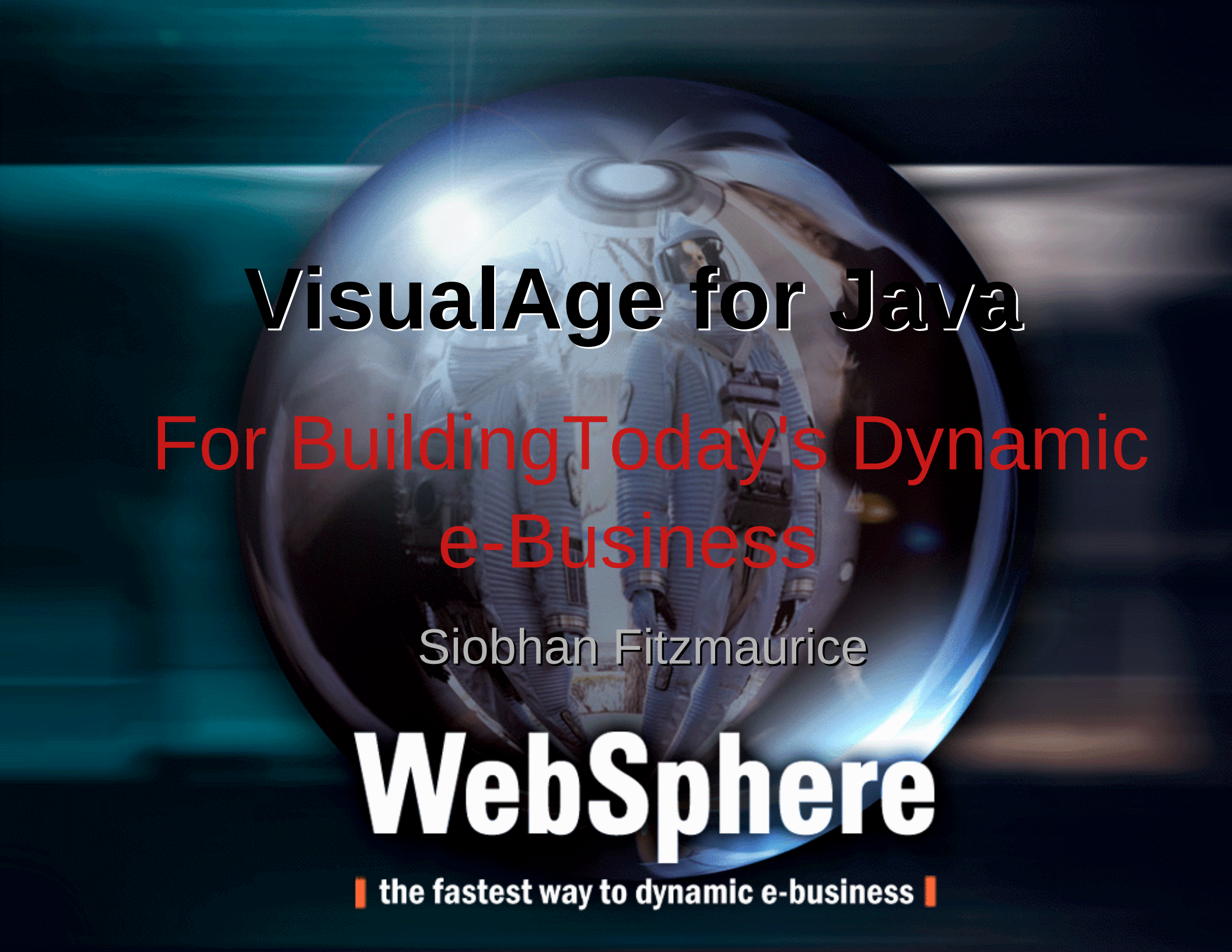
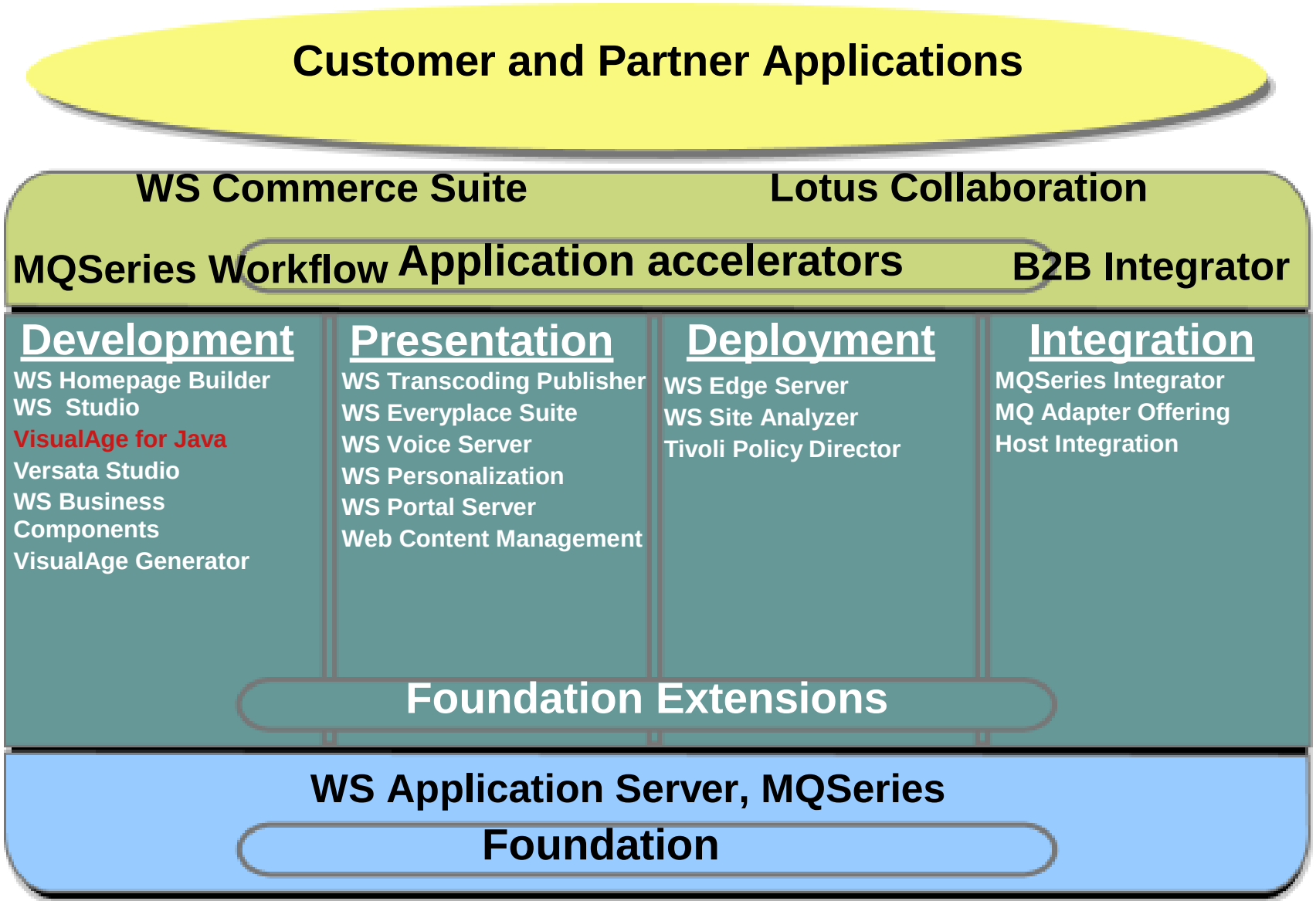
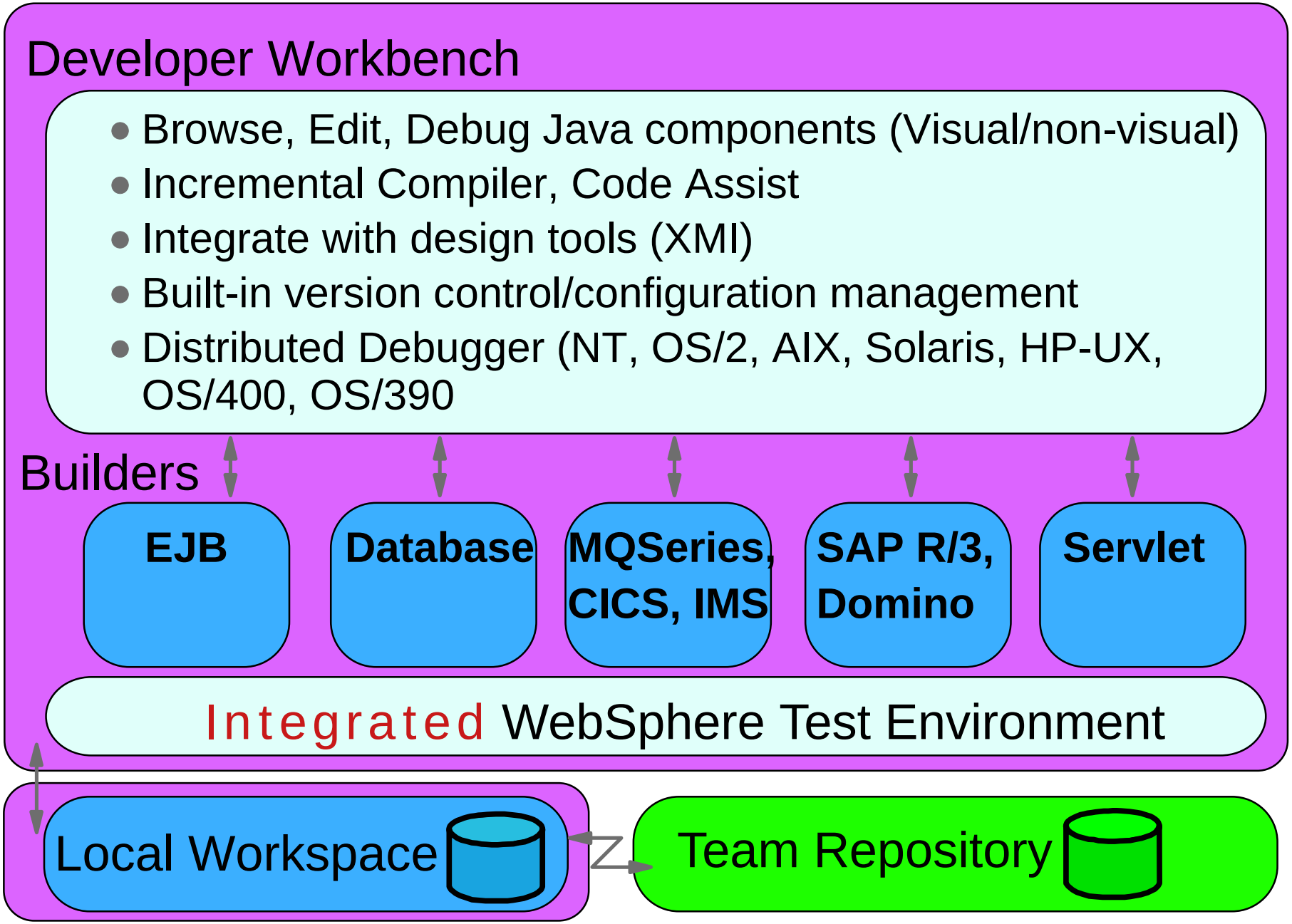

