OpenAjax Alliance: Driving Ajax Standards and Interoperability

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Presented to NCOIC on behalf of the OpenAjax Alliance

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Agenda

- **The Web 2.0 and SOA visions**

- **The role of Ajax**

- **The role of OpenAjax Alliance**
  - Accomplishments so far
  - Current activities
  - Next steps

The Web 2.0 Vision

1. Web as a Platform

A system without an owner, tied together by a set of protocols, open standards and agreements for cooperation

- *Google vs. Windows*

2. Harnessing Collective Intelligence

Network effects from user contributions are the key to market dominance in the Web 2.0 era

- *Open Source, Wikipedia, Flickr, YouTube, Blogging*

3. Data is the Next Intel Inside

The race is on to own certain classes of core data: location, identity, calendaring … data as a system service.

- *Google Search, Amazon, Google Maps*

The Web 2.0 Vision

4. End of the Software Release Cycle

Shift from software as product to software as service

- *Google vs. Windows, Google Mail vs MSOffice*

5. Lightweight Programming Models

Support lightweight programming models that allow for loosely coupled systems

- *Mashups*

6. Software Above the Level of a Single Device

More devices leveraging the Web as a platform

- *iTunes/iPod*

The Web 2.0 Vision

7. Rich User Experiences – using Ajax

- Standards-based presentation using XHTML and CSS

- Dynamic display and interaction using the Document Object Model

- Data interchange and manipulation using XML or JSON

- Asynchronous data retrieval using XMLHttpRequest

- JavaScript binding everything together

IBM's SOA Vision

- ## SOA defined
  - Exposing back-end services via Web APIs

- ## Why SOA?
  - Enables clean implementation of n-tier applications
  - Enables re-use of services and assembly into applications
  - Requires minimal intervention to expose legacy software

- ## Importance of standards
  - Back-end: Minimally, WS-I
  - Front-end: HTML/Ajax

Role of Ajax

- **Industry standard client technology for Web 2.0**

- **Industry standard client technology for SOA**

OpenAjax alliance

What is Ajax?

- **In a nutshell - the continued evolution of HTML**

- **Ajax definition:**
  - A set of programming techniques that deliver…
  - Desktop-like user interfaces…
  - Within the browser…
  - Using open standards formats
    - *Natively implemented in the browser*
    - *Without plugins (i.e., not Flash, WPF, or Java)*

- **Key technology piece is "AJAX" (XMLHttpRequest)**

- **But also includes many other techniques**
  - Widget libraries
  - Animation effects
  - Layout managers
  - Data binding, web services, local storage, server push, …

Emergence of Ajax toolkits

- **In beginning, Google (and others) showed the way**
  - Google Suggest, GMail, Google Maps

- **Initial industry skepticism**
  - OK, fine for Google, but too difficult for everyone else

- **But almost immediately, Ajax toolkits emerged**
  - Easy-to-use JavaScript libraries that hide browser dependencies
  - Sometimes with:
    - *Server framework integration (e.g., J2EE/JSF, .NET/ASP)*
    - *IDE integration (~10 Eclipse-based Ajax IDEs, MS Atlas/VS, Dreamweaver)*
    - *Declarative markup language (e.g., Laszlo/LZX, Nexaweb/XAP)*

- **Today: ~200 Ajax toolkits**
  - Often open source
  - Each with their own unique approach and advantages

Ajax Toolkit Diversity

- **Client-side vs Server-side**

- **Simple-DOM vs Dual-DOM**
  - Dual-DOM breakdown
    - *Client-Side Dual-Dom vs Server-Side Dual-DOM*

