Designing for Ajax

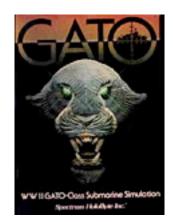
Principles and Patterns for Designing Rich Internet Applications



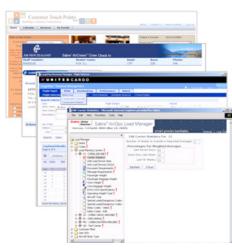
Background

- Games, research, science, military, biz
- Apps, frameworks, widget sets
- Developer, designer
- Object-oriented background
- Software architect, user experience manager
- Yahoo! Ajax Evangelist, Yahoo! Patterns Curator
- http://looksgoodworkswell.com









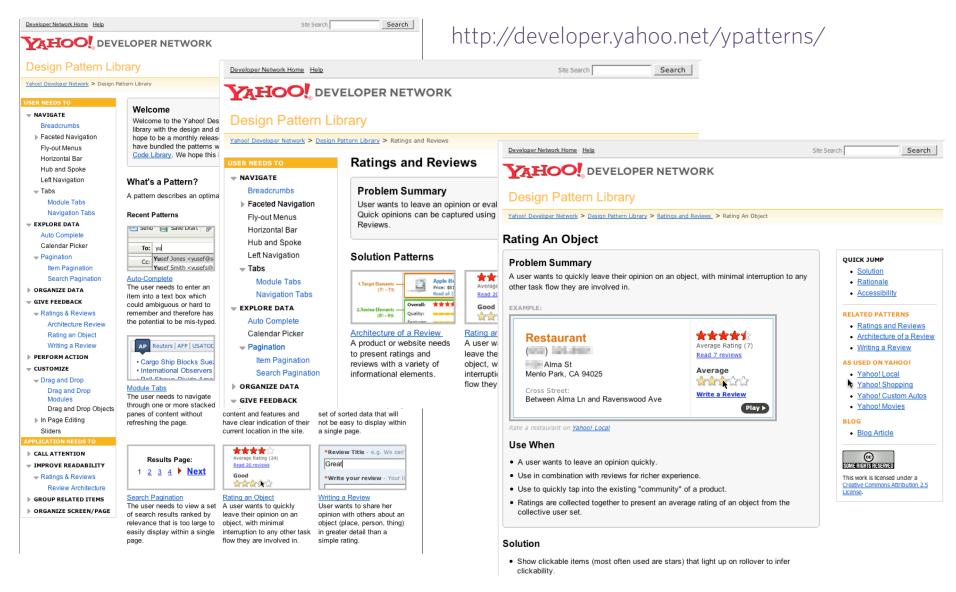


Ajax at Yahoo!

- Acquisition of Oddpost led to mission to evangelize Ajax goodness throughout Yahoo
- Summer 2005 Ajax Evangelism Team Founded
 - Doug Crockford JSON, Y! DHMTL Architect
 - Iain Lamb Founder of Oddpost/Y!Mail Beta
 - Me



Yahoo! Pattern Library Release





http://yuiblog.com



Yahoo! Design Pattern Library Released

February 13, 2006 on 7:54 am by Bill Scott | In Design |

I'm excited to announce that today we are releasing the Yahoo! Design Pattern Library to the public under a friendly Creative Commons License. The goal in releasing this library is for us to share the common patterns that we see emerging at Yahoo! It is hoped that by opening up our design patterns we can share our current thinking as well as solicit your valuable feedback.

We believe design patterns are powerful. First, they offer a solution in context of a problem. Second, they provide a name for the solution. Taken together as a set, pattern libraries form a solution language that can enhance our ability to communicate design ideas. Lastly, they provide us a context in which to discuss a number of associated issues: the thinking behind a solution; issues around accessibility, and de-gradeablity; other related patterns; examples of usage; and code samples to name a few.

In case patterns are a new concept to you, here's a little history to get you up to speed.

Background on Patterns

SYNDICATE

All Entries:



All Comments:



RECENT POSTS

Developing a JavaScript Library for Yahoo!