VisualAge for Java
For BuildingToday's Dynamic e-Business
Siobhan Fitzmaurice
WebSphere
the fastest way to dynamic e-business

IBM WebSphere Platform for Dynamic e-Business

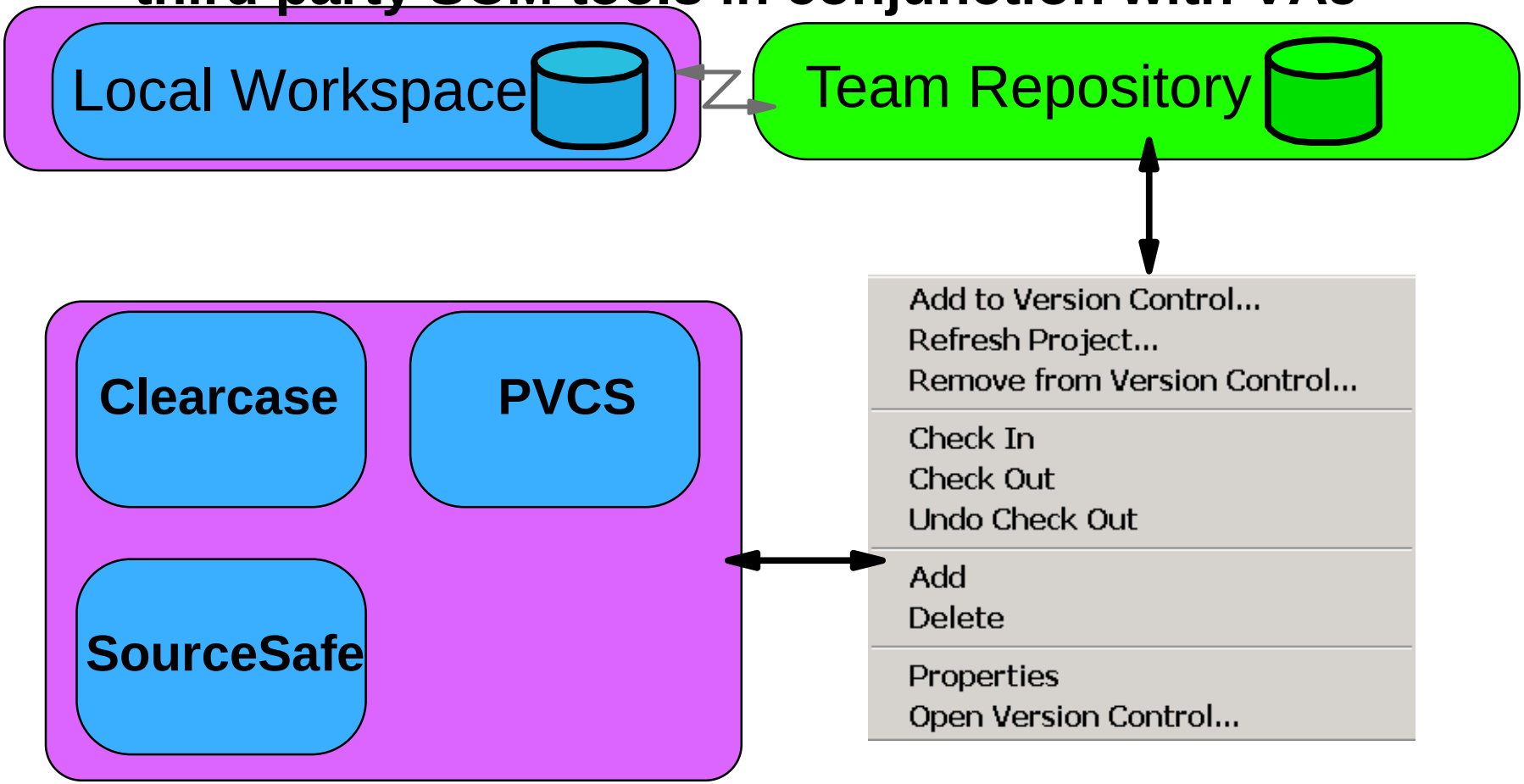


VisualAge for Java Enterprise



VisualAge for Java Enterprise

- **Team Development Environment**
  - **External SCM Support allows you to use other third party SCM tools in conjunction with VAJ**

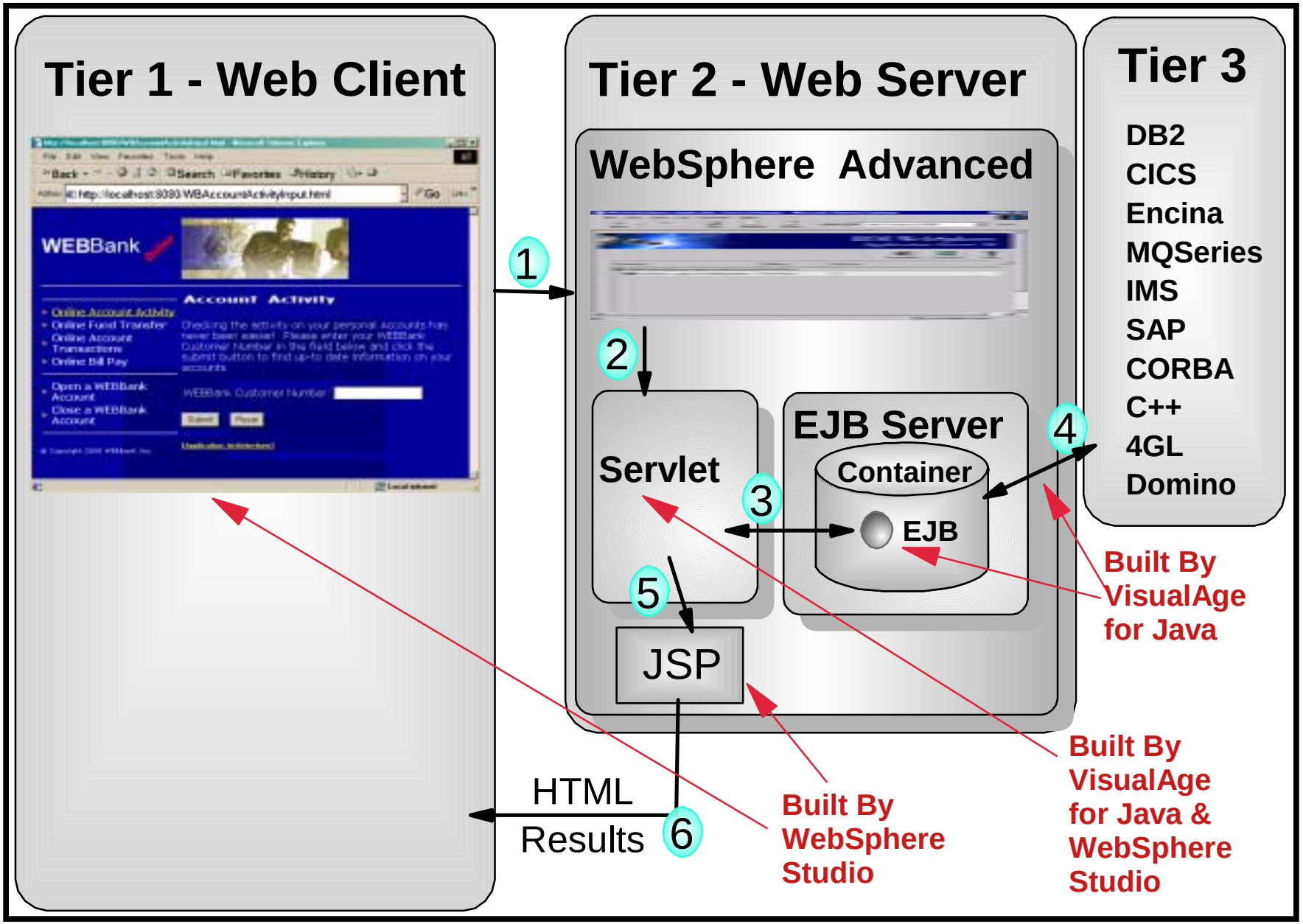


Professional	Enterprise	Features (partial list)
✔	✔	Support for JDK 1.2.2 and Swing 1.1
✔	✔	Integrated Development Environment
✔	✔	Visual Composition Editor
✔	✔	Data Access Beans
✔	✔	External SCM Support - Integration with Team Connection, Clearcase, PVCS, and Visual SourceSafe
✔	✔	Open Tool Integrators API
✔	✔	SQLJ Support
✔	✔	DB2 Stored Procedure Builder
✔	✔	WebSphere Test Env. (JSP, Servlet, JavaBeans)
✔	✔	Servlet Wizard
	✔	Team Programming Support
	✔	WebSphere Test Env. (JSP, Servlet, JavaBeans, EJBs)
	✔	EJB Development (code to EJB 1.0, deploy to EJB 1.1)
	✔	ET/390, ET/400 (Dev. on wkstn, Remote Debug, etc.)
	✔	Enterprise Access Builders (CICS, MQ, IMS, SAP R/3, HOD, Encina), Support for C++, IDL, Tivoli, Domino
	✔	Persistence Builder

