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# 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

Does anyone here not  
know what AJAX is?

# AJAX: A New Approach to Web Applications

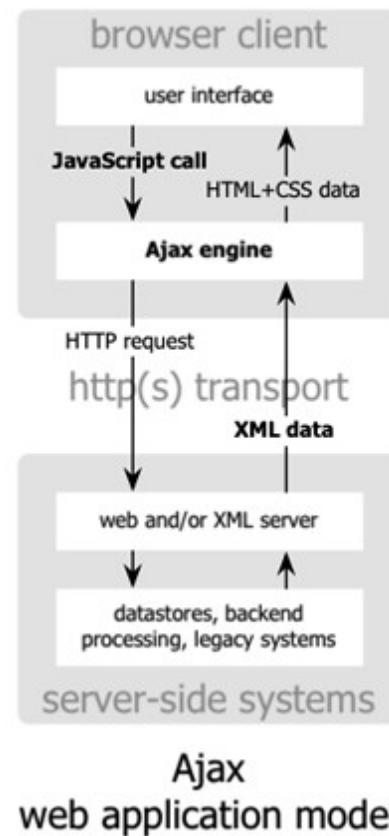
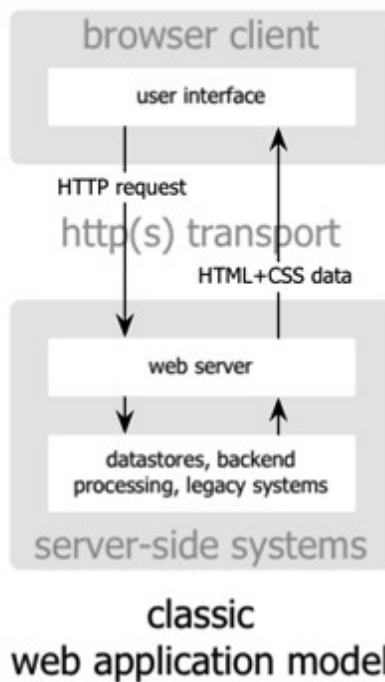
by Jesse James Garrett, February 18, 2005



“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?



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# DEMO

A Simple AJAX Application

<code>/>

# 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



# XMLHttpRequest Methods

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

# XMLHttpRequest Properties

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

# Three Main Ajaxian Architectures

Return Data  
(JSON / XML)

Return HTML  
(responseText +  
innerHTML)

Return JavaScript  
(eval)



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# DEMO

## AJAXian Architectures

<code>/>

# The Ajaxian Innovators

Google Maps - pubs in madison, wi - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://maps.google.com/

Java TSS WebLogs AdigiWiki Bank BBC 5 CC Telegraph TinyURL UAL del.icio.us post Ta-da

Search Web Alerts Bookmarks My Yahoo! Reference Movies TV Yellow Pages Maps

Google Maps Local Search Directions

pubs in madison, wi Search Help Send Feedback

Maps

Print Email Link to this page

- A** Bullwinkle's Pub (608) 257-1122 - 0.2 mi E
- B** Pub the (608) 256-2464 - 0.4 mi E
- C** Big Ten Pub: Burgers & Sandwiches Carry Out Available (608) 251-6375 - 0.5 mi SW
- D** Irish Pub (608) 256-6071 - 0.6 mi E
- E** Zins Boelter & Lincoln Inc Pub Rel (608) 251-5887 - 0.8 mi E
- F** Paradise Lounge the (608) 256-2263 - 1.0 mi E
- G** Willy Street Pub & Grill (608) 256-8211 - 1.6 mi E
- H** Pitcher's Pub (608) 271-9702 - 2.5 mi S
- I** Wonders Pub (608) 244-8563 - 2.6 mi NE
- J** William Peters Sc Cert Pub Acc (608) 274-3033 - 3.0 mi S

Transferring data from maps.google.com...

# The Ajaxian Innovators

City: Denver Price Range: \$150K - \$300K Refresh Satellite

Powered by craigslist and Google Maps

Map interface ©2005 Google

Transferring data from a.km.craigslist.org...

