Web Applications and Web Services: Supporting Technologies (Panel Introduction)

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Abstract—Different technologies are emerging for developing multi-tier enterprise Web-based applications. Among them are Java 2 Enterprise Edition (J2EE) and the .NET Framework. Both support XML-based Web Services and offer related features. This panel explores the future of these technologies and identifies the issues and strategies underlying their use and evolution.

ONE of the most rapid areas of change for software technology today is in frameworks to support Web applications. As industry increases focus on commercial utilization of the Web, framework providers vie for developer buy-in through promise of improved support. Today a vast majority of Web-centric applications are hosted on Java solutions. But, technology advances in the recent release of Visual Studio .NET and its underlying framework promise to significantly impact market balance.

Suppose you are in the situation today of selecting the platform for a new project aimed at providing Web presence to augment your company’s retail offerings. The server-side options available to you are broad and represent significantly different approaches. The original approach of scripting through common gateway interface has largely been replaced by more efficient technologies represented by Java Server Pages and Servlets. Recent development platforms, however, present options where a good decision may depend upon characteristics of your application, as well as aspects of the technology framework. What application characteristics must you consider and how can you compare alternative frameworks?

Web Services is an emerging technology that utilizes HTTP and XML to provide network-wide access to an Object’s methods. The vision includes exposing business related services to potential consumers thus facilitating business-to-business cooperation. The model equally supports business to consumer communications, and is amenable to multiple cost models, including pay-per-use, subscription and freely available services. Interoperability among Web Service platforms promises platform, language and infrastructure independence. Web Services are based on the XML SOAP standard, Simple Object Access Protocol. As realized in the .NET Framework, Web Service Proxies, which allow a client to use services, are automatically built upon discovery of a Web Service. Evolving XML standards such as UDDI provide network-wide registration systems for advertising and discovering Web Services.

The .NET Framework supports alternative approaches to realizing Web applications, including XML centric database access and .NET Remoting that provides an object rich, platform dependent solution for network available objects. The latest version of J2EE provides support for Java Web Services to augment the server-side session and database entity approach evolving from Enterprise Java Beans. This panel explores the issues underlying these various key technologies for multi-tier enterprise Web applications. For example:

- How is security of a Web-application best realized? What security issues exist for infrastructure that underlies multi-tier applications? What are the security issues that arise in systems that combine related technologies?
- What is the vision of Web Services? What applications are best suited to Web Services? What performance issues underly the use of XML SOAP and related Web Service standards, such as WSDL, UDDI or ebXML?
- Interoperability for Web Service applications. For example, what issues arise when trying to integrate an ASP.NET Web Application (.ASPX) to consume Web Services that are provided by J2EE server-side Web Services? Do existing XML standards practically provide interoperability?
- Are there existing benchmarks that can help technology developers select among provider offerings? What techniques can be used to

This panel features distinguished researchers and technologists from industry and academia. Included are representatives of SUN and Microsoft. After they present positions on the issues, we will have an open dialogue with the audience.