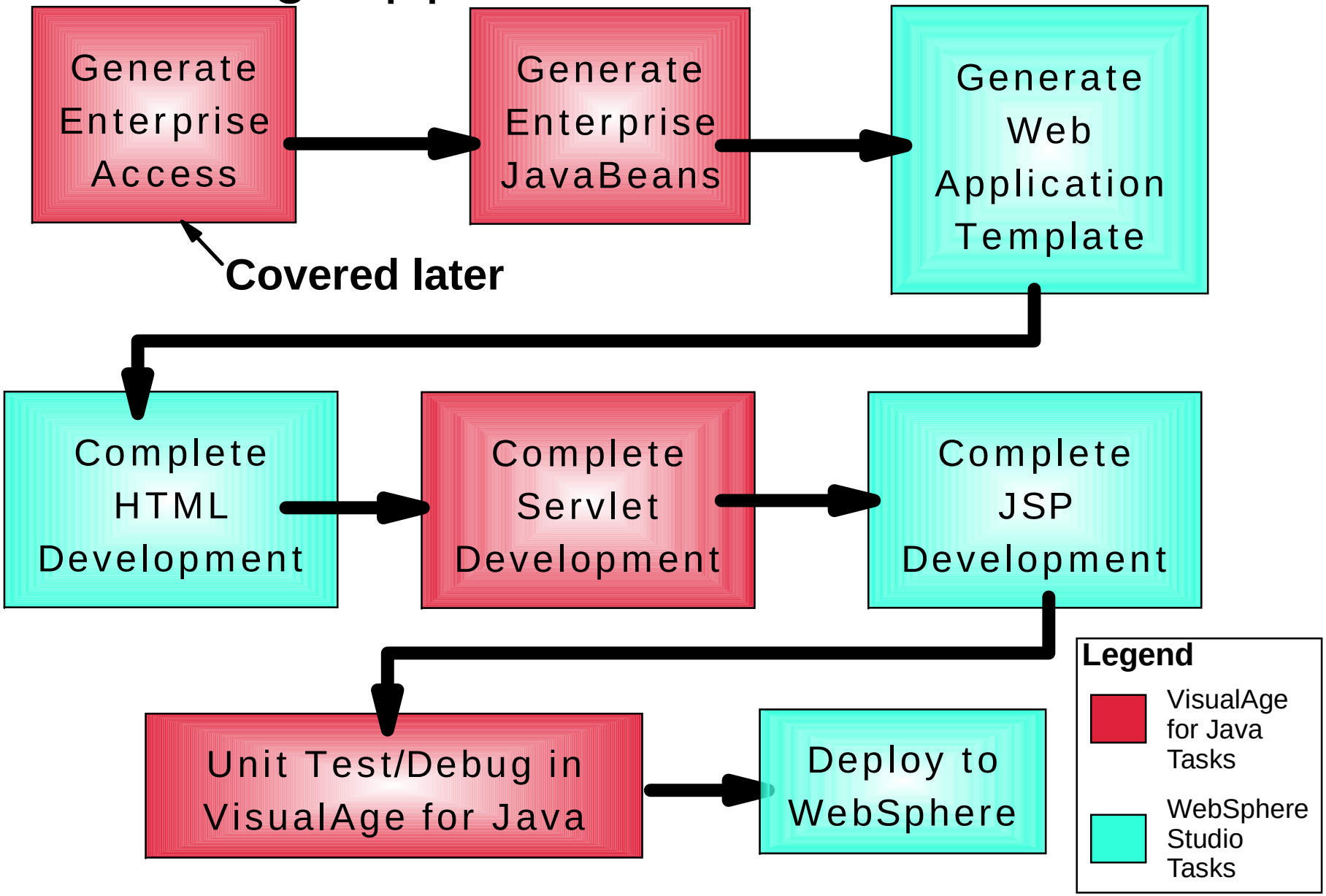
Productivity Features

- ★ **Incremental Compilation**
- ★ **Code Assist**
- ★ **Dynamic Debugging**
- ★ **Servlet Wizard**
- ★ **EJB Wizard**
- ★ **Scrapbook**
- ★ **Unit Test Environment**
- ★ **Enterprise Access**
  - ➡ **Now suppport J2EE Connector Archecture (Beta)**

Web Application Topology

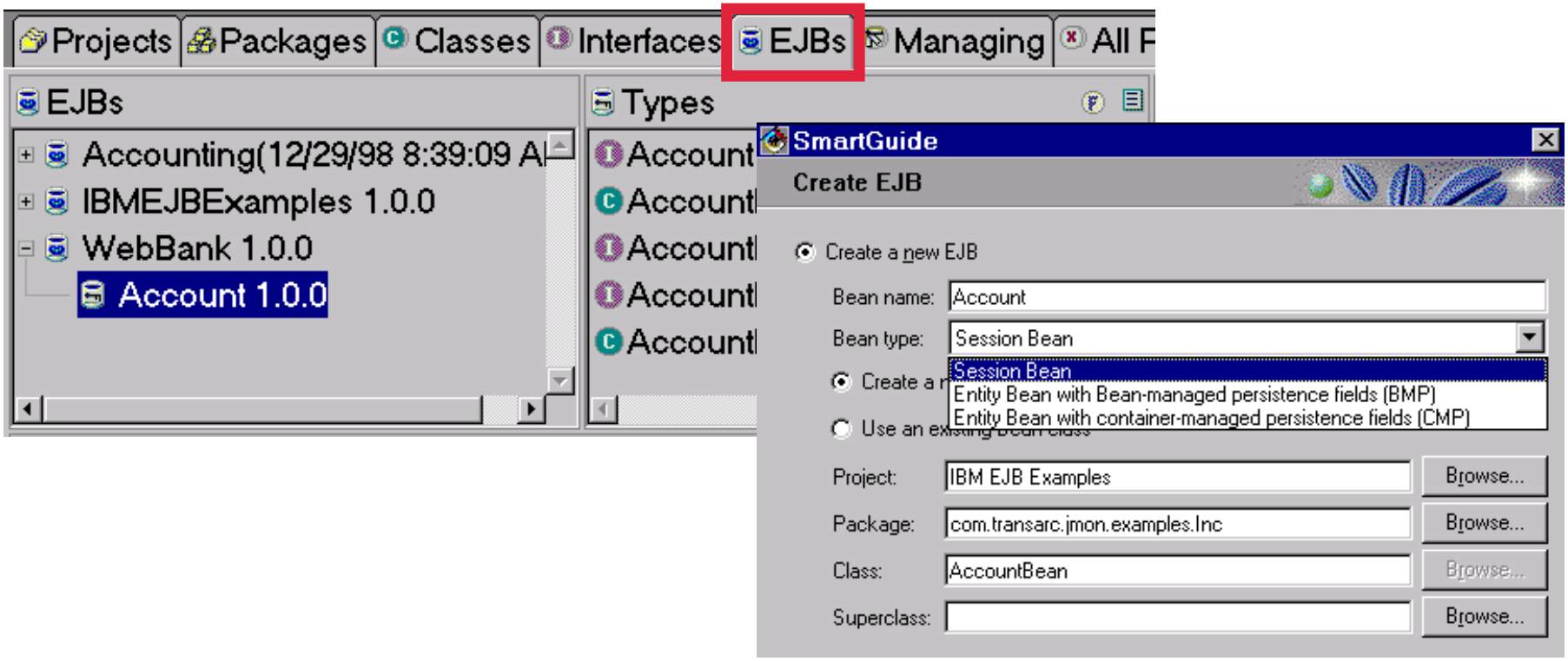


Building Applications



Creation/Development of EJB

- **In VisualAge for Java, easily create session/entity EJBs**
  - **Vastly simplifies server and client EJB development**



Creating EJBs

- **Quickly create Entity EJBs from existing database Schema or Object Model**
  - **Generates association relationships in EJB model**
    - **e.g. Customer has 1:m Accounts**

EJB Development - Mapping Approaches

- **Bottom Up**
  - **Map existing databases tables to EJB entities**
- **Top Down**
  - **SmartGuide creation of EJBs**
  - **Map Model to EJB Entities (Tech Preview)**
  - **Generate Database/Tables from EJB Entities**
- **Meet in the Middle**
- **O/R Mapping**
  - **Associations with cardinality (1:m, m:m, etc), Inheritance, etc.**

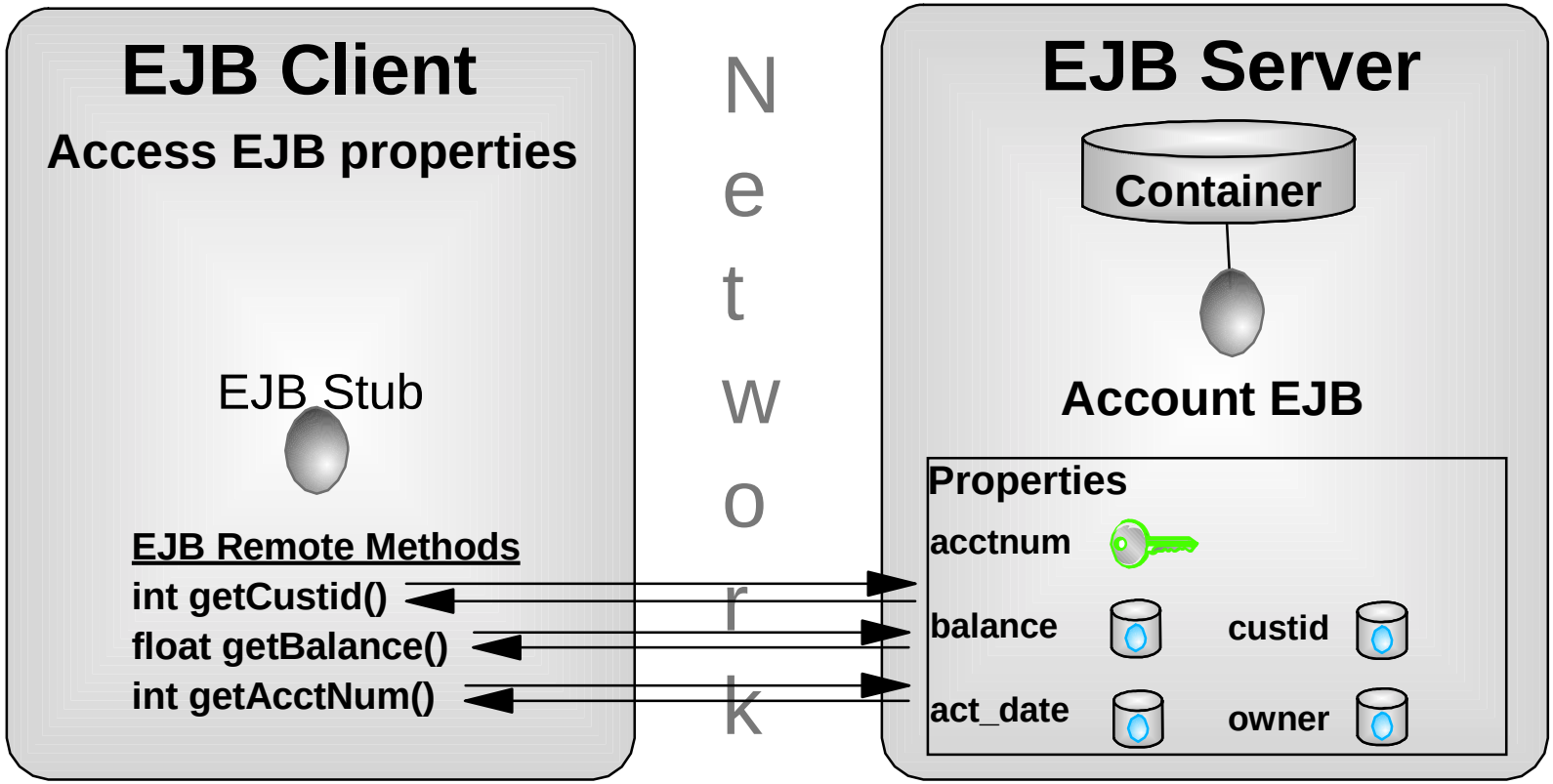
EJB Client Programming Model

- **Traditional EJB client programming model:**
  - **Obtain a context to the name server**
  - **Look up the home of the enterprise bean using the name service context.**
  - **Create an enterprise bean instance from the enterprise bean home, which returns an enterprise bean proxy object.**
  - **Accesses the remote methods of the enterprise bean**

