Java™ Industry Outlook

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Director, JavaSoft Corporate and ISV Relations
Objectives

- What is Java™ for?
- Where is it going?
- How it will become an industry
Java TimeLine

Year One
Java as Language
- Animated
- Web pages

Year Two
Java as Platform
- Create/Deploy
- Apps on the Web

Year Three +
Java the Industry
- Embedded functions
- “under the hood”
- Ubiquity

Hello World

Business Applications

Internet Services

Servers

Devices

Agents

Executable Content
Java Wakes up the Web

- The Java language released in Netscape 2.x
- Animation, stock tickers and steaming coffee cups bring new life to static web pages
- Software tool vendors launch first products
- Avalanche of interest - 40k downloads month
- EarthWeb’s Gamelan directory lists 2258 entries
- 25 books in print, 70 more in the works
- Java Days events draw thousands nationwide
Why Did Java Become So Popular?

• Java met the needs of developers, corporations and end-users
• Designed for the Web
• Platform independent
• Simple, compact and architecturally neutral
• Easy to program
• Buzz word compliant (Open, Object oriented, …)
What Were the Issues?

- “Java is slow”
- “How will I be sure of Java capability existing in my platform of choice?”
- “Sounds great but how do I use it?”
- “Where are the application development tools?”
- “Where does Sun fit in this?”
- “And what about Microsoft?”
Rapid Response from the Industry

Year One

- JavaSoft is founded by Sun Microsystems Inc.
- Java technology is licensed to major OS vendors (Microsoft, Apple, IBM, SunSoft, SCO,....)
- Netscape incorporates JDK 1.0
- Symantec, Borland, SunSoft,... announce tools for Java application development
- System Integrators and VARs setup Java engineering groups
# Major Market Segments Move to Adopt Java

<table>
<thead>
<tr>
<th>Consumer Goods</th>
<th>Content Publishing</th>
<th>HealthCare</th>
<th>Telecommunications</th>
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<tr>
<td>Pepsi</td>
<td>R. R. Donnelley</td>
<td>Kaiser</td>
<td>Bell South</td>
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<td>Sears</td>
<td>Time Warner Inc</td>
<td>Boston</td>
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<td>Walmart</td>
<td>National Geographic</td>
<td>Children’s Hospital</td>
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<td>Gap</td>
<td>Delphi</td>
<td>UCLA Med Center</td>
<td>MicroMuse</td>
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<td>Walgreens</td>
<td>Associated Press</td>
<td>Los Alamos Labs</td>
<td>Belcore</td>
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**Entertainment**
- Disney
- SEGA
- Viacom
- NBC
- BlockBuster

**Financial Services**
- CondeNast
- CJNet
- NandoTimes

**HealthCare**
- Pearson Financial Times
- Columbia/HCA

**Integrators & Consultants**
- Anderson Consulting
- EDS
- Poppe Tyson

**Online Service Providers**
- Premenos (EDI)
- Kodak (Picture Exchange)
- FujiXerox (Document Services)
- @Home
Summary of Year One

• Presence is established on the WWW
• Key partnerships are in place (licensing, OS, browsers...)
• JavaSoft is focused on making Java a successful platform
• Sun is taking a leadership position in making the Java language an industry-wide phenomena
Meanwhile…..

- Licensees push specifications to new levels
- Java extended API’s broaden platform capabilities
- Drag-and-drop tools for web designers and non-programmers come to market
- Enterprise-level client-server applications are being developed
- Net Computers and Internet Terminals pick up the Java language for dynamic extensibility
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- **Hello World**
- **Business Applications**
- **Internet Services**
- **Servers**
- **Executable Content**
- **Devices**
- **Agents**
How is the Environment Changing?