Price	Description	City	Date
\$245K	Great 5 bdrm house in quiet Arvada neighborhood	Arvada	5/17
\$295K	5beds, 3bath, brick ranch, 2car, 3027 sq ft 54th & Carr	Arvada	5/15
\$183K	Arvada Townhouse	Arvada	5/15
\$285K	3100sq feet House ridgeview glen /hopping/mountain views	Aurora	5/16
\$285K	3100 sq feet House ridgeview glen /hopping/mountain view/	Aurora	5/15
\$210K	3beds, 2bath, 2car, Cherry Creek Slate Park	Aurora	5/15
\$285K	3100sq feet House for rent ridgeview glen /hopping	Aurora	5/15
\$200K	5 Bed, 2 Bath 2,000 Sq. Ft.	Aurora	5/15
\$285K	3100 sqft, 4 bdr/mountain view/close to shopping/ridgeview glen	Aurora	5/13
\$230K	Stunning home in Aurora, priced below appraisal	Aurora	5/13
\$248K	Great Boulder Condo For Sale—Awesome Location	Boulder	5/16
\$186K	Large Sunny 2 bedroom Condo in Centrally located Boulder	Boulder	5/17
\$189K	Boulder Condo — Great Location	Boulder	5/17
\$215K	Gorgeous Boulder condo 1050sqft Below market value! Price dropped!	Boulder	5/16
\$245K	Open House — Best deal in Brighton's Bromley Park!	Brighton	5/14
\$203K	Rent To Own — No Credit Needed	Broomfield	5/16
\$285K	Castle Pines North Condo	Castle Rock	5/15
\$285K	Great Castle Pines North Condo	Castle Rock	5/15
\$220K	Open House 5/14 1-5 pm, Great Home, Must See	Commerce C	5/13
\$188K	gateway	Denver	5/18
\$228K	Beautiful 2 bedroom condo in Gov Park	Denver	5/17
\$180K	Washington Park Highrise — Next to the Park!	Denver	5/17

# The Ajaxian Innovators



Web Images Groups News Froogle Local<sup>New!</sup> more »

As you type, Google suggests:

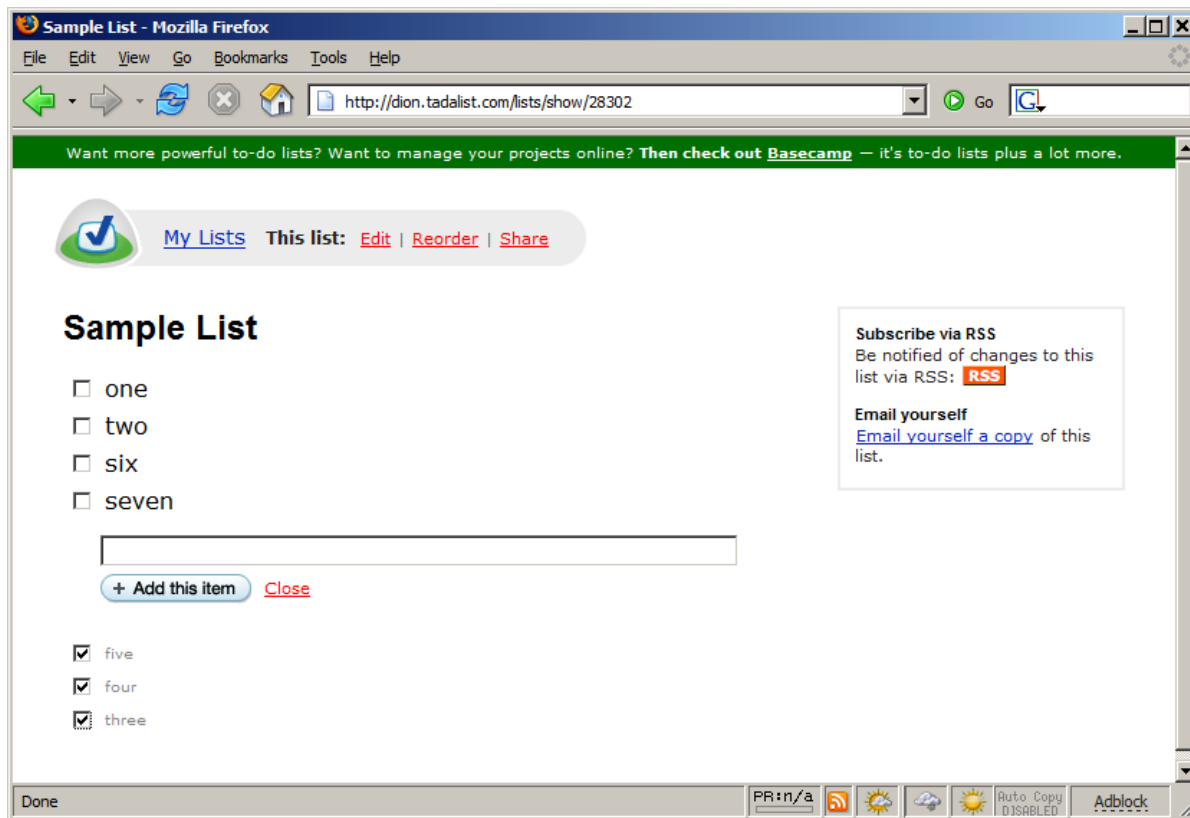
xmlhttp	57,300 results
xmlhttprequest	52,800 results
xmlhttp post	20,900 results
xmlhttp.open	4,400 results
xmlhttp object	21,000 results
xmlhttp.send	4,050 results
xmlhttp javascript	20,200 results
xmlhttp asp.net	14,100 results
xmlhttp send	26,600 results
xmlhttp mozilla	3,770 results