Bottom Line: Lots of steps

EJB Client Programming Model

- **Accessing the EJB remotely**



Bottom Line: Performance may be an issue

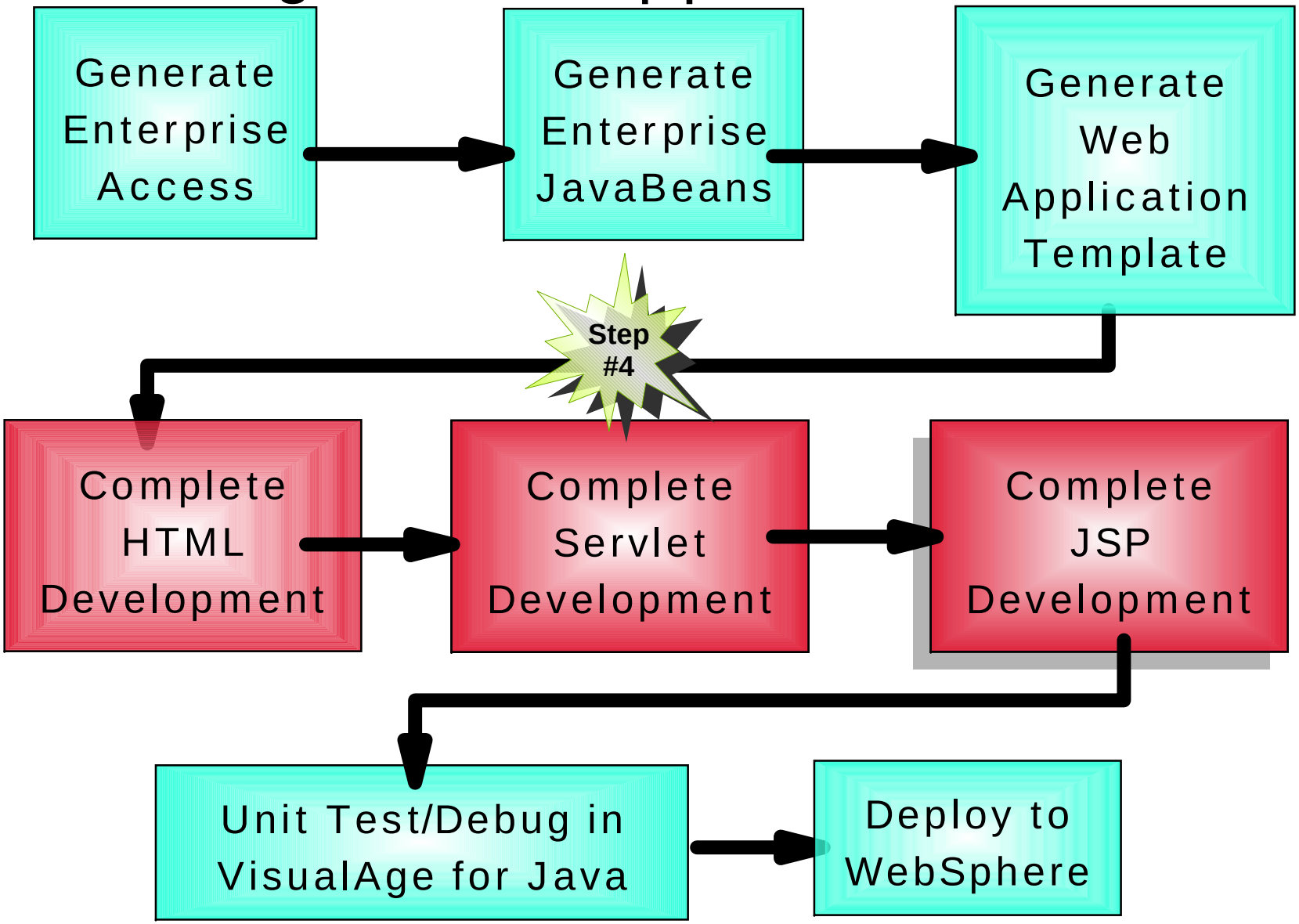
The Solution: Access Beans

- **Simplify the client EJB programming model**
  - **JavaBean wrapper for EJB client**
  - **Access EJBs like a JavaBean!**
    - **Home Interface methods mapped to JavaBean constructor**
    - **Remote Interface methods mapped to JavaBean methods**

Access Beans

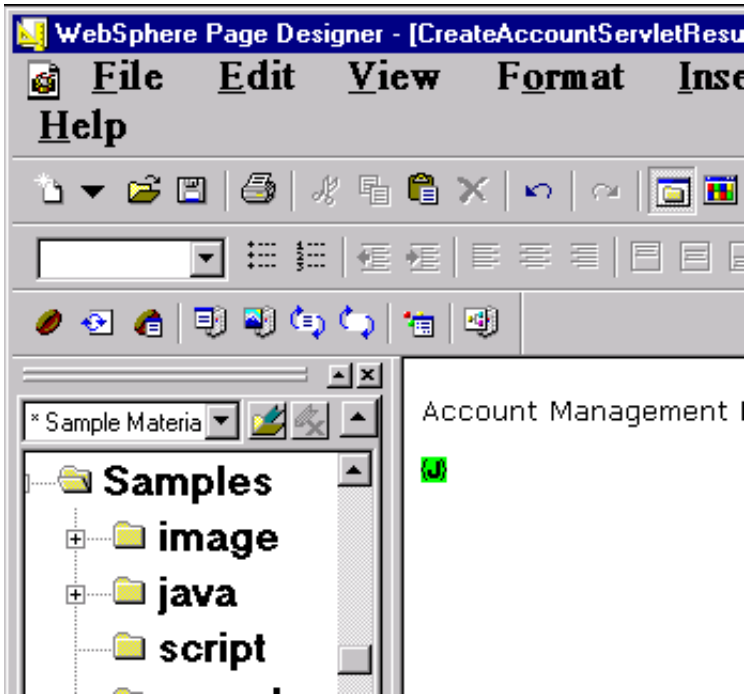
- **Optimize the client EJB access to EJB properties**
  - **Optionally cache properties on client**
    - **Access properties locally without going to server EJB**
    - **Methods generated to synchronize client cache with EJB**

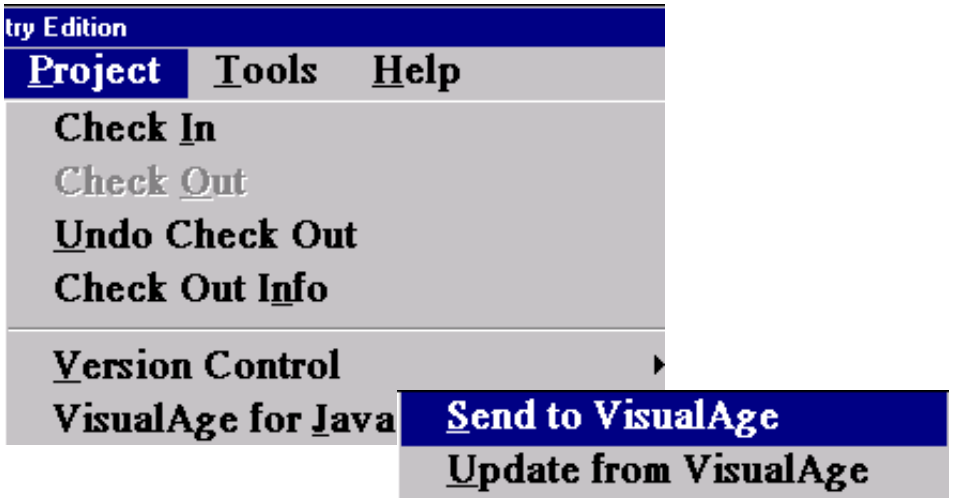
Building a Web Application



Development of the HTML/Servlet/JSP

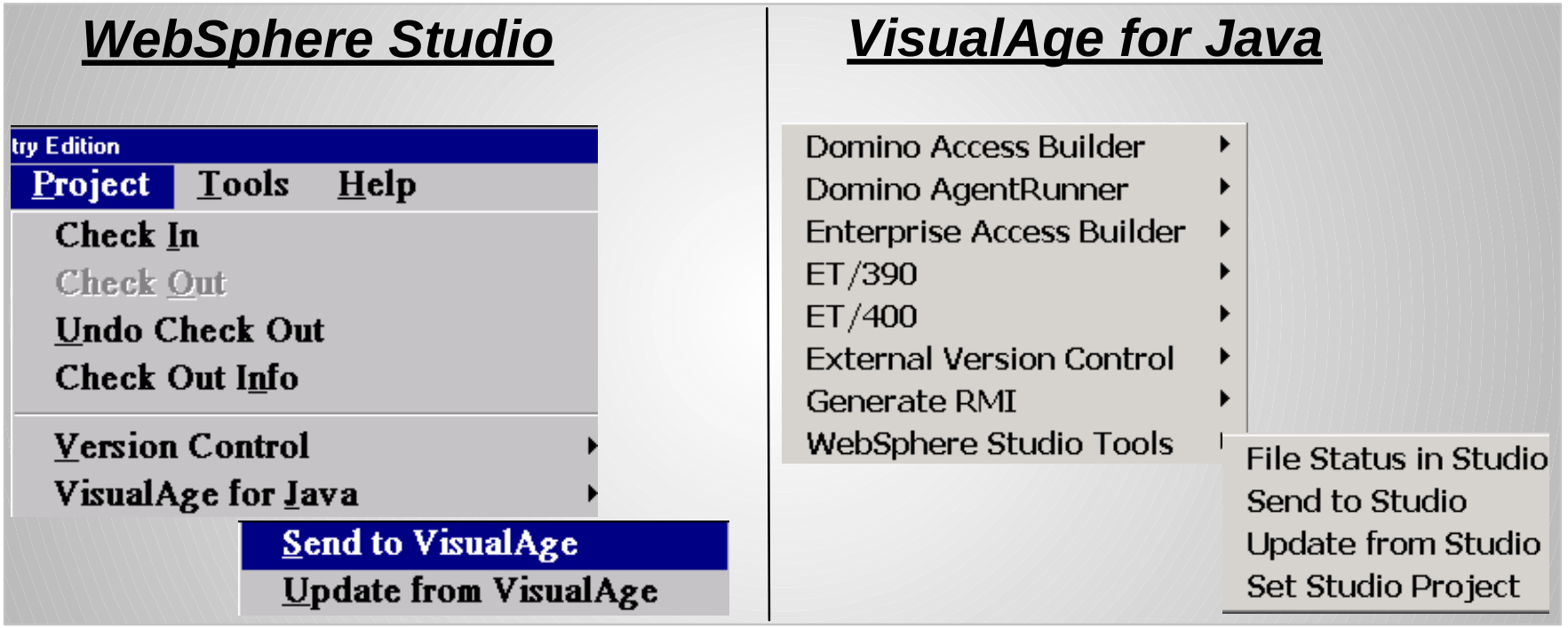
- **Use WebSphere Page Designer to customize HTML/JSP**
- **Send generated servlet to VisualAge for Java for customization and testing**



