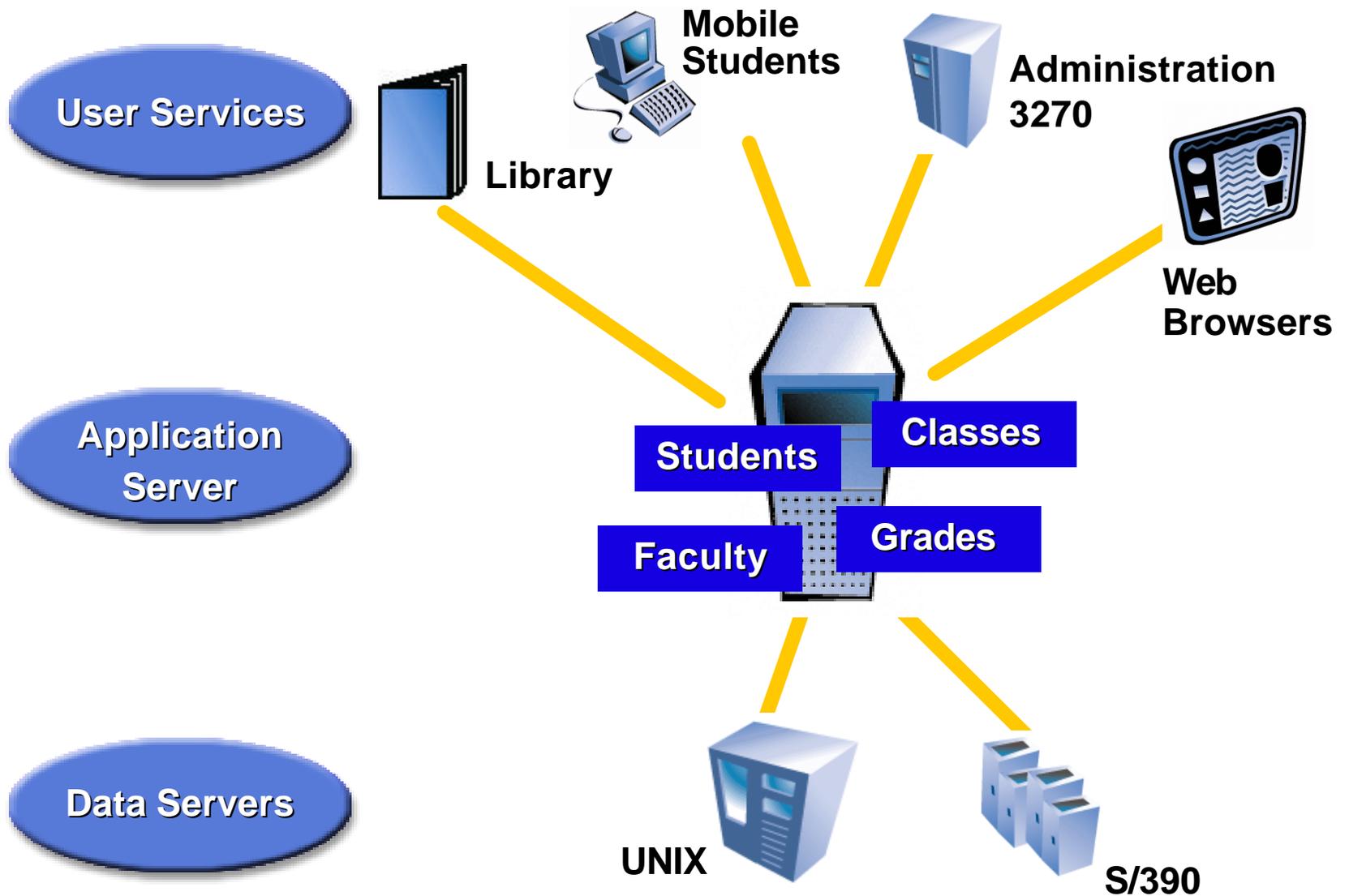
Jonathan Clay, Chief Technologist at Nevo:
"VisualAge for Java *puts the "integrated" into IDE.* Everything you need for full-scale, professional development together in one complete package."





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Harvard University





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The Bottom Line

IBM is the Industry Leader in Providing Robust e-business Application Services (Middleware) to Enterprise Customers, Worldwide ...

... and ...

IBM's Best-of-Breed **Application Development Solutions** Provide the Most Effective Way for Customers to Exploit these Application Services.





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Opportunities / More Information

■ Opportunities

- ▶ Use IBM tools with our runtimes for maximum productivity
- ▶ Promote / sell IBM tools to your customers
- ▶ OEM / imbed IBM tools in your offerings

■ More Information

- ▶ www.software.ibm.com/ad
- ▶ Your IBM contact

■ Questions for me?

- ▶ damassa@us.ibm.com
- ▶ (914) 766-1564





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