Welcome to the Yahoo! User Interface Blog

The Yahoo! User Interface Library

Yahoo! Design Pattern Library Released

Search Pagination Design Pattern

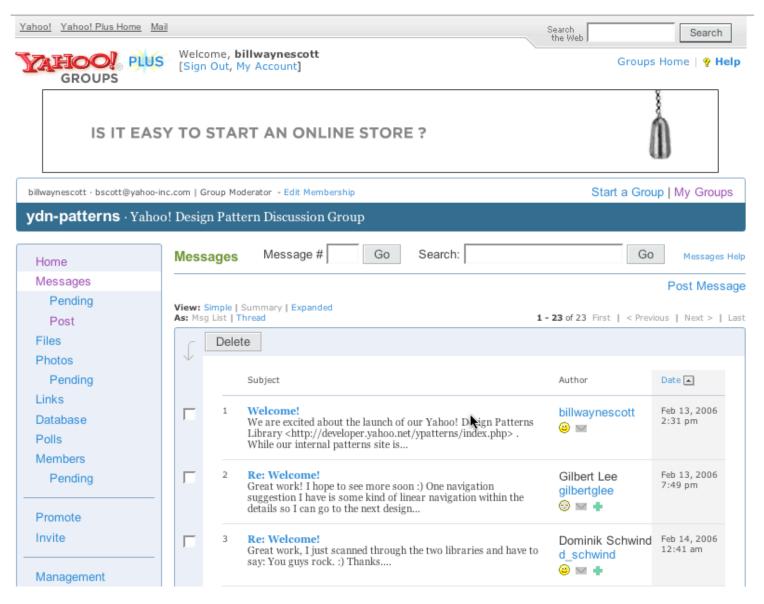
Item Pagination Design Pattern

Rating an Object Pattern



Yahoo! Patterns Discussion Group

http://groups.yahoo.com/group/ydn-patterns/





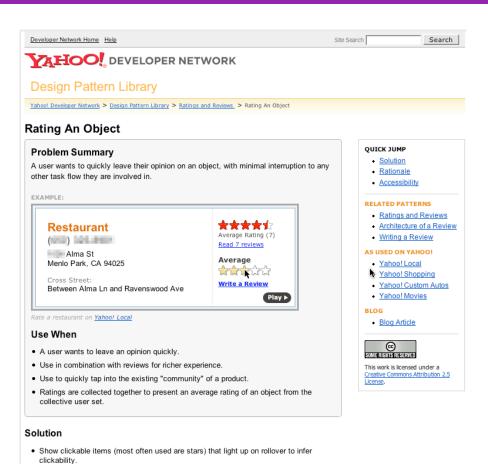
Breadcrumbs. Module Tabs. Navigation
Tabs. Auto Complete. Pagination. Item
Pagination. Search Pagination. Ratings
and Reviews. Architecture of a Review.
Rating an Object. Writing a Review. Drag
and Drop. Drag and Drop Modules.
Transition. Dim. Brighten. Cross Fade.
Contract. Expand. Fade In. Fade Out. Move.
Self-Healing. Slide. Highlight. Invitation.
Cursor Invitation. Drop Invitation. Tool Tip
Invitation. Hover Invitation.



Drag and Drop. Drag and Drop Modules. In Page Editing. In Page Custom Editing. Direct State Editing. Grid Cell Editing. Inline Custom Editing. Inline Tag Editing. Popup **Custom Editing. Slide-out Custom Editing. Inline Text Editing. Persistent Portals. Inline Reordering. Indication. Busy Indication. Cursor Busy. In Context Busy. In Context Progress. Inline Status. Character Counter. Auto Complete. Balloon Error Tip. Deferred Content Loading. Dynamic Goal. Narrowing Choices. Refining Search. Live Search. Dynamic Filter. Invitation. Cursor Invitation. Drop Invitation. Tool Tip Invitation. Hover Invitation. Detail Zoom. Opacity Focus. Configurable Module - Faceplate. Configurable Module - Flip It. Configurable Module - Inline Configure. Configurable Module - Slide Out Drawer. Slide Out. Flip. Opacity Fade. Endless Scrolling. Expandable** Paging Boundary. Fresh Content. Hover Detail. In Place Drill Down. Inline Assistant. Inline Validation. Validate Then Suggest. On Demand Refresh. Periodic Refresh. Resizable Modules. Scrolling Modules. Auto Save. In **Context Tools. Remembered Collection. Remembered** Preferences. Auto Form Fill. Rating an Object. Transition. **Brighten Transition. Cross Fade Transition. Dim Transition. Expand Transition. Fade In Transition. Fade Out Transition.** Flip Transition. Move Transition. Self-Healing Transition. **Collapse Transition. Slide Transition. Rich Internet Object. Available. Selected. Identifiable Object.**



Y! Patterns as a Platform (Web 2.0)



Yahoo! service
responds with a JSON
representation of a pattern.
Allows anyone to mashup the
patterns into a corporate
pattern library



