An Introduction to AJAX

Ben Galbraith and Dion Almaer

Founders
Ajaxian.com

TS-4489

The Goal of Our Talk
The Slide They Made Us Put In

Gain an understanding on what AJAX is, how it works, and how you can apply it to your own applications

java.sun.com/javaone/sf

Does anyone here not know what AJAX is?

# AJAX: A New Approach to Web Applications
by Jesse James Garrett, February 18, 2005

"Google Suggest and Google Maps are two examples of a new approach to web applications that we at Adaptive Path have been calling AJAX. The name is shorthand for Asynchronous JavaScript™ (technology) + XML, and it represents a fundamental shift in what's possible on the Web."

AJAX: A New Approach to Web Applications
by Jesse James Garrett, February 18, 2005
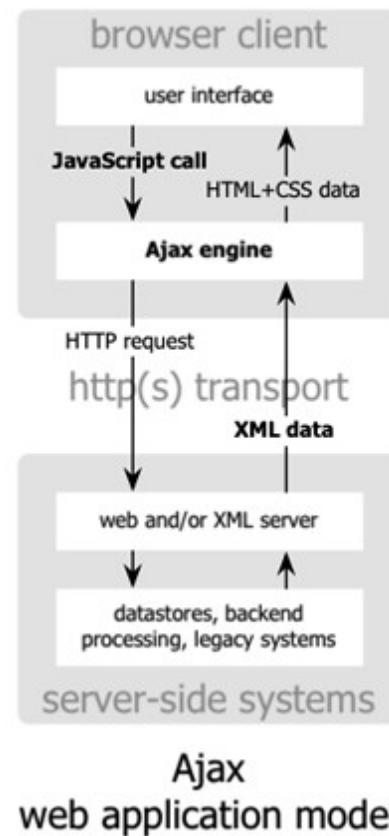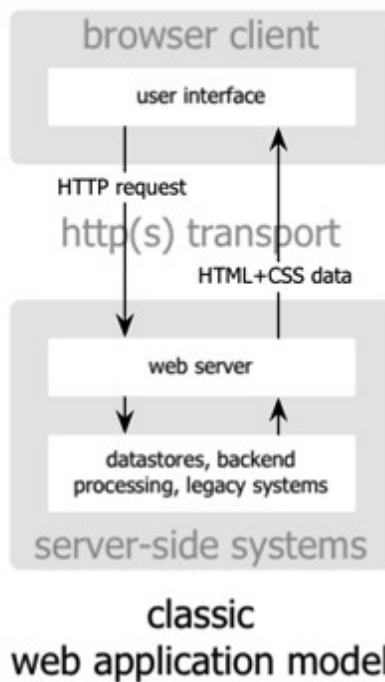
Would you like to see how it works?

DEMO

A Simple AJAX Application

AJAX == DHTML

- Key AJAX ingredient:
  - XMLHttpRequest (a.k.a. XMLHTTP)
  - Introduced by MS in 1997
  - Copied by Mozilla 1.0 in 2002
- innerHTML helps a great deal
  - DOM API snobs notwithstanding

java.sun.com/javaone/sf

XMLHttpRequest Methods

Method Name	Description
open("*method*", "*URL*"[, *asyncFlag*[, "*userName*"[, "*password*"]]])	Setup the request (note async)
send(content)	Send the request (content = post data)
abort()	Stop the request
getAllResponseHeaders()	Return a hash of the headers
getResponseHeader("*header*")	Return the header value
setRequestHeader("label", "value")	Set a header

java.sun.com/javaone/sf

XMLHttpRequest Properties

Property Name	Description
onreadystatechange	Setup the callback event handler
readyState	Object status integer: 0 = uninitialized 1 = loading 2 = loaded 3 = interactive 4 = complete
responseText	Text value of response
responseXML	XML DOM of response
status	Status code (numeric)
statusText	Status text

Three Main Ajaxian Architectures

Return Data
(JSON / XML)

Return HTML
(responseText +
innerHTML)

Return JavaScript
(eval)

DEMO

AJAXian Architectures

The Ajaxian Innovators

The Ajaxian Innovators

java.sun.com/javaone/sf

The Ajaxian Innovators

The Ajaxian Innovators

java.sun.com/javaone/sf

AJAX is the victory of the *pragmatists* over the *purists**

* they want a rematch

AJAX is about more than sending data back and forth

java.sun.com/javaone/sf

AJAX has become a catch-all buzzword for highly interactive websites

(get over it)

java.sun.com/javaone/sf

And the biggest surprise?