- Web Computing is taking off
- Intranet computing is increasingly popular as an answer to client server computing costs
- Internet computing is moving towards realization of electronic commerce
- Brand name ISVs are targeting the Java platform
- New Internet services are coming online
Web-based Computing Takes Over

**Internet**
- Get closer to the customer
  - Corporate image and advertising
  - Customer services and support
  - New distribution channel
  - Customer does all data entry
  - Customer feedback and demographics

**Intranet**
- Get closer to one’s business
  - Internal communications
  - Client-server apps for heterogeneous environments
  - Server-based software model that reduces desktop administration costs
  - Direct vendor/supplier communication

Year Two
Java Web-based Solutions
Change Basic Economics

- Supports Multiple Platforms
- Versions and Configurations
- Low cost client admin
- Rapid deployment
- Scaleability
- Security...

Web-based application server solution
Java Web-based Solutions
Change Basic Economics

Frank Galdes,
Product Manager
Kinetix
Subsidiary of
AutoDesk, Inc.
Hyperwire
Java Web-based Solutions
Change Basic Economics
Bob Schoettle,
VP of Marketing
Wayfarer Communications, Inc.
QuickServer
Java Web-based Solutions
Change Basic Economics

Steve Zocchi,
Director of Marketing
Spider Technologies
NetDynamics
Java Web-based Solutions
Change Basic Economics
Jack Bowers,
Development Project Manager
Dun & Bradstreet Software
SMARTStream Web Series-Requisitions
Internet Full Service Providers

- Stock Quotes
- Portfolio Mgmt
- Customer Account
- Payment
- Research
- Insurance Policies
- Investments
- Product
- Spreadsheet

Year Two

Devices:
- PDA
- ATM
- TV
- Smart Card
- Kiosk
- PCs
- Internet Full Service Providers
- Smart Phone

These devices connect to the Internet for various services.
Summary Year Two

- Java Platform is established
  - JavaApplet APIs, JavaMedia APIs, JavaEnterprise APIs, JavaCommerce APIs, JavaSecurity APIs
- Enterprise Java applications are deployed
- Internet Java-based services proliferate
- Network Computers are launched
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Executable Content
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- Devices
- Agents
Java: Year 3 and Beyond

What does it mean to become an industry?
Java Will Become an Industry Because:

- Java technology addresses the needs of network computing
- It has wide-spread acceptance in the industry
- It allows for extensions to the core functionality
- Sun has been a leader in Open systems computing
- Java technology represents a paradigm shift creating new opportunities for hardware, software and service companies
Key Factor: Distribution Models are Changing

- Applications become frameworks
- Functionality is loaded on demand
- Software is user-customizable
- Purchasing and distribution models must adapt to new paradigm
Key Factor: Relationship with Customers Are Changing

- Direct “over-the-net” channel
- Online assistance and services
- Instant customer feedback
- Direct marketing opportunity based on real user data
- Installed base becomes annuity for add-on’s and enhancements

Solutions, Inc

Internet

Year 3+
Other Examples

- Information Services: Personalized delivery mechanisms
- Telco: Rapid deployment of short-lived services
- Manufacturing: Mass customization
- Entertainment: Interactive multimedia
In This New World Order….

- Line between applications and services is blurred
- Web extends outward to cell phones, pagers, instruments, and other handheld devices
- Java-based agents move freely throughout the web
- Executable content is king
JavaOne Pavilion Participants

- Adobe
- Aimtech
- Asymmetric
- Bitstream
- Borland
- BulletProof
- CADIS
- CBT
- Cayenne
- Connect!
- Corel
- DEC
- DimensionX
- Dun & Bradstreet
- EarthWeb
- Electric Communities
- Macromedia
- Microsoft
- Metrowerks
- Mitsubishi
- Natural Intelligence
- Netscape
- NeXT
- Object Design
- OpenConnect
- OpenEnvironment
- Open Horizon
- Oracle
- Parc Place
- Penumbra
- Platinum
- Post Modern
- Rogue Wave
- Ratiomax
- Sun Microsystems
- Silicon Graphics
- Spider
- Starfish
- Sun River
- Symantec
- Tatung
- Thought
- Vissigenic
- Visix
- Wayfarer
- WebFlow
- Web Techniques
- Worlds
- Ziff-Davis
- XDB