Pattern Service

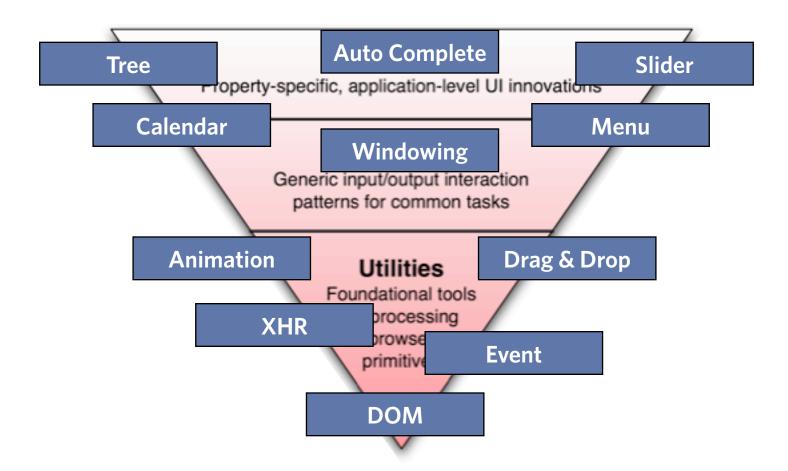


Corporate Branded
Pattern Site
(mashup)



DESIGNING FOR ALAX

Yahoo! UI Library





Principles



Principles for Ajax Design

- 1. Keep it direct
- 2. Provide live feedback
- 3. Offer an invitation
- 4. Cross borders reluctantly
- 5. Leave a light footprint
- 6. Show transitions
- 7. Think in objects



submit hyperlink

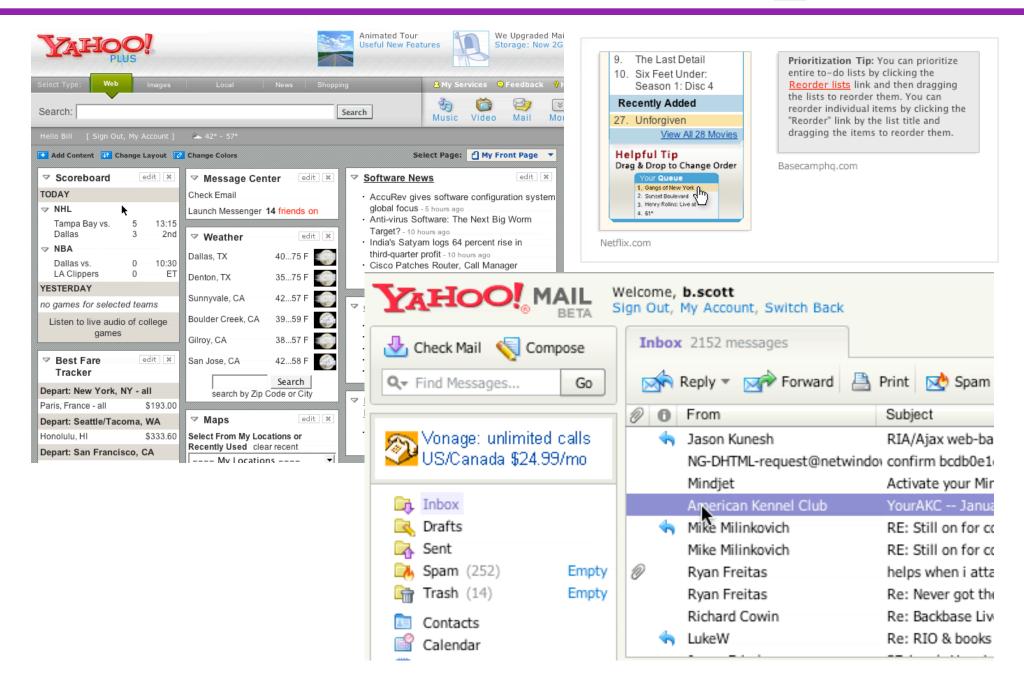


mouseout hover keypress keydown mousedown drop filter choices mouseup drag click select focus blur resize move timeout



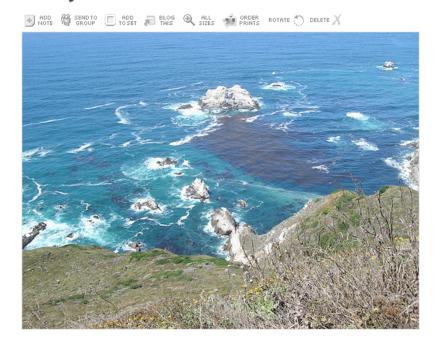
1 Keep it Direct

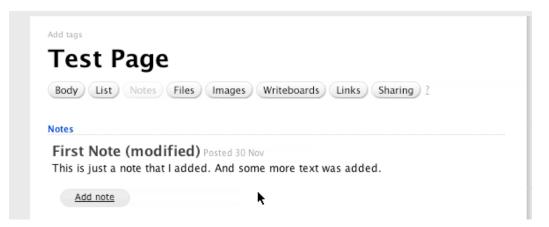


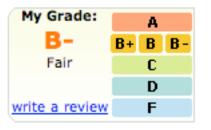