JavaScript technology doesn't suck, after all

(but we can still laugh at people who call it 'Java™' technology)
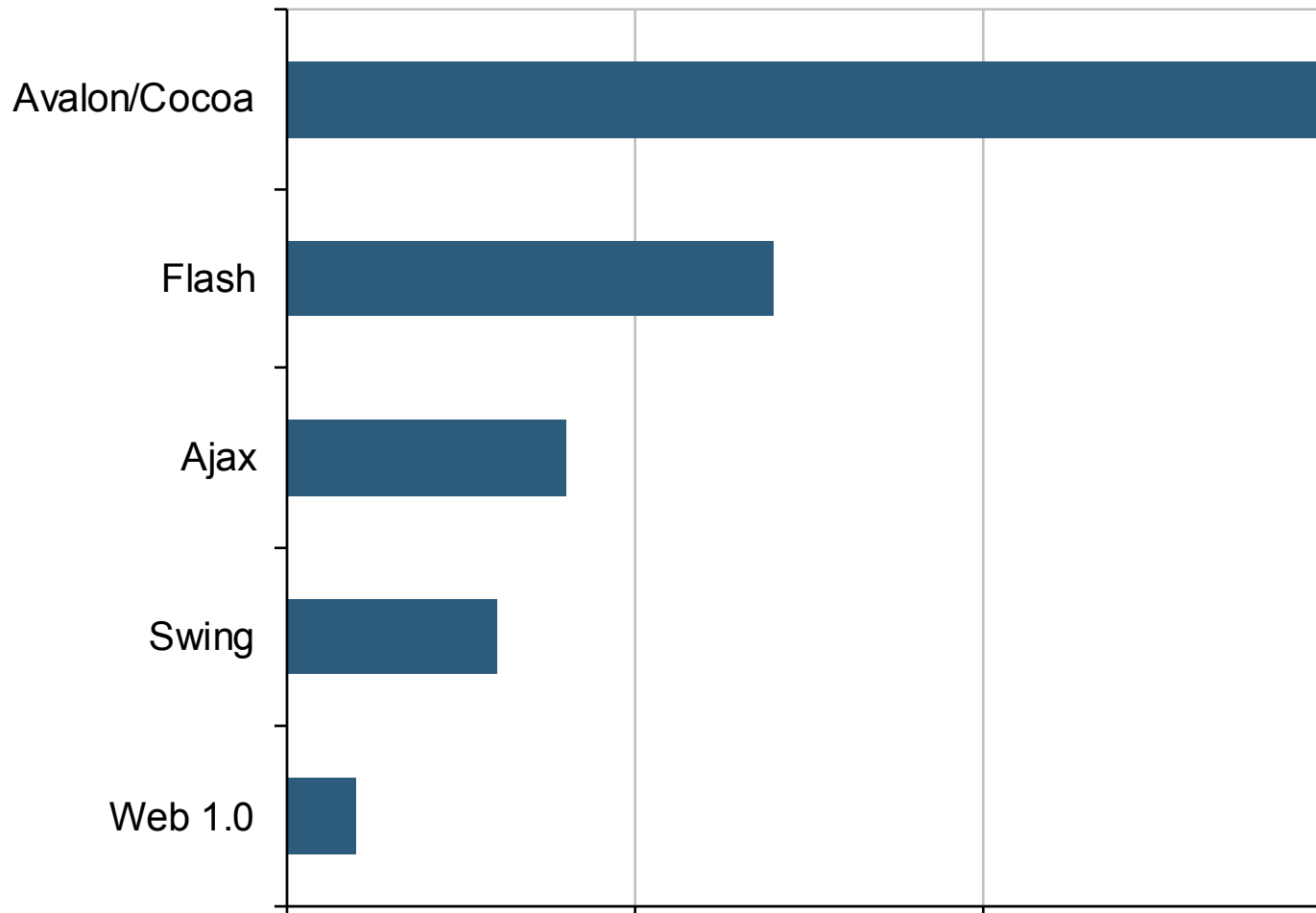
JavaOne

