



**INTERNATIONAL**  
Systems Group, Inc.

## **Web Enablement Strategies for Enterprise Applications – From 101 to Application Servers and Web Services**

### **Achieving bottom line benefits with e-Business after the demise of “dot-com” era**

The explosive growth of the Internet, combined with unrealistic expectations and failed attempts to capitalize on its potential, left the vendor and customer organizations scrambling to exploit the benefits of this technology for competitive advantage, reduce costs and improve programmer and end user productivity. While the majority of new solutions are conceived as “Web-based” implementations, there are substantial differences among these solutions, from the perspective of business objectives, technology choices as well as architectural approach.

There has been significant emphasis on internal Web sites (i.e. Intranets) that exist behind corporate firewalls, for the development of component-based applications. In addition, many corporations are struggling to implement a tighter integration with their trading partners, for example to improve supply chain management, provide integrated vendor to vendor purchasing applications, or to consolidate orders across a vendor community in order to achieve price improvement. These companies are looking beyond traditional B2B solutions and are forming Internet communities that link different IT organizations in order to automate business processes and the exchange of information. XML, SOAP, Web Services and related technologies have become the cornerstone and focus of attention as evolving and potential standard for cross-enterprise integration. Finally, within the boundaries of an organization, A2A Enterprise Application Integration (EAI) remains one of the top concerns of most CIOs, but the technology choices for integration have evolved over time and now also include Web Services.

### **The significant challenges posed to your business**

However, all the benefits of ubiquitous Web-based computing pose as many challenges as they do provide rewards to IT Managers who need to develop and deploy production quality large-scale Web-based applications. While the Web offers tremendous advantages, it also magnifies challenges such as scalability, high reliability and continuous availability for Web-based applications. In addition, the Internet and the Web have inherent limitations, including the synchronous nature of HTTP, the stateless paradigm of the Web, and its somewhat limited security model.

### **Get the competitive advantage at a special seminar**

This special seminar conducted by ISG will provide you with an in-depth review of the requirements for building and deploying enterprise scale Web applications. You will learn about technologies that are available today and you will gain insight into emerging solutions those different vendors and standards

groups are promoting. However, it's not just about understanding the technology, it's about knowing how to really utilize it. At this seminar, you'll learn how to exploit current and emerging Web technologies and products to give your company a competitive advantage. Emphasis will be placed on how to best implement transactional e-Business applications, how to chart a roadmap for B2B initiatives, and how to leverage core assets through the integration with exiting applications.

## Benefits of Attending

- Learn how Web applications can transform your business for competitive advantage.
- Differentiate between the major approaches to building enterprise Web applications.
- Understand how Application Servers can overcome the scalability, reliability and high-availability problems and limitations posed by traditional two-tier Web applications.
- Evaluate the state of Java for the Enterprise (J2EE) as a server-side development, hosting, and deployment environment.
- Determine which Middleware Platform (J2EE vs. .NET) is best for your environment.
- Discover the role of standards such as XML and Web Services and see how Web technologies tie in with other types of Middleware.
- Learn how Web-based applications can be integrated with your back-end legacy and packaged applications.

## Who Should Attend

- IT professionals who would like to expand application development to the Web.
- IT Managers and IT Strategists with a technical background who need to see how the Internet, Intranet, and Extranet fits into the enterprise application development and integration strategy
- e-Business Architects and Developers who want a detailed look at the architectures and technologies that enable the development of Web-based applications.

## Prerequisite(s)

This class does not require attendees to be knowledgeable in any specific technology; however, a general understanding of distributed applications will be beneficial.