- **Declarative vs Procedural**
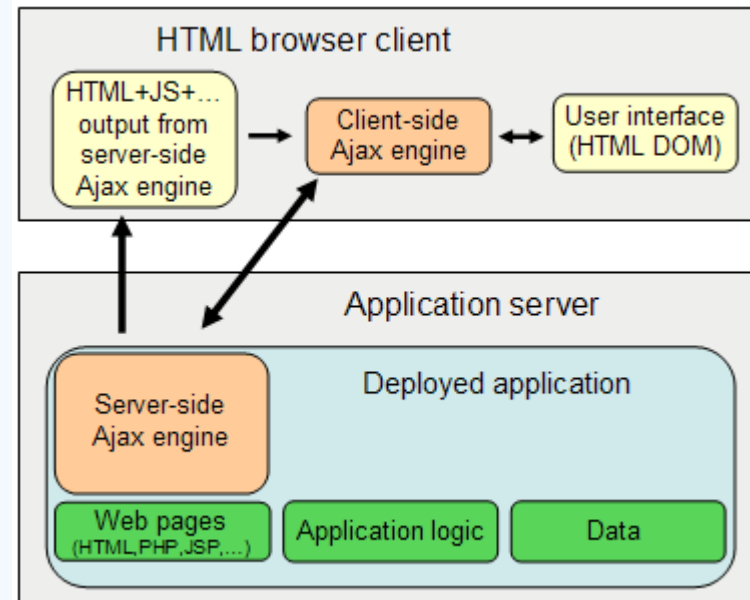 - Ajax markup language vs JavaScript APIs (or both)

Client-side vs Server-side Ajax

Client-side Ajax model
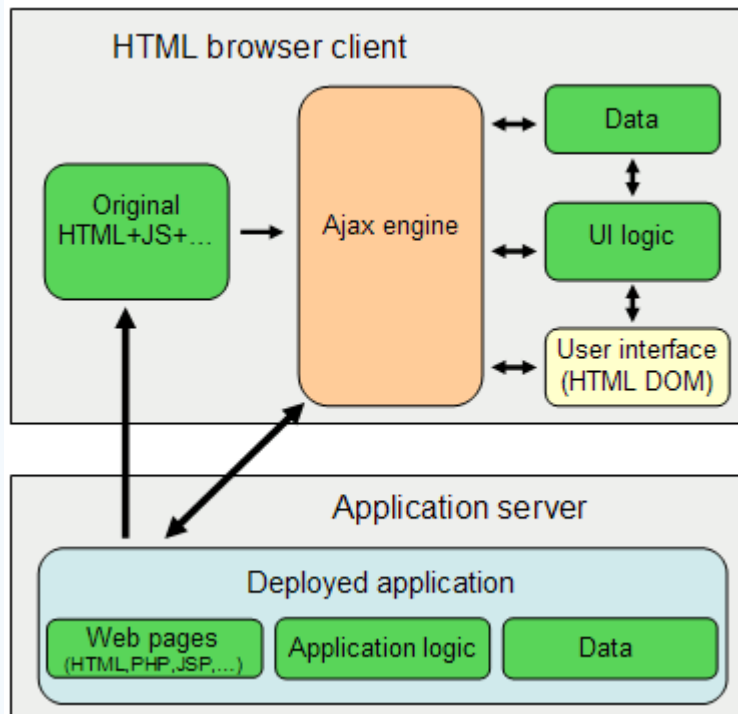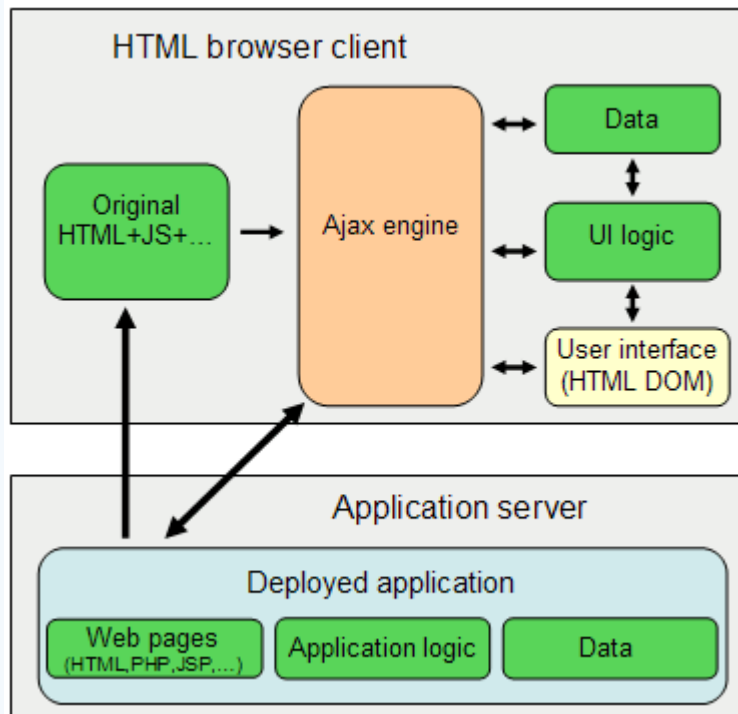