Web/AJAX Myths
What the Java Desktop team wants you to think…

- AJAX is hard

- Cross-browser differences are painful

- Rich effects (and widgets) are best left to desktop applications

- Off-line mode isn't possible

- Client-side validation is a pain

java.sun.com/javaone/sf

The Realities of AJAX Versus Desktop

AJAX Advantages	Desktop Advantages
Ease of development model	Much faster than JavaScript technology
Ease of deployment	Advanced graphical capabilities
Mash-ups	Tight integration with OS
Separation of concerns	Mature UI toolkit
Hackability (e.g., Greasemonkey)	Lack of hackability (e.g., security)

UI Technology Richness Scale

DEMO

- AJAX versus Desktop

What can AJAX do for you?

java.sun.com/javaone/sf

Increase Participation

Richer Interactivity

java.sun.com/javaone/sf
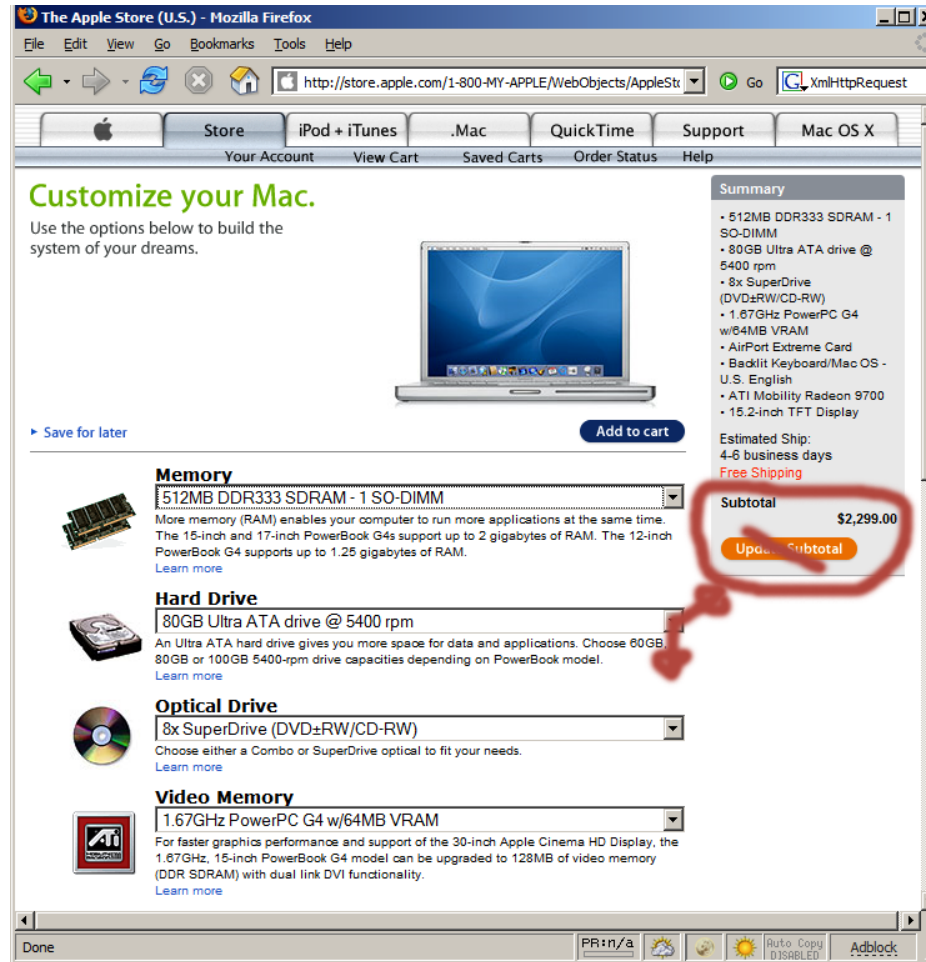
Improve Portals
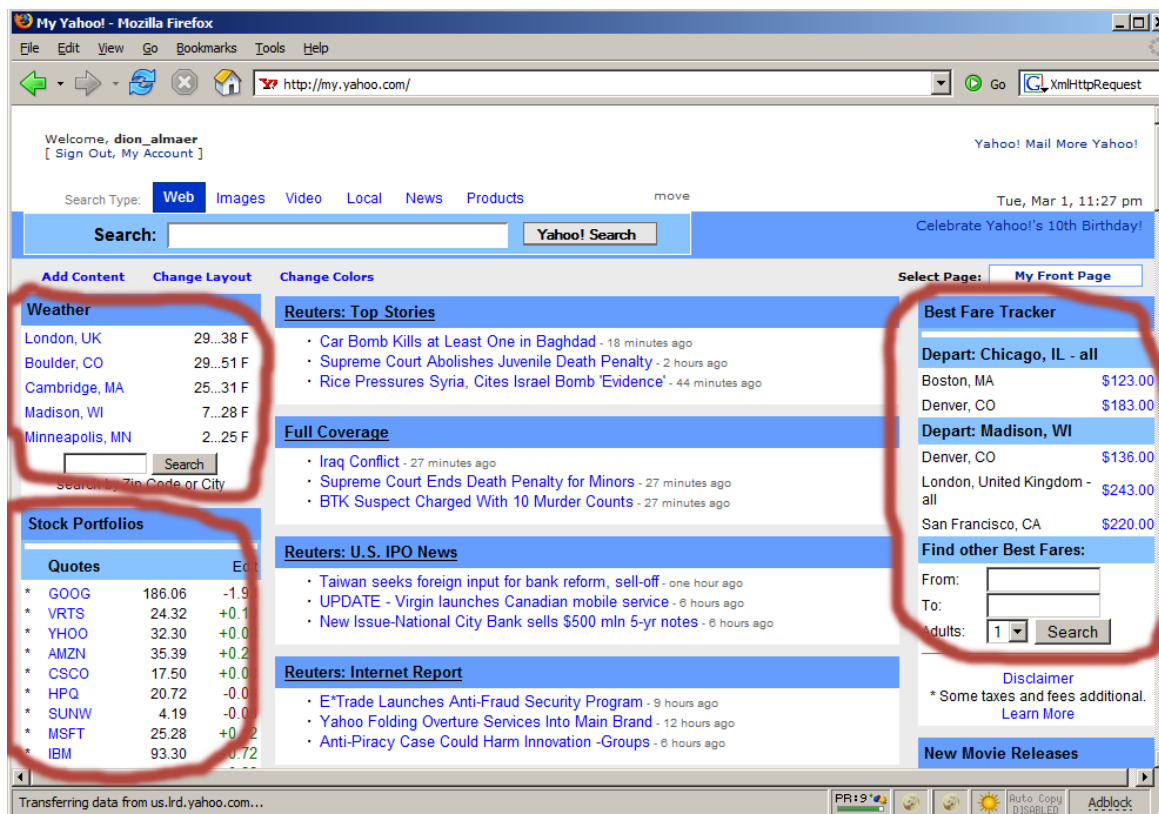
Improve Forums
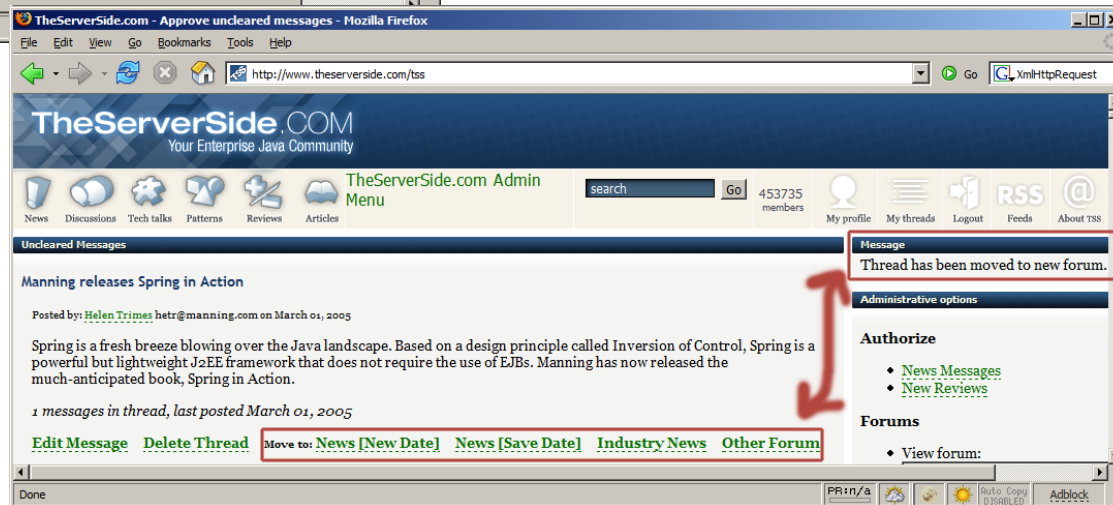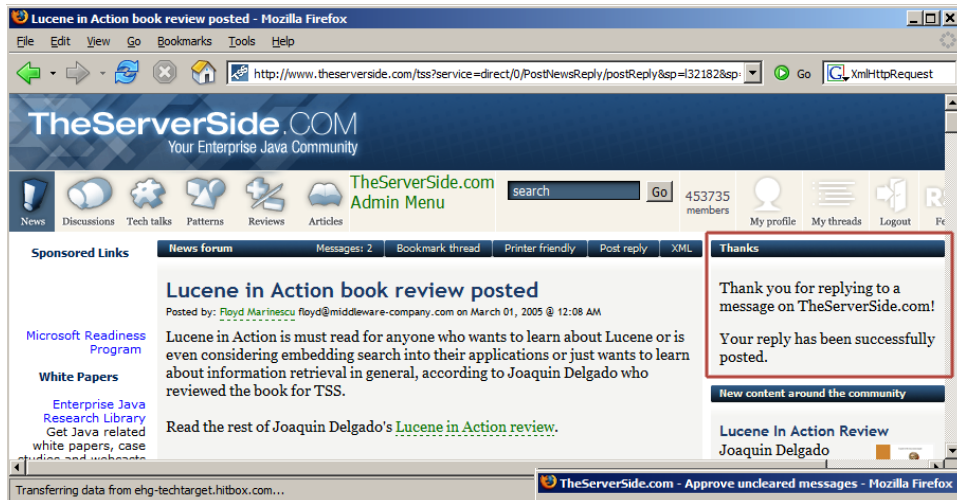
Rich Client-side Validation

java.sun.com/javaone/sf

DEMO

DWR

Ajaxian Frameworks

- The most popular AJAX frameworks:
  - Prototype
  - Script.aculo.us
  - Dojo
  - DWR
- Many, many, many others

Debugging Tips

- Use the DOM Inspector to observe the current state of your page
  - Use MODI for easier live inspection and DOM manipulation
- Use the JavaScript console to check for errors
- Use MochiKit logging and interpreter
- Use Venkman or Microsoft Script Debugger to troubleshoot behavioral problems

DEMO

Ajaxian Debugging

java.sun.com/javaone/sf

AJAX Futures

- SVG
- Canvas
- JIT
- Off-line
- Flash

Q&A

An Introduction to AJAX

Ben Galbraith and Dion Almaer

Founders
Ajaxian.com

TS-4489

java.sun.com/javaone/sf