

MS-395 E-Business Technologies

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Agenda for 1st Class Meeting

- Review Syllabus Here!
 - Questions?
- Define e-business
 - User experiences and expectations
 - Technology limitations
- Talk about technologies

Definition of E-Business

- Electronic Business
 - Banking
 - Electronic funds transfers
 - Transactions
 - Business to Consumer
 - The World-Wide Web (amazon.com)
 - Business to Business
 - ERP, MRP, CRM, Web Services
 - Consumer to Consumer
 - E-Bay (central server), Semantic Web (peer-to-peer)

Technologies for E-Business

- The Internet
 - ARPAnet was 1st interconnection network
- The Web
 - Popularized the Client-Server model (to use it)
- Languages and Systems
 - Many in number (too many?!)
 - Fall into "camps" (-JJB)
 - Standards provide some degree of compatibility
 - W3C, IETF, ICANN, ANSI

The Internet

- Started as ARPAnet in 1960's
- Leonard Kleinrock, 1969
 - UCLA Professor
 - Studies packet-switching networks for ARPA
 - Creates the 1st interconnection network
 - 3 nodes (UCLA, UCSB, SRI)
 - Considered the father of the internet
 - Mario Gula, his graduate student, is a close uncle!

The World-Wide Web

- Definition:
 - The graphical user interface that sits atop the internet
- Tim Berners-Lee, 1990
 - Pioneers HTTP while at CERN (Switzerland)
 - Envisions a semantic network on the web
 - Today heads the World-Wide Web Consortium (W3C)
 - www.w3schools.com
 - Great learning content at an introductory level
 - Use it to augment your textbook material

WWW Technology

- Standard Technologies across languages
 - HTTP, HTML, CSS, JavaScript (browsers vary), AJAX (Asynchronous JavaScript and XML)
- Differing languages among groups of developers (I call them developer "camps")
 - LAMP (Open Source)
 - JAVA (quasi Open Source)
 - .NET (Open Standards; Proprietary Impl.)
 - Newcomers (Open Source)

The Technology "Camps"

- Open Source
 - Apache – most popular web server
 - MySQL – most popular database [server]
 - Postgres – 1st and most reliable DB in open src.
 - Perl – 1st server-side scripting language
 - Python – In many ways, an improved Perl
 - PHP – most popular server-side scripting lang.
- LAMP (Linux/Apache/MySQL/P/P/P)

The Technology "Camps" (cont.)

- Java
 - J2SE (JSE-Standard Edition)
 - J2EE (JEE-Enterprise Edition)
 - J2ME (JME-Micro Edition)
 - Not quite open source (not yet, anyway)
 - Most popular language in the enterprise
 - Primarily on the server-side of an n-tier arch.
 - Others are gaining ground!
 - Still has a huge development community

The Technology "Camps" (cont.)

- Microsoft .NET
 - Developed as Microsoft's answer to Java
 - Defined to "open standards" but not open source
 - Built on a Virtual Machine Architecture
 - Common Language Runtime (CLR)
 - Support 30+ development languages
 - C#, C++, C, ASP.NET, Visual Basic.NET, etc.
 - Mono project is an open source .NET on Linux!
 - Miguel Delcarza leads effort, and still a work in progress

The Technology "Camps" (cont.)

- Ruby on Rails
 - Ruby is latest hot language on the server-side
 - Interpreted (not compiled); cryptic but expressive
 - Rails is the server-side framework for services
 - Database services, Web Services (XML), etc.
 - Can do many things that J2EE does in 1/10th the number of lines of code (and maybe 1/10th the time)
 - When combined with AJAX on the client, very responsive webapps (w/o full page-loads/reloads)
 - Web 2.0 framework (maybe the most popular)

Can Mix and Match

- Client-side (the choice is pretty clear)
 - JavaScript is clear winner (especially w/AJAX)
- Server-side (the choices are more complicated)
 - Apache for HTML/CSS, Perl, Python, PHP
 - Tomcat integrates with Apache to add Java (JSP)
 - .NET languages running on IIS (includes PHP, ...)
 - Webrick to run standalone Ruby on Rails (RoR)
 - RoR also integrates with Apache

So Which Path Do We Take?

- Client-side
 - JavaScript first; AJAX later
- Server-side
 - Definitely Apache, but which language?
 - PHP first
 - And which database?
 - MySQL first
 - Java demos to be done by JJB
 - You must choose technologies for your project!!!

Where Do We Go From Here?

- JavaScript
 - Deitel Chapters 7 through 12
 - What about browsers?
 - Develop with FireFox; test with MS Internet Explorer
- Apache
 - Provides CGI; used by Perl and Ruby
- PHP
 - Must be integrated with Apache
 - PHP-4 is fine but PHP-5 is required for SimpleXML