- Fits well with SOA
- Server-independent

Server-side Ajax model

- Integration with server-side frameworks
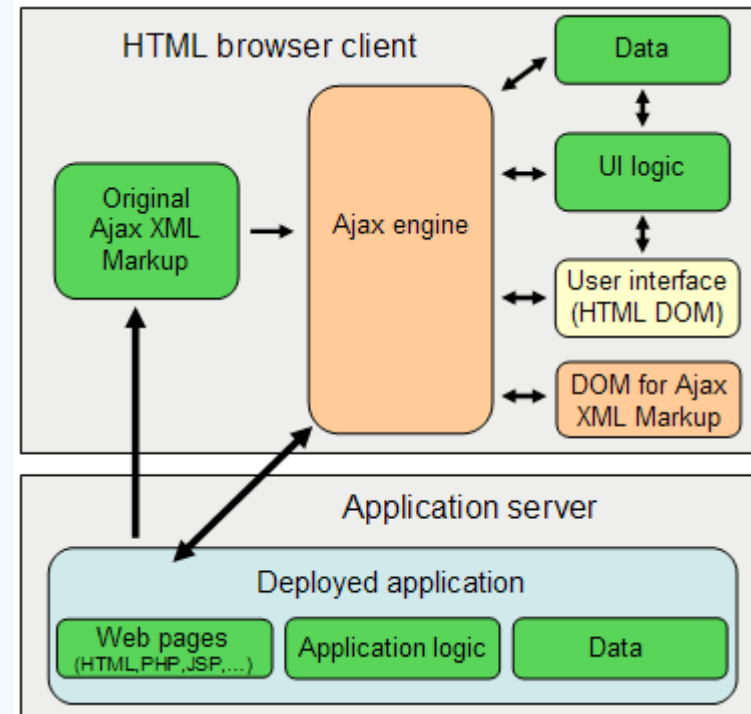- Client-logic generated automatically