## Seminar Outline

### 1. Introduction: The Internet, Intranets, Extranets, and the Web

- A brief history
- Internet vs. Intranet vs. Extranet
- What is the World Wide Web?
- e-Business Evolution: From Web-sites to e-Business integration
- HTTP: The first Web protocol
- HTML: Publishing on the Web
- XML: Bringing order to chaos
- SOAP and beyond – building the Web protocol stack

### 2. Web APIs

- Client APIs

- CGI
- NSAPI & ISAPI
- Java Servlet API
- Java Server Pages (JSP)
- Active Server Pages (ASP)

### **3. Overview of Major Middleware Categories**

- Introduction to Middleware
- Message Oriented Middleware (MOM)
- EAI tools
- Object Middleware

### **4. Java - a Programming Language**

- Java Overview
- Key Java Features
  - Garbage Collection, Threads, Security, Networking, Serialization
- Java GUI: AWT vs. JFC
- JavaBeans

### **5. Java - a Platform for Distributed Applications**

- Java Database Connectivity (JDBC)
- Java Remote Method Invocation (RMI)
- Java Naming and Directory Interface (JNDI)
- Java Messaging Service (JMS)
- Java Management Extensions (JMX)
- Java Transaction Service (JTS)

### **6. Java for the Enterprise**

- Enterprise JavaBeans (EJB)
  - Architecture overview
  - Container provided services
  - Session beans vs. entity beans
  - State management
  - Security
  - Declarative transaction management
  - Message driven beans
  - Java 2 Enterprise Edition (J2EE)

### **7. Case Study - Web Application based on J2EE**

- Requirements and tools selection
- Development process and design considerations
- Integration with 3rd party products
- Lessons learned

### **8. ActiveX, COM+ and .NET**

- Introduction to COM/DCOM
- COM+ overview
- ActiveX overview
  - Active Client
  - Active Server Pages (ASP)
- The .NET framework
  - Common language runtime
  - Supported Programming Languages
  - ASP.NET

ADO.NET  
Remote Objects

- Interoperability between COM and .NET

## **9. Comparing Platform Support – J2EE vs. COM+/.NET**

- Basic concepts
- Core platform capabilities
- Comparing platform tiers
- Developing web services

## **10. Run-time Service Requirements for Web Applications**

- What to look for in Application Server products
  - Location independence
  - Load balancing
  - High availability and automatic failover
  - Security
  - Database connection management and connection pooling
  - State and session management
  - Transactions
  - Persistence
  - Database result caching
  - Management and monitoring

## **11. Commercial Platforms: Comparing Application Server Solutions**

- Web Application Server defined
- Application Server functionality
- Application Server Provisioning options
  - Microsoft: IIS & ASP & COM+ & .NET
  - J2EE Application Servers
- Product examples
  - BEA WebLogic Server
  - IBM WebSphere
  - Oracle
  - JBoss
- Web application development tools
  - Java IDE (Integrated Development Environment) for J2EE
  - The next frontier: 4GLs for J2EE?

## **12. XML: More Than Document Technology**

- Introduction to XML and related technologies
  - XML, DTD, Schemas, Name Spaces
  - XSLT, XPath, XPointer, XLink
  - Document Object Model (DOM)
  - Simple API for XML (SAX)
- Case Study: XML-enabled E2AI architecture

## **13. The Rocky Road to B2B**

- What drives the B2B market
- Requirements for B2B solutions
- Simple Object Access Protocol (SOAP)
- Web Services – a new paradigm for B2B
  - Web Services Definition Language (WSDL)
  - Web services security
  - Web services transactions
- BizTalk
- RosettaNet
- ebXML

## **14. Web Enterprise Integration Strategies**

- Data Level Integration
- Object Level Integration
- Portal Level Integration
- Interface Level Integration
- Point-to-point integration
- Message Brokers
- Leveraging legacy applications
  - COM Transaction Integrator (COMTI)
  - J2EE Connector Architecture
  - Integration with CORBA
- Combining Application Servers and Message Brokers
- Web Services and Application Integration
- Combining XML and Middleware
  - XML and Messaging
  - XML and EAI tools

## **15. Summary and Conclusion**

- A comprehensive approach to e-Business Integration (eBI)
- The core IT challenges
- Future technology convergence?
  - B2C meets B2B – The future outlook of Application Servers
  - A2A meets B2B – The future outlook of Message Brokers
- Best-of-breed platforms
- First things first: Architecture and Methodology