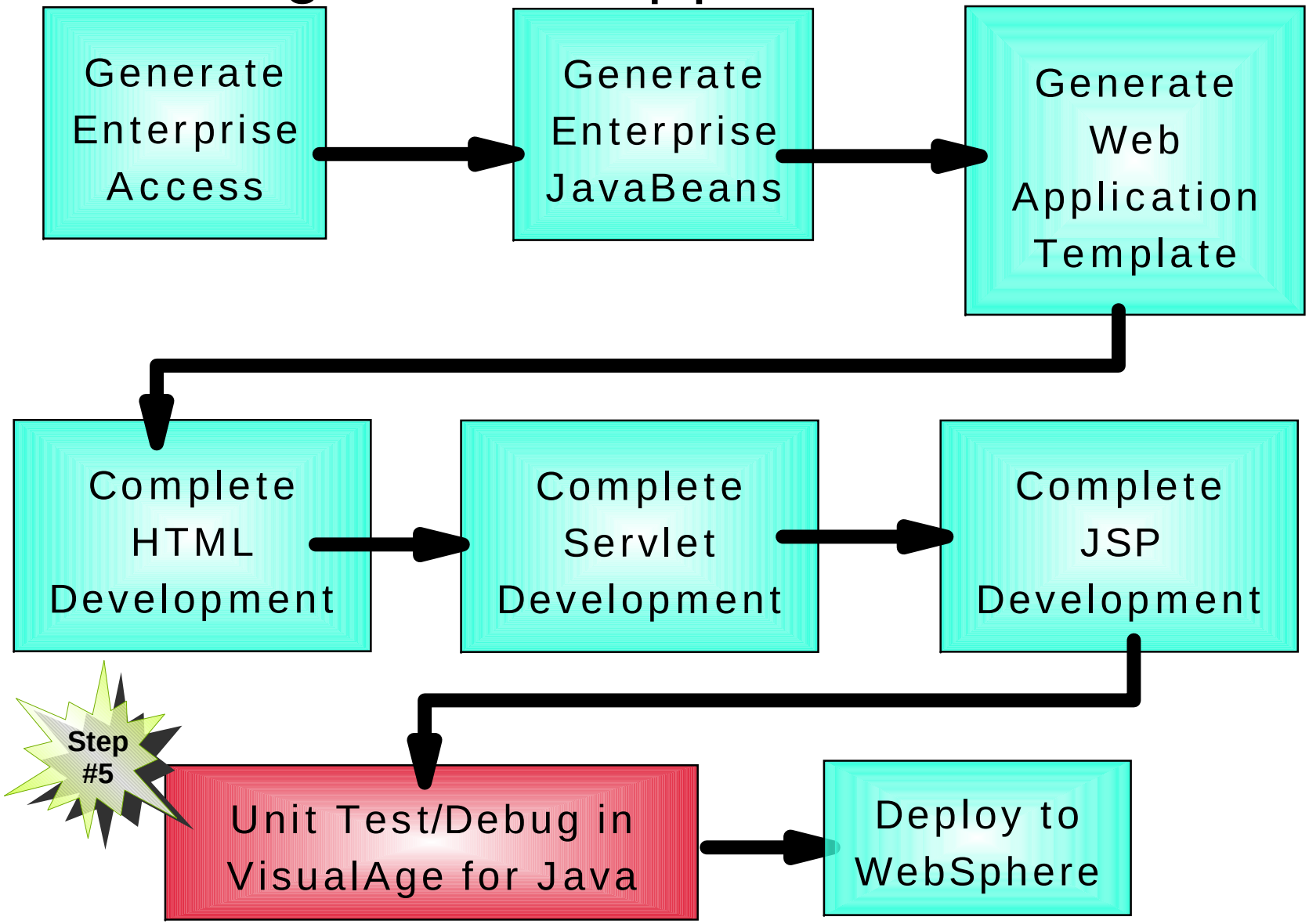


WebSphere Studio/VisualAge for Java Integration

- **Send components either way from either tool!**
  - **Send files from WebSphere Studio to VisualAge for Java**
  - **Send files from VisualAge for Java to WebSphere Studio**



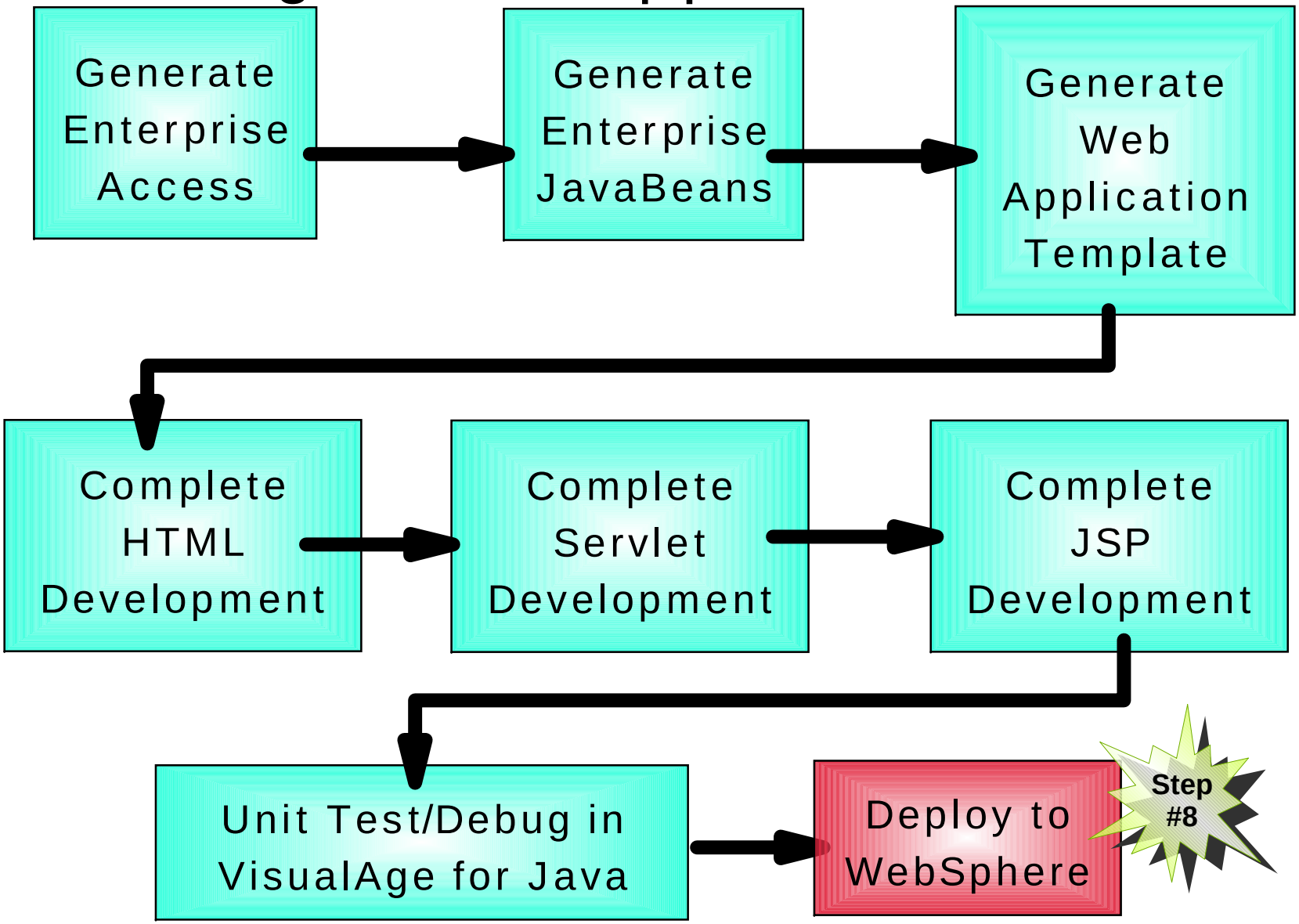
Building a Web Application



Unit Testing

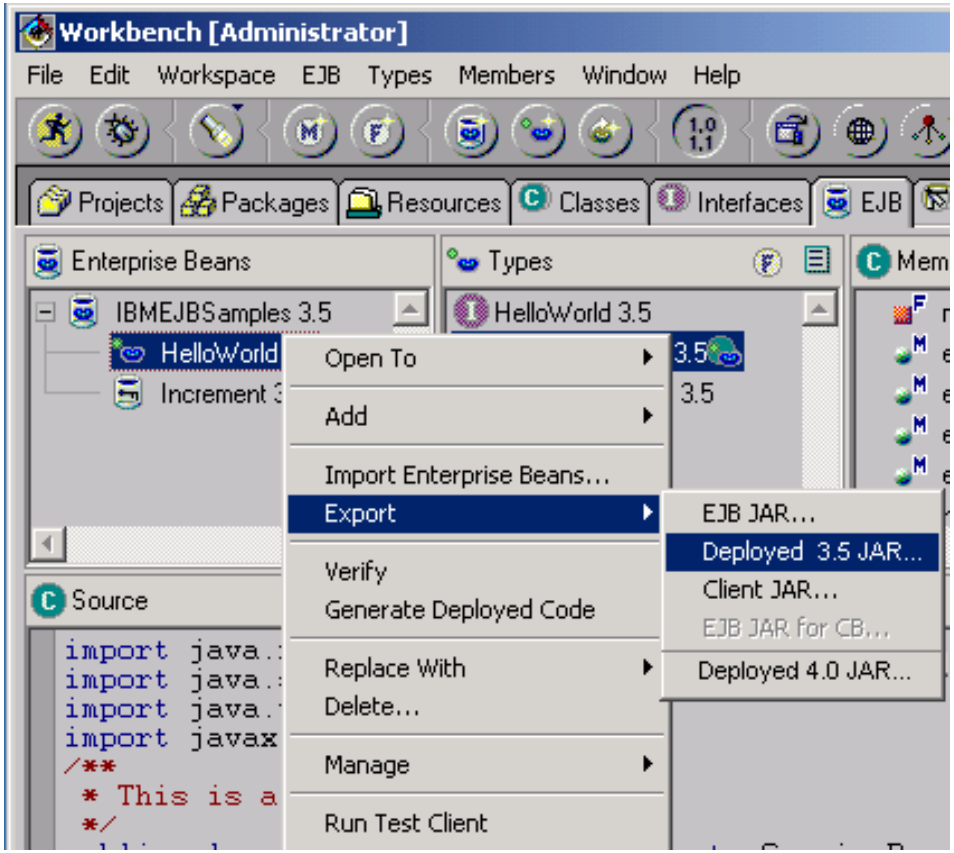
- **WebSphere Test Environment**
  - **Integrates WebSphere 3.5 Application Server into VisualAge for Java IDE!**
  - **Unit Test/Debug Servlets/EJBs**
  - **Unit Test HTML/JSPs**
  - **Monitor Execution of JSPs**
    - **HTML sent to client**
  - **VisualAge for Java is bundled with WebSphere Application Server 4.0 for unit testing**

Building a Web Application



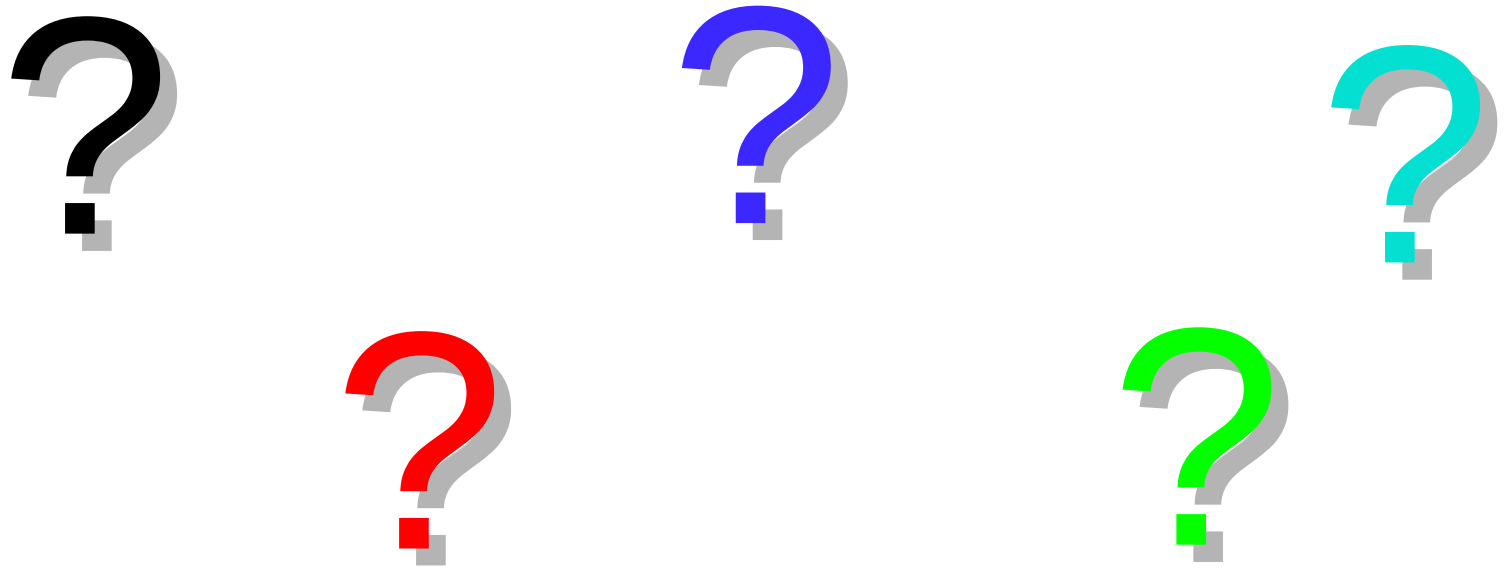
Deploying Web Applications using V4.0

- **WTE supports Servlet 2.2, JSP 1.1, EJB 1.0**
- **Export EJB 1.1 compliant JAR for WS 4.0**
- **Command-line EJB deployment to J2EE-Compliant WebSphere Application Server V4.0**