Single-DOM vs Dual-DOM

Client-side Single-DOM

Client-side Dual-DOM

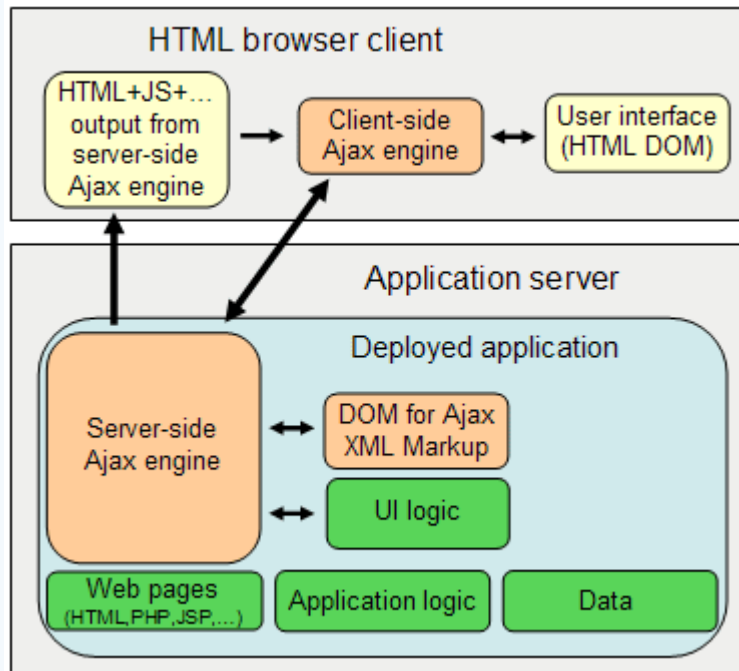- Perfect for adding bits of Ajax to DHTML
- Usually requirements smaller downloads

- Greater flexibility for toolkit providers
- Sometimes overcome browser limitations

Server-Side Dual-DOM

Server-Side Dual-DOM

- Enables tight integration with server-side development technologies, such as JSF

Ajax State of the World

- **Huge support within the industry**
  - On technology roadmap of most enterprises
  - Hundreds of commercial Ajax products
  - Dozens of Ajax open source projects

- **Wide range of choices**
  - Free vs. commercial
  - Server-side vs. client-side
  - Java vs .NET
  - Programming-oriented vs markup-oriented
  - Rich feature set vs. simple

So why do we need OpenAjax Alliance?

- **IT managers and Web developers want interoperability**
  - Mashups without worries
  - Vendor choice
  - Safety and certainty
  - Lower training costs

- **IT managers and Web developers need education**
  - It's all complex and confusing
  - A tyranny of choice

- **Industry needs a place to work together towards shared objectives**
  - Technical standards
  - Marketing/educational materials

Role of OpenAjax Alliance

- **Strategic**
  - Accelerate Ajax adoption and success
  - Boost innovation and Web 2.0
  - Perpetuate the open nature of the Web