Advanced Search  
 Preferences  
 Language Tools

results. [Learn more](#)

In memoriam, [Jef Raskin](#) 1943-2005

# The Ajaxian Innovators





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

\* they want a rematch

AJAX is about more  
than sending data  
back and forth

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

(get over it)

# And the biggest surprise?

# JavaScript technology doesn't suck, after all

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

# Web/AJAX Myths

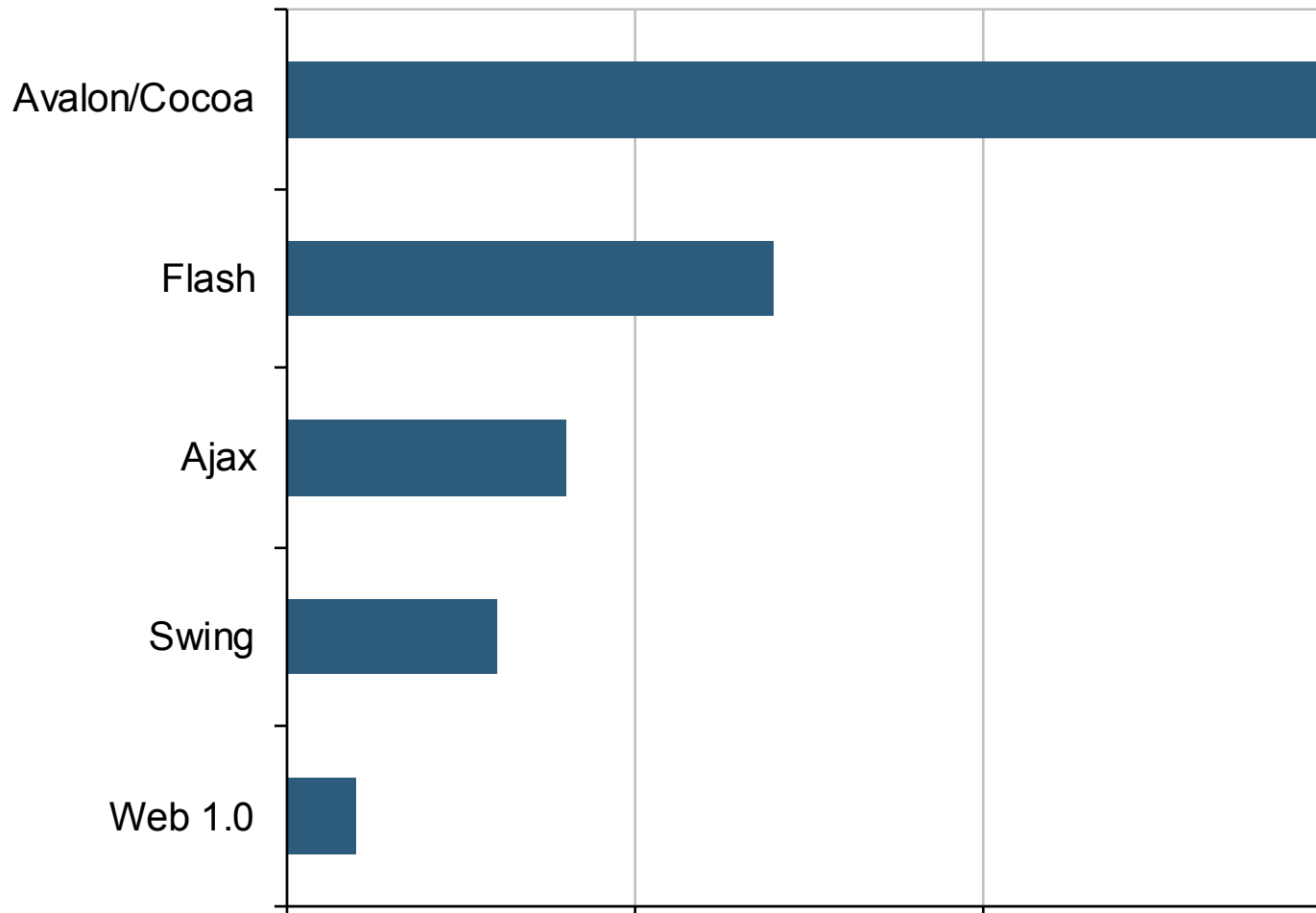
What the Java Desktop team wants you to think...

- 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

# 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?

# Increase Participation

**RATE THIS ITEM**

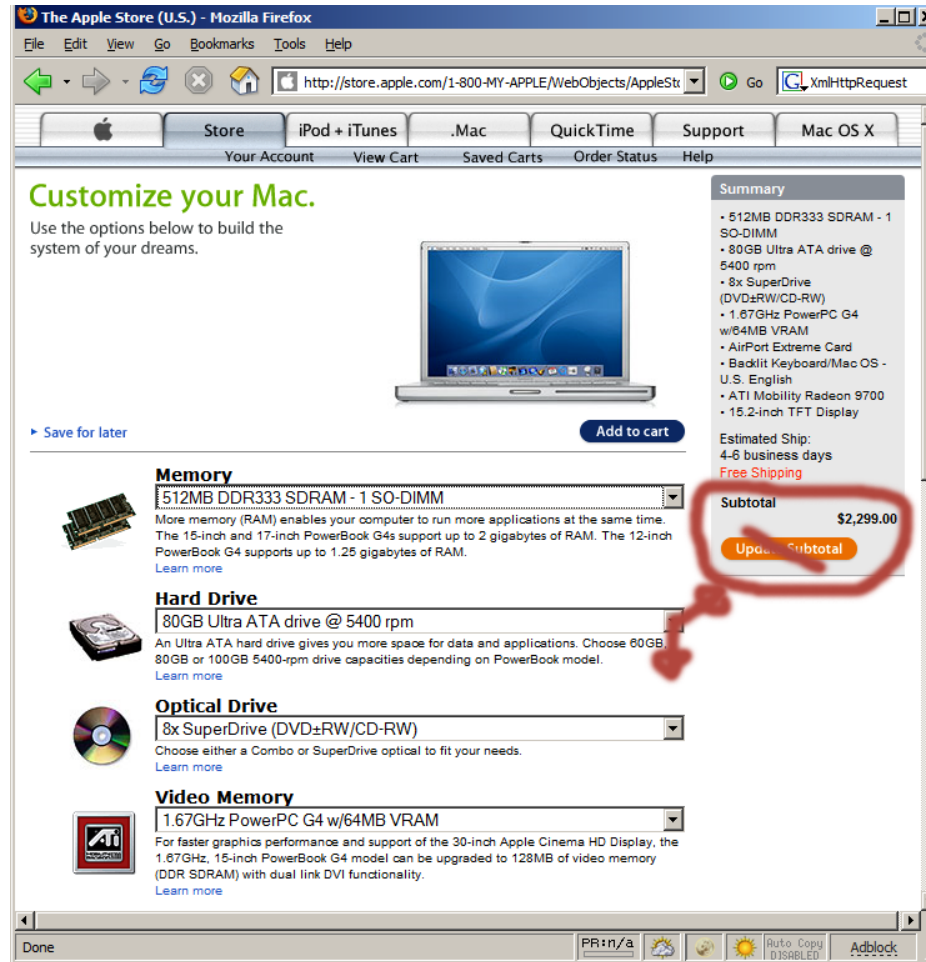
I love it!