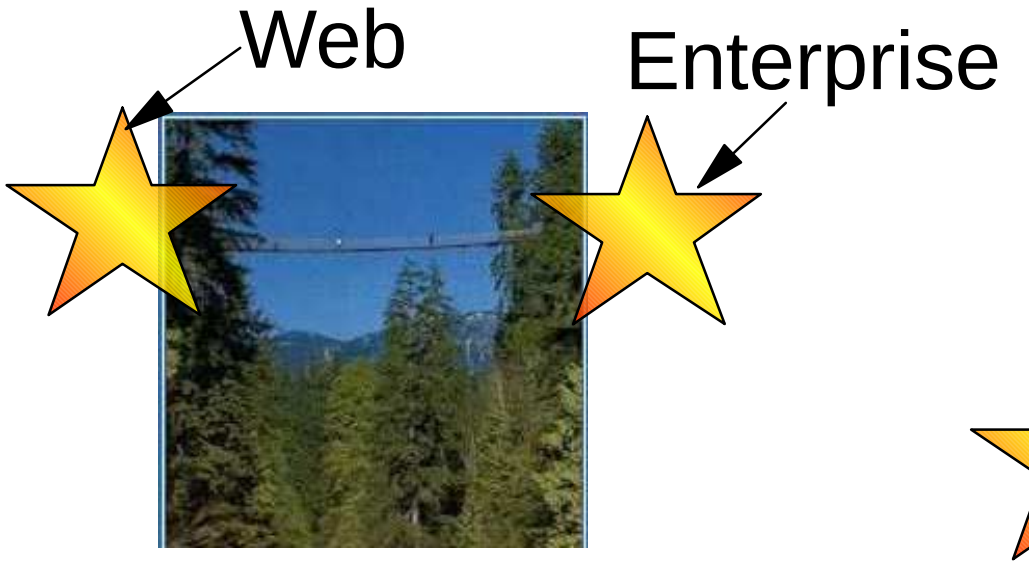
	Servlet 2.2	JSP 1.1	EJB 1.1	JCX 1.0
WebSphere V4 Runtime	Exploit	Exploit	Exploit	Exploit
VA Java V4 Tools	Exploit	Exploit	Tolerate	Exploit

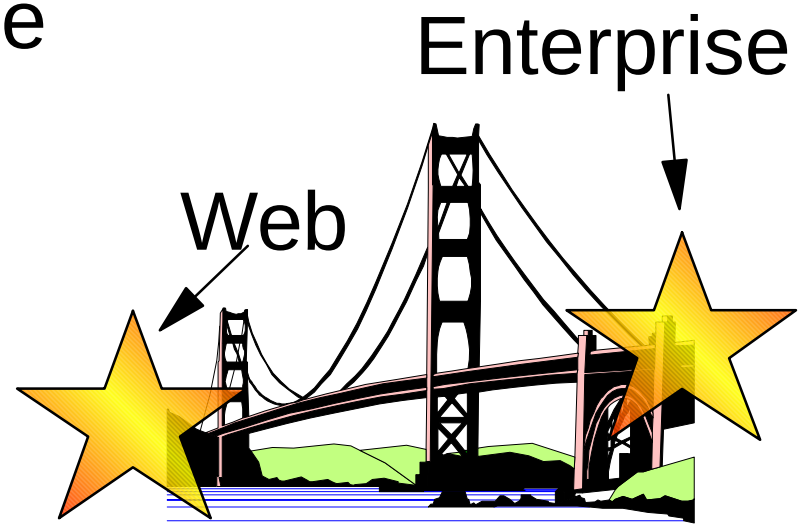
What about that Enterprise Access?



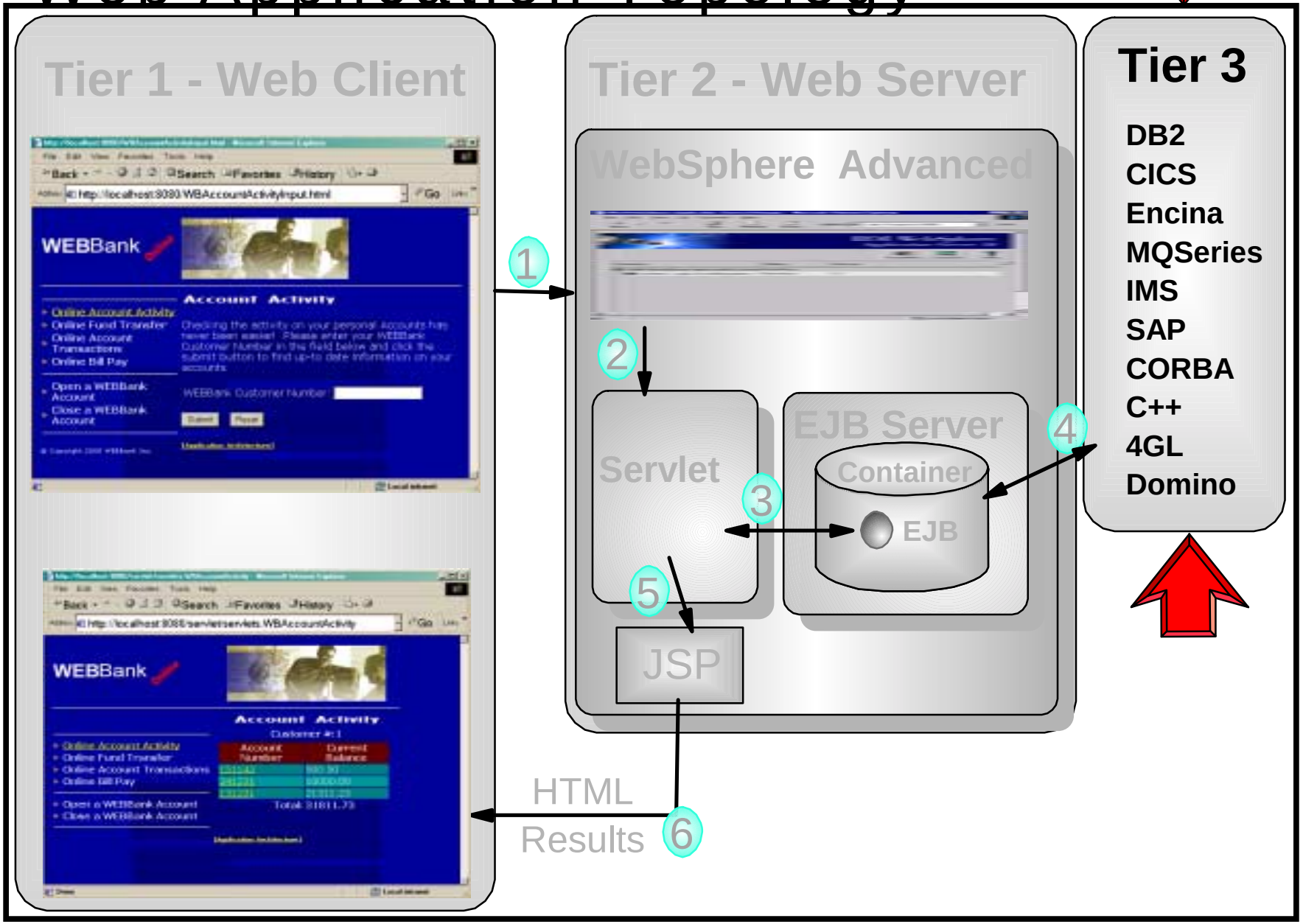
Questions You Must Ask Any Vendor

- **"How do you integrate into my business critical** transactions**,** data **or** applications**?**
  - **The answer can't be: "Link to the middleware APIs"**
  - **Weak links between the web and the enterprise will not help build business critical solutions**





Web Application Topology



Enterprise Access Builder

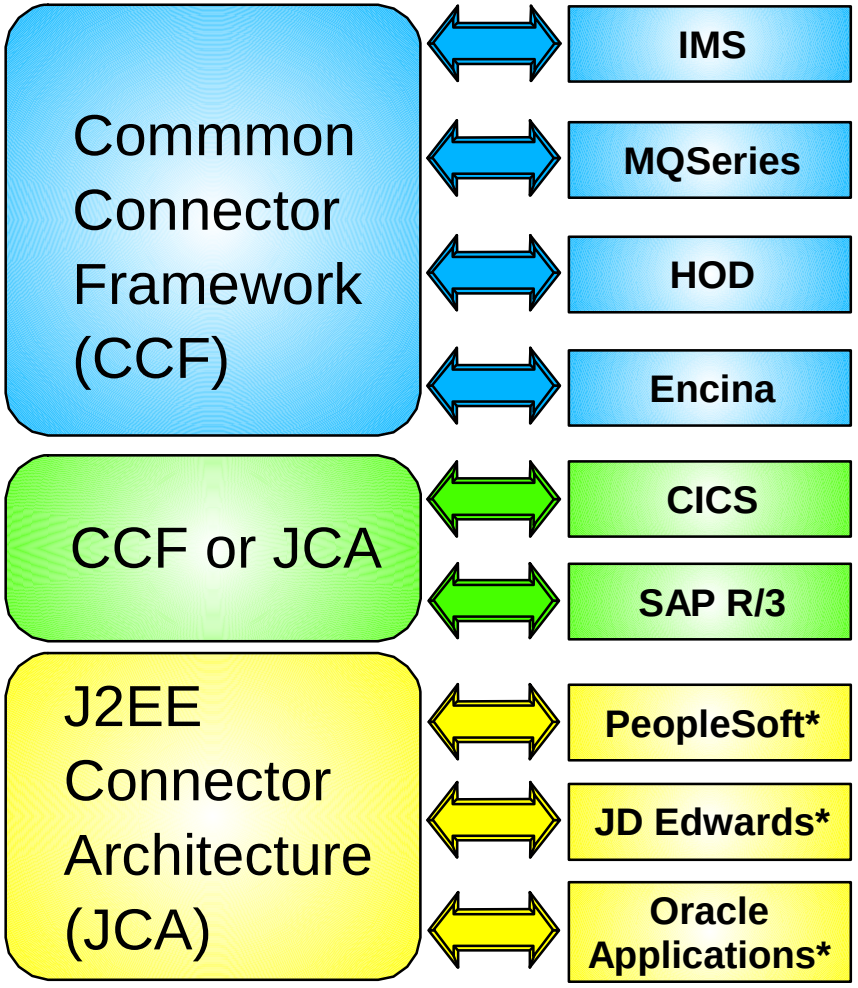
- **Integrated solution for accessing:**
  - **MQSeries, CICS, Encina, IMS, HOD, SAP R/3, PeopleSoft, JD Edwards and Oracle Applications**
- **Developers do not worry about:**
  - Converting datatypes
  - Coding to middleware
  - Building data buffers (e.g. COBOL CommAreas)