- **Technical**
  - Drive Ajax interoperability standards
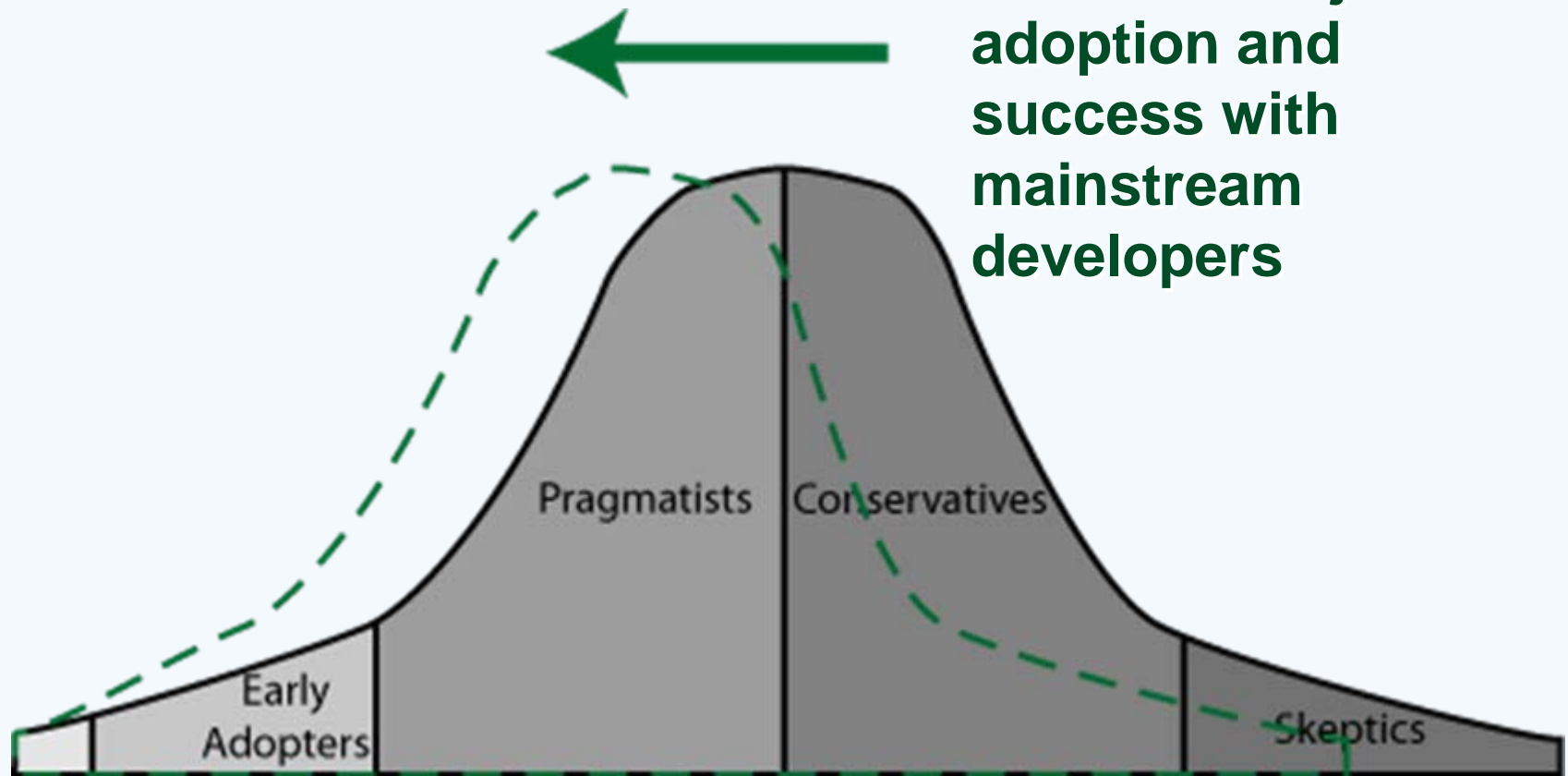 - Deliver open source to accelerate adoption

- **Marketing**
  - Provide central point for information
  - Promote OpenAjax conformance as industry requirement

OpenAjax Mission

Accelerate Ajax adoption and success with mainstream developers

Pragmatists Conservatives

Early Adopters

Skeptics

Our Vision

- **Define and promote "OpenAjax Conformance"**
  - Defined by our specs
  - Delivered by our open source
  - OpenAjax Hub is the first step
  - Other features will be added over time
    - *OpenAjax Registry*
    - *OpenAjax Best Practices*
    - *IDE Integration*
    - *Mobile Ajax*
    - *Etc.*

- **Make conformance an industry requirement**
  - Promote OpenAjax Conformance with all stakeholders

Accomplishments Since May

- **Organizational**
- **Marketing/educational**
- **Technical**

Organizational Accomplishments

- **Process**
  - Members Agreement
    - *Lightweight formal governance model*
    - *Rigorous approach to ensure royalty-free IPR*
  - Election of first Steering Committee

- **Web site - (http://www.openajax.org)**

- **Wiki - (http://www.openajax.org/member/wiki)**

- **Open source project - (http://sourceforge.net/projects/openajaxallianc)**

- **Blog - (http://www.openajax.org/blog)**

- **Membership growth (70+ members)**
  - Microsoft and Google joined on March 20