X ★★★★★

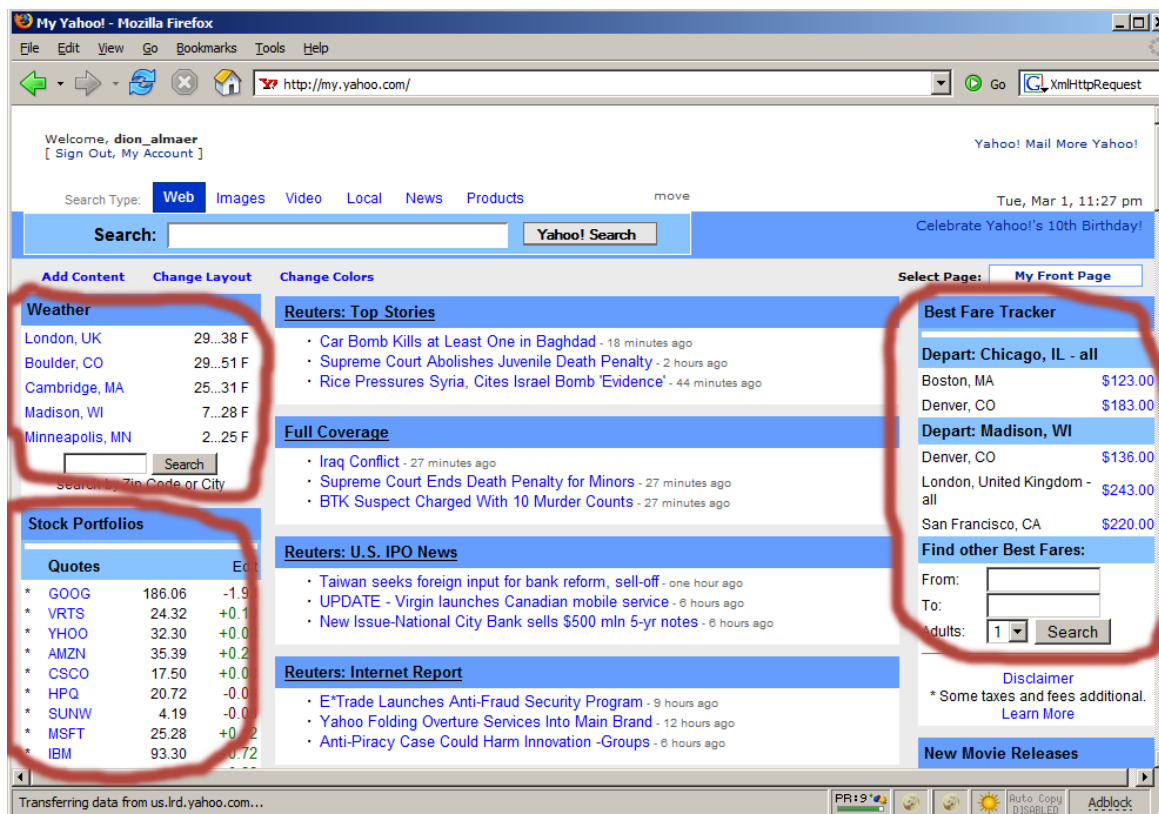
Not interested

I own it

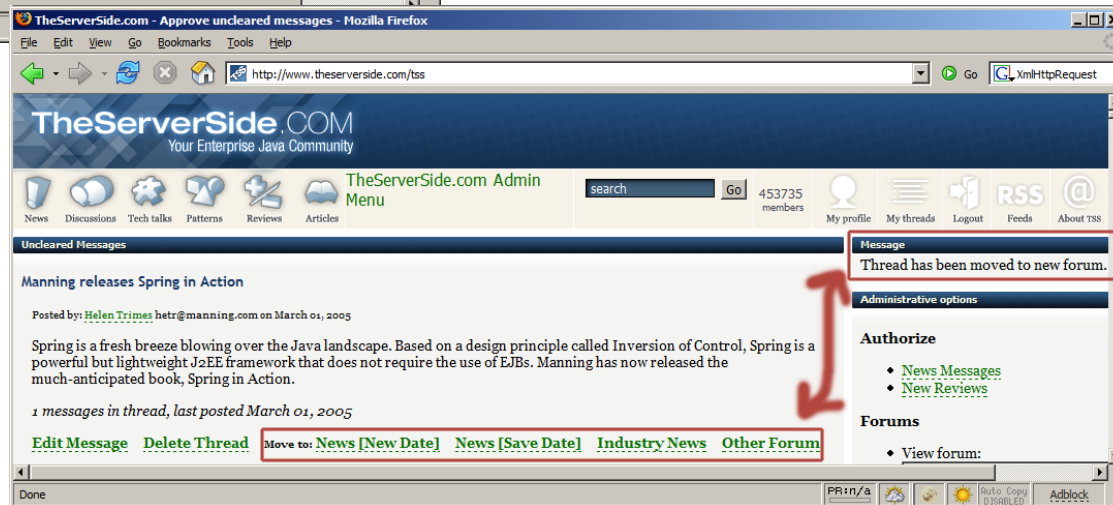
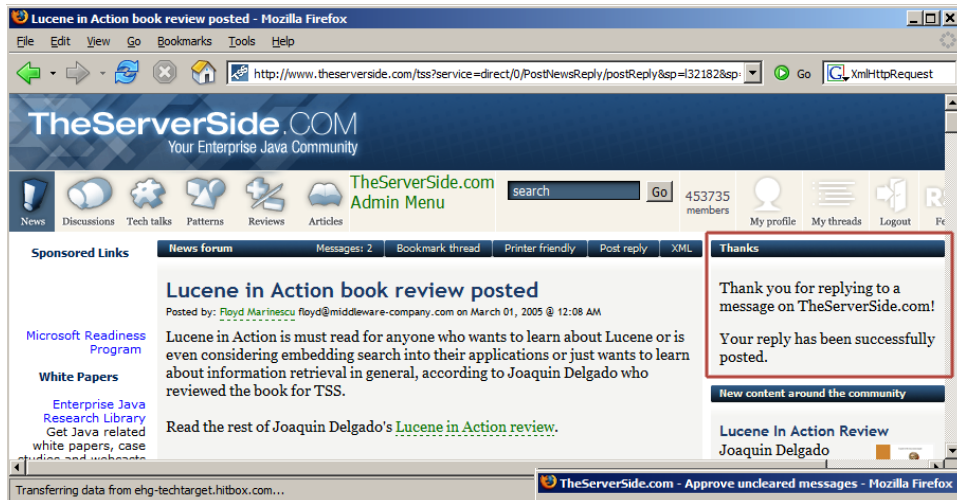
# Richer Interactivity



# Improve Portals



# Improve Forums



# Rich Client-side Validation



# DWR



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# DEMO

DWR

<code>



# 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



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# DEMO

## Ajaxian Debugging

<code>

# AJAX Futures

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



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# Q&A

<code>



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