Enterprise Access Builder

VisualAge for Java

Enterprise Access Builder Tooling

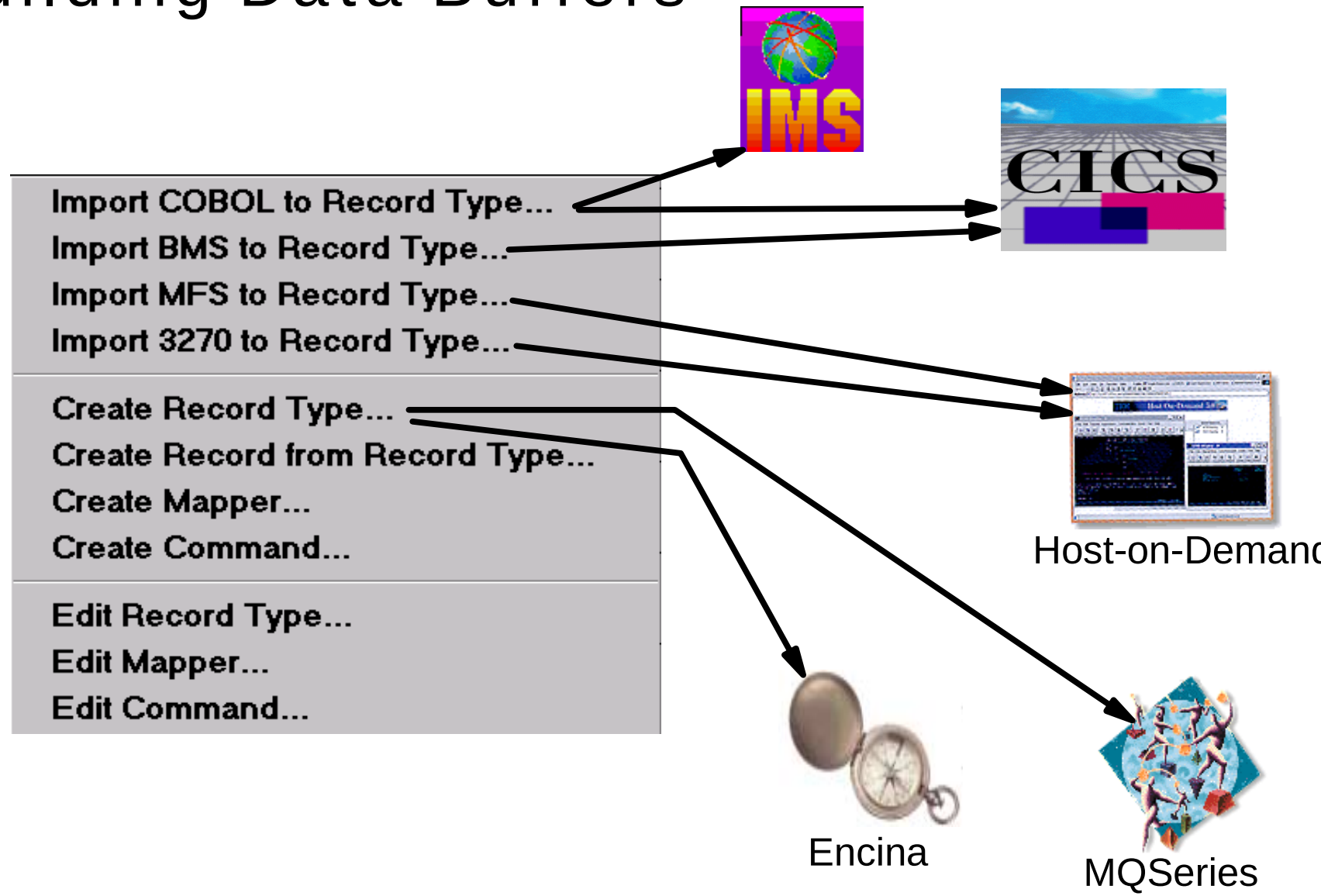
- Import COBOL SmartGuides
- Import 3270 SmartGuides
- Import BMS SmartGuides
- Command Editor
- Mapper Editor
- Navigators
- CCF to JCA Migration SmartGuides
- Other Built-in Tooling



*** Currently Windows NT only**

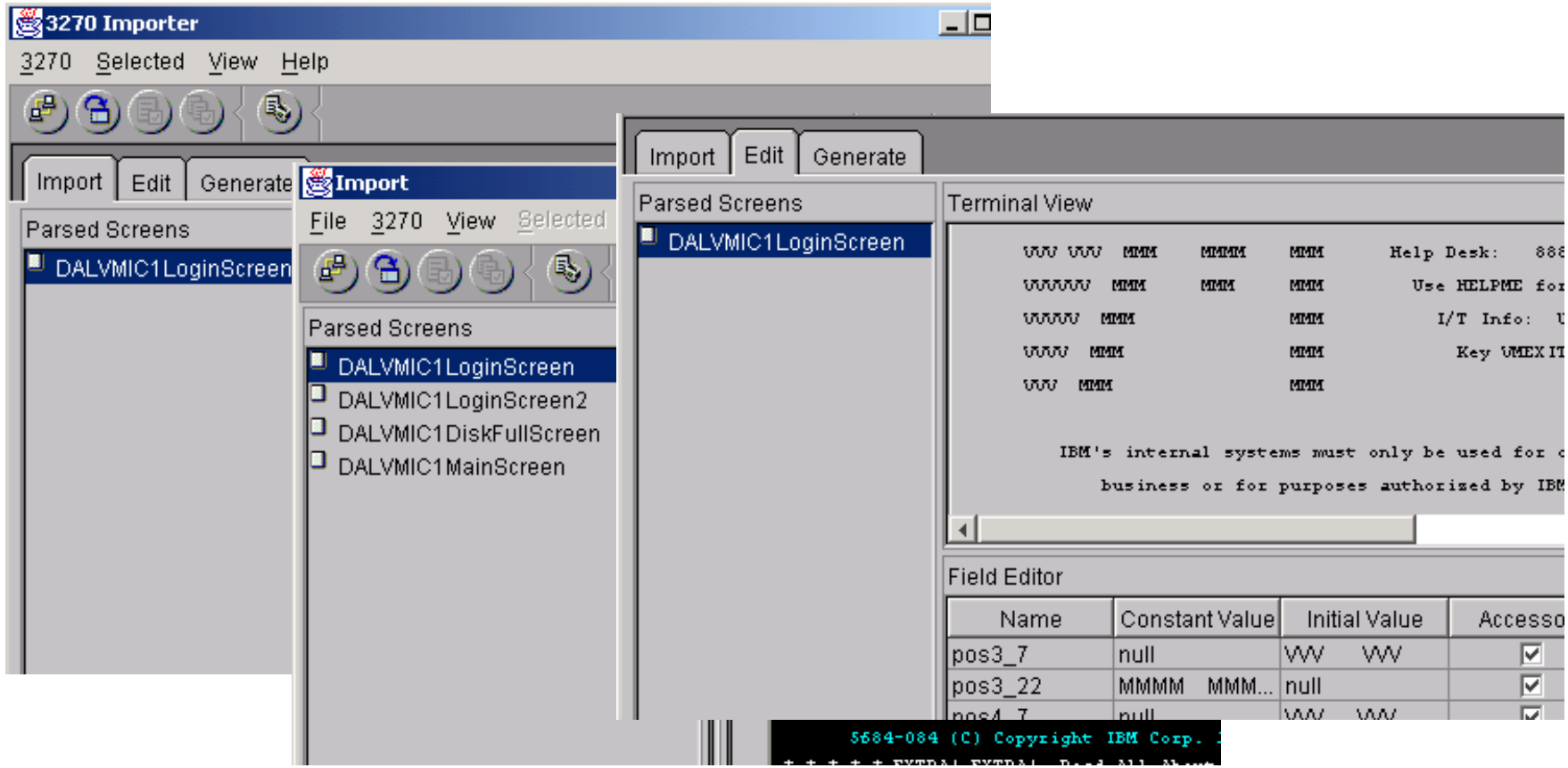
Use builders, not code to middleware APIs

Building Data Buffers



Enterprise Access Builder

- **Example: 3270 Importer SmartGuide**

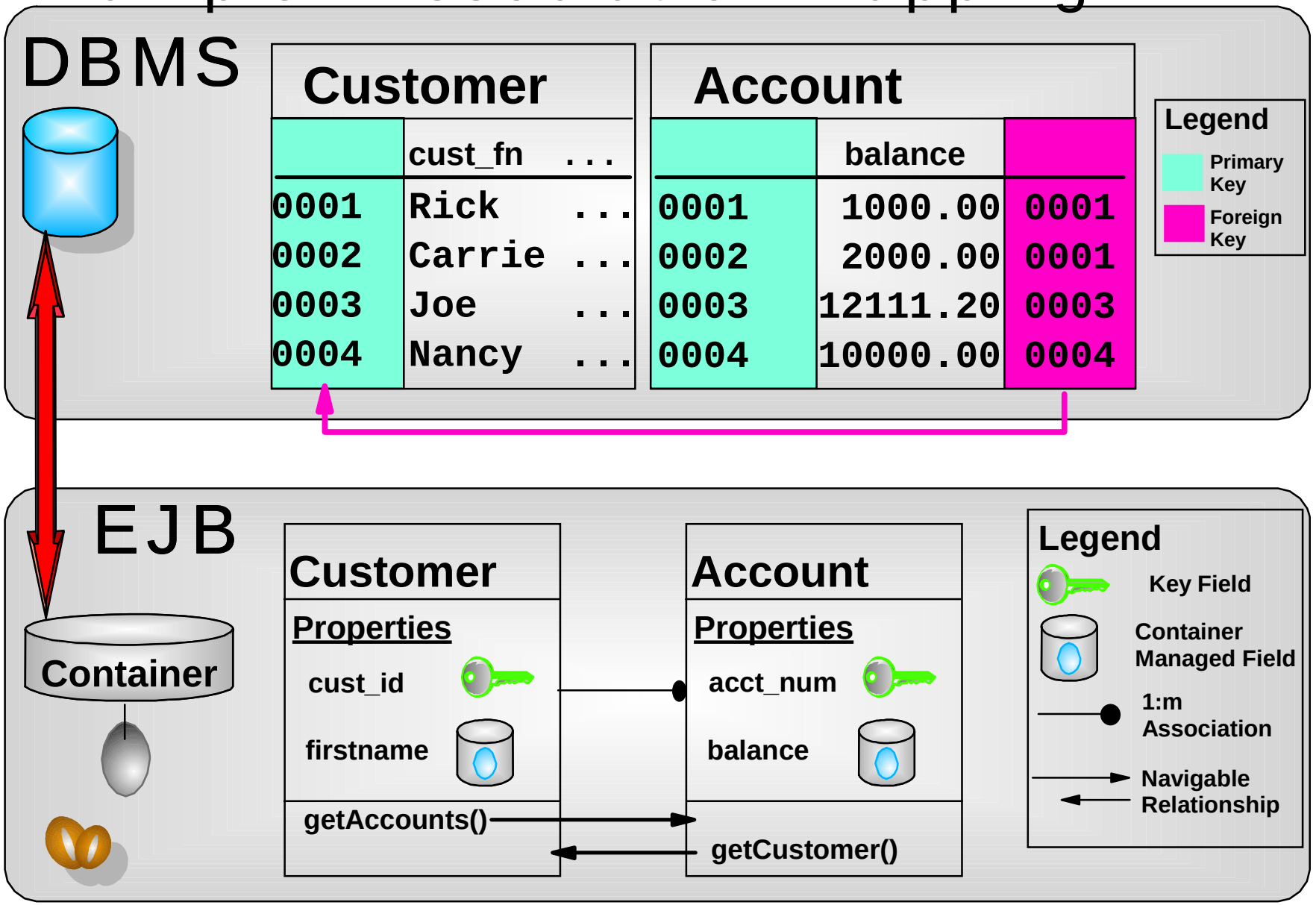


Many other Enterprise Solutions

- **Persistence Builder**
  - **Object-Relational Mapping for EJBs or JavaBeans**
    - **Single Table**
    - **Secondary Table (multiple tables->1 component)**
    - **Inheritance mapping (Single Table, Root/Leaf)**
    - **Association mappings**