White Papers

http://www.openajax.org/whitepapers.html

Developed collaboratively on the Alliance's internal wiki
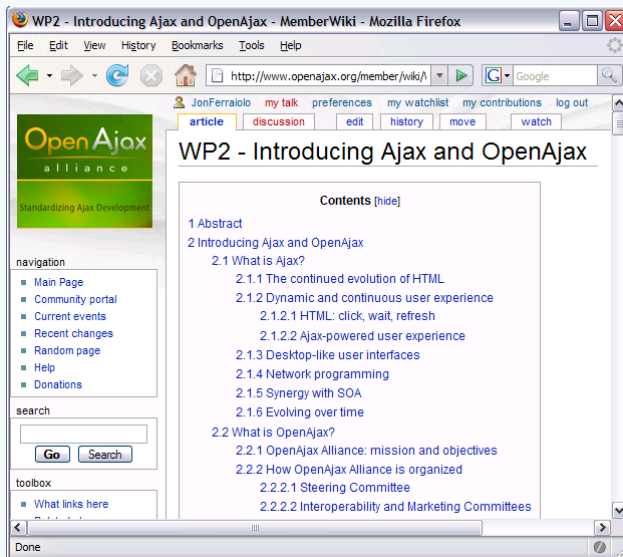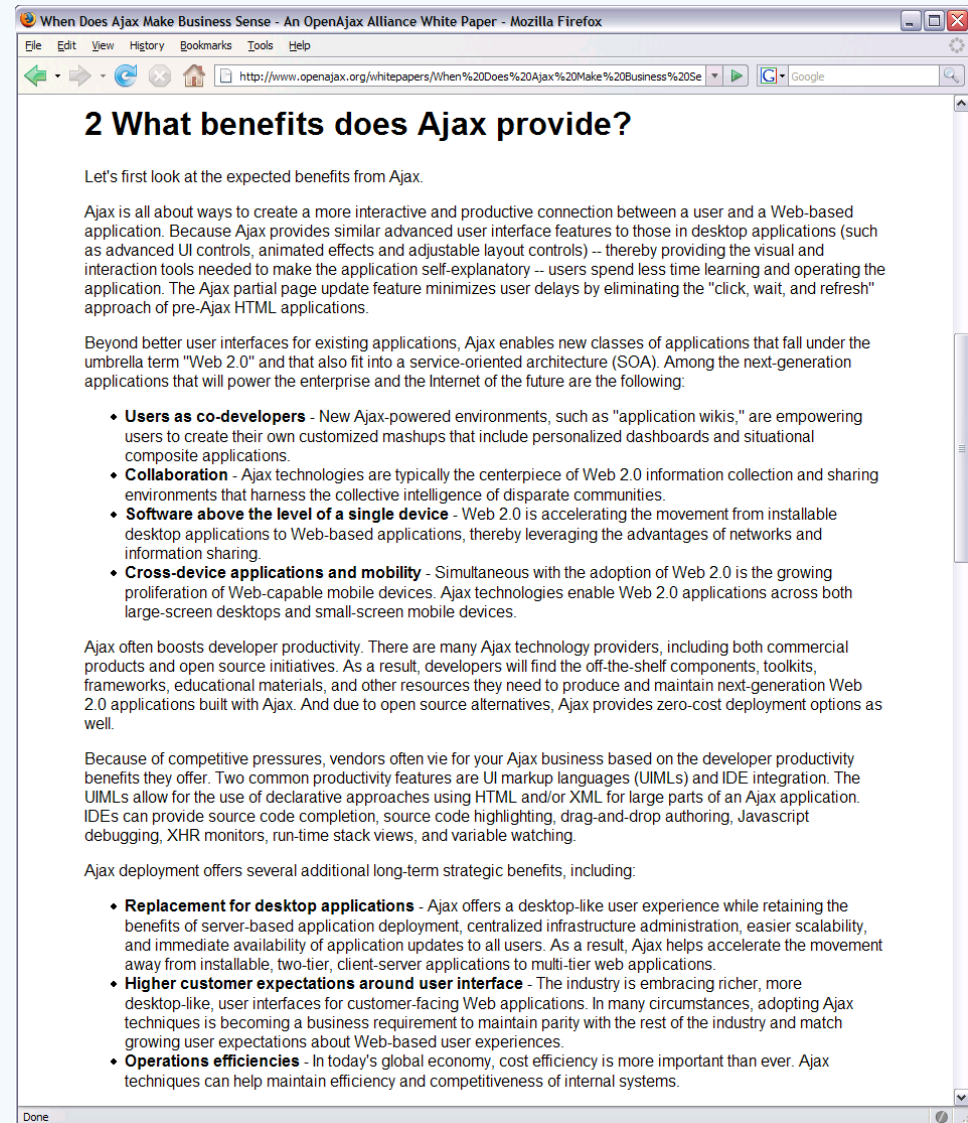
White papers – now there are four