All are provided in VisualAge for Java

Example - Association Mapping



Many Other Enterprise Solutions

- **Data Access Beans**
  - **Create/Retrieve/Update/Delete support**
  - **Invoke Stored Procedures**
- **SQLJ Development Environment**
  - **Develop Java based SQLJ access to databases**
- **DB2 Stored Procedure Builder**
  - **Create/Test/Deploy stored procedures to DB2**
- **IDL, C++, Tivoli, Domino, and more...**

So What Does This all Mean?

e-business References

VisualAge for Java's Success - Partners Developing for VisualAge for Java

- **Rational Partnership**
  - **Rose for modelling, ClearCase for SCM, and others**
  - **w3.developer.ibm.com/depts/spra/RATIONAL/downloads/IBM_alliance.pdf**
- **Instantiations**
  - **VA Assist Enterprise/J**
    - **IDE and Team server enhancements**
  - **http://www.instantiations.com**
- **Sitraka (formerly KL Group)**
  - **JProbe - Java profiling tool**
  - **http://www.sitraka.com/**
- **Find many others on our patner Web site**
  - **http://www.ibm.com/software/ad/partners/**

VisualAge for Java's Success - Growing with Awards

WebSphere Studio wins
"Best of Show"
for Web Application Development
October 1999

Our new Version 3.0 beta is
turning up the heat
on the competition!
Reviewed August 1999

Version 2.0 is
"The ideal IDE for both
beginners and experts!"
Reviewed August 1999

IBM & Allied Signal
Best Enterprise Application Integration
Implementation
August 1999

VisualAge for Java wins
Software Development Productivity Award
July 1999

Application Development '99
July 1999

Winner
Best Java IDE &
Most Innovative Java Product
June 1999

Fireman's Fund & Allied Signal
1999 Innovator Awards
April 1999

(France)

Heavyweight Product
December 1998

Finalist

Best Java IDE for 1998
December 1998

(United Kingdom)
Best Development Tool
November 1998

(United Kingdom)
Star Product
November 1998

Super-Hot New Product
September 1998

Judges' Choice
September 1998

(United Kingdom)
July 1998

Outstanding Rating
May 1998

April 1998

Reviewers' Pick
April 1998

Best of Test Center 1997
January 1998

December 1997
November 1997

Partnership Award
IS and USERS Organizations
October 1997

September 1997

BackOffice Magazine
Best of Show Select
August 1997

Best of Show
for Java Tools
Web Innovations
June 1997

VisualAge for Java's Success - Applications in Production

- **"Reduces application maintenance by 70%"**
  - ► **Harvard University**
- **"Critical to our success"**
  - ► **Primerica Financial Services**
- **"V/A for Java a Secret Weapon-Remote Debugging 'a godsend'"**
  - ► **Schwab**
- **'No limitations on where we go"**
  - ► **Allied Signal**
- **"90% Productivity Improvement when coding U/I"**
  - ► **Fireman's Fund**

Customer Success Stories

http://www-4.ibm.com/software/ad/vajava/solutions.htm

e-business at Schwab

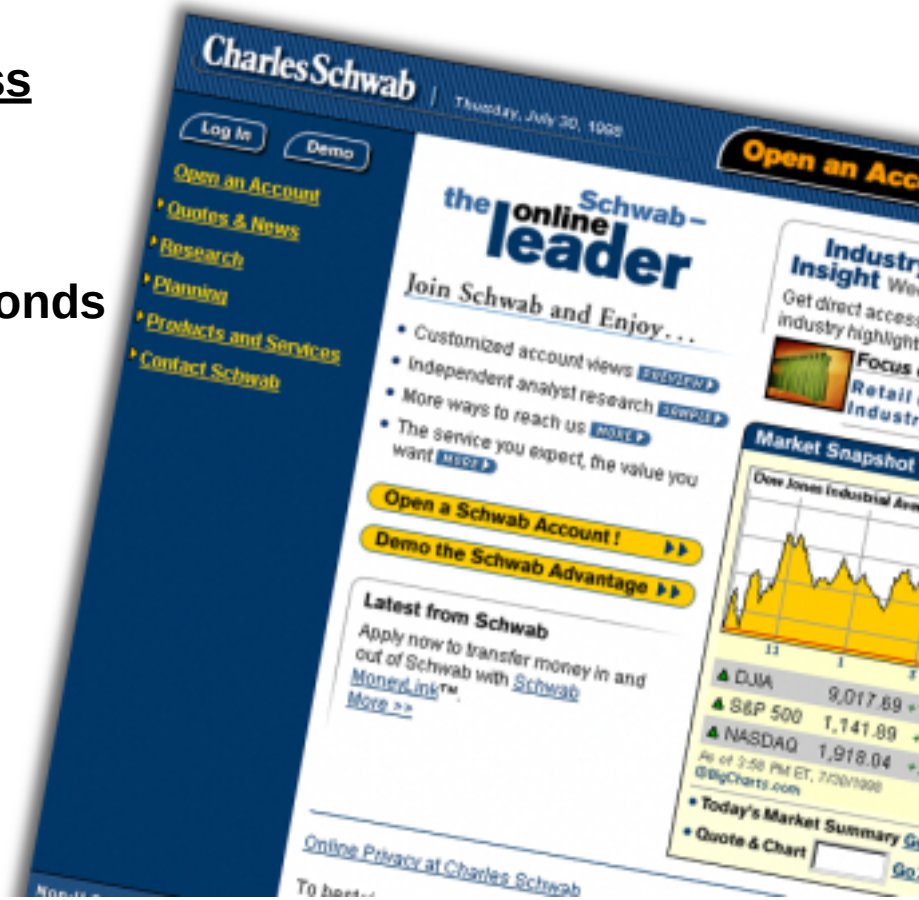
Challenge:

- Be the leader in online stock trading
- Compensate for unknown demand

e.Schwab

Business Value:

- Leverage - existing transactions
- Transform - Schwab to an e-business
- Build - e.Schwab in 90 days
- Run - the leading online trading site
  - Day One - Add capacity in 60 seconds
  - 90 days - 100,000 accounts
  - Today - 1,800,000 accounts
    - More than 50% of business transacted online



e-business enablers:

- Websphere EE, CICS, DB2, VisualAge for Java

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**

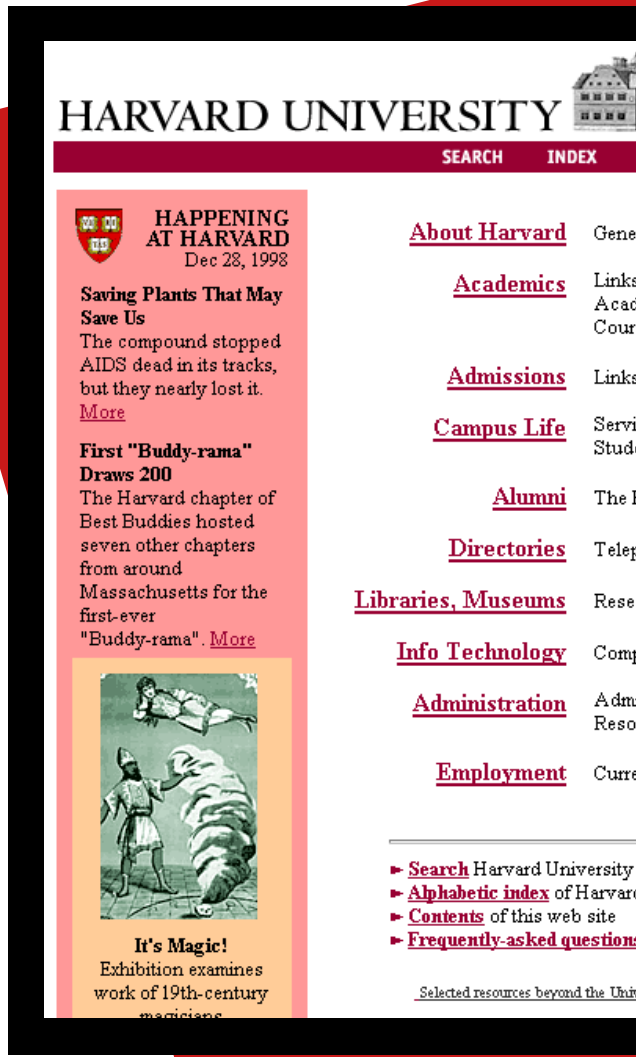
Business Value:

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

e-business Enablers:

- **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."



HomeDirect USA - Bekins Van Lines

Challenges

- Provide customized shipment-tracking information to their customers, including major e-commerce retailers and the end consumers
- Leverage their existing mainframe

Solution

- Web-based shipping and tracking system built with IBM WebSphere Application Server, IBM VisualAge for Java and IBM DB2

Business Value

- More than $10 million (US) in increased revenue
- Reduced operating expenses of $250,000 annually
- Improved customer service and satisfaction
- I/T development savings of approximately $125,000

Some Final Thoughts

- **Look for tooling which:**
  - **Is integrated between tools in portfolio**
    - **e.g. How easy is it to build an application from end-to-end? (HTML/JSP->Servlet->EJB->Legacy)**
  - **Is integrated with a runtime**
  - **Supports the key features of a runtime**
    - **e.g. Personalization**

- **Enterprise connectivity means more than database integration**
  - **e-business applications need to connect with with critical data, transactions and applications.**

Thank you!

- **VisualAge Developers Domain**
  - **www.ibm.com/vadd**
  - **Online community for over 300,000 VisualAge developers!**
- **VisualAge for Java Marketing Web Site**
  - **www.software.ibm.com/ad/vajava**
- **WebSphere Advisor Magazine**
  - **www.WebSphereAdvisor.com**
- **Redbooks**
  - **www.redbooks.ibm.com**