1. **Introducing Ajax and OpenAjax**

2. **When Does Ajax Make Business Sense**

3. **Next-Generation Applications Using Ajax and OpenAjax**

4. **Successful Deployment of Ajax and OpenAjax**

Available at:

- http://www.openajax.org/White%20Papers.html

OpenAjax Hub 1.0

- **Features**
  - Library manager - `OpenAjax.registerLibrary(…)`
  - Publish/subscribe event hub
  - Load/unload event notification leveraging event hub
  - Very small footprint – compressed size = 1.5K / 1K

- **Reference implementation at SourceForge**
  - http://openajaxallianc.sourceforge.net

- **Status**
  - Spec and reference implementation finished (initial version)
  - Ajax toolkits have begun to support it
    - *InteropFest – see next slide*

OpenAjax's First InteropFest

- **Verifies that an Ajax library has successfully integrated with the OpenAjax Hub**

- **Out first attempt to demonstrate industry adoption of OpenAjax technologies**

- **12 toolkits took the time to participate, despite the pre-release status of the Hub**
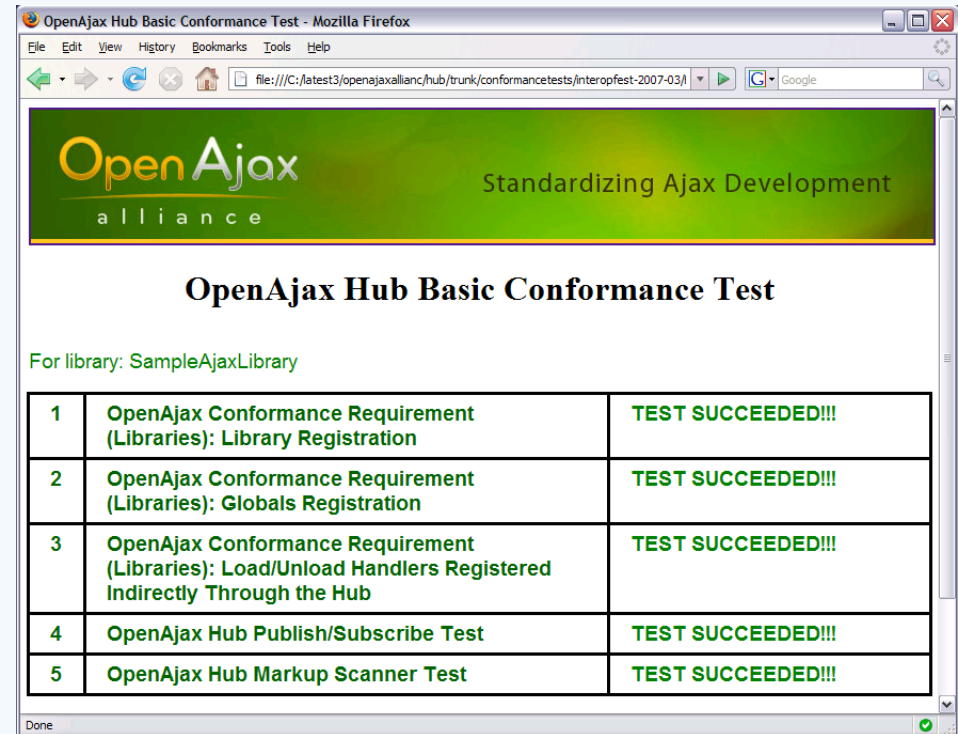
http://www.openajax.org/member/wiki/InteropFest_2007_March

OpenAjax Registry

- **Still in early discussion**

- **Ajax toolkit and JavaScript global object registration authority**
  - Primary goal: help prevent JavaScript object collision within complex Ajax applications
  - Registry managed by OpenAjax's Interoperability WG

- **Current thinking: to register, probably will just need to submit a snippet of JSON, such as:**
  - {"prefix": "OpenAjax",
    "namespaceURI": "http://openajax.org",
    "globals": ["OpenAjax","OpenAjaxConfig"] }

OpenAjax Best Practices

- **Still in early discussion**

- **Current thinking: develop a set of specifications that define various categories of OpenAjax Best Practices:**
  - Library
  - Application
  - IDE
  - Server Framework
  - Browser

- **Current thinking: two categories of "best practices"**
  - Conformance Requirements (small number of these)
  - Suggested Best Practices

IDE Integration

- ## IDE Integration Task Force
    - Address the NxM problem
        - *~200 Ajax toolkits, ~10 Ajax IDEs*

- ## Likely outcome:
    - OpenAjax specification on standard way to encapsulate an Ajax widget for use with IDEs

- **http://www.openajax.org/member/wiki/IDE_TF**

Communications Hub

- **Server push is highly desirable, particularly in conjunction with mashups and portals**
  - But browsers only allow 2 connections per Web page

- **Possible outcomes**
  - New client-side feature within OpenAjax Hub 1.1
    - *Mediate client-server communications requests (XHR, Cometd, etc.)*
    - *Support server push*
  - Client-server messaging protocol
  - Server-side communications hub
    - *Allows consolidated management of communication requests*

- **http://www.openajax.org/member/wiki/Communications_Hub_TF**

Ajax Security

- **Security Task Force will recommend what OpenAjax should do in the area of Ajax security**
  - Avoid overlap with W3C and other organizations also working on Ajax security issues
  - OpenAjax members will participate in an Ajax-focused session at 2007 IEEE Symposium on Security and Privacy
  - OpenAjax most likely will play an educational role, may also pursue technical initiatives

- **http://www.openajax.org/member/wiki/Security_TF**

Mobile Ajax

- **Important new frontier for Ajax**
  - Opera-enabled phones
  - WebKit-enabled phones (iPhone, Nokia series 60)
  - Latest Teleca mobile browser claims Ajax support
  - Expect many more announcements this year

- **Mobile Task Force will begin work soon**

- **(Likely) Mobile Ajax Workshop this spring**
  - Co-sponsored by W3C/MWI and OpenAjax Alliance
  - Key questions:
    - *What should W3C do?*
    - *What should OpenAjax do?*

Conclusions

- **Web 2.0 and SOA are happening now**

- **Ajax is:**
  - The industry standard platform for Web 2.0 and SOA
  - The continued evolution of HTML

- **OpenAjax Alliance**
  - Driving Ajax standards and interoperability
  - Educating the community about how to be successful with Ajax
  - Industry trust brand "OpenAjax Conformance"

How to join

- **Two simple steps**
  1. Sign Members Agreement
  2. Send an email listing names/emails of participants

- **No fees**

- **http://www.openajax.org/join.html**

For more information on OpenAjax Alliance

- **Web site**
  - http://www.openajax.org

- **Wiki**
  - http://www.openajax.org/member/wiki

- **Blog**
  - http://www.openajax.org/blog

- **Open source project**
  - http://sourceforge.net/projects/openajaxallianc

- **Mail list**
  - public@openajax.org

- **Contact me**
  - Jon Ferraiolo <jferrai@us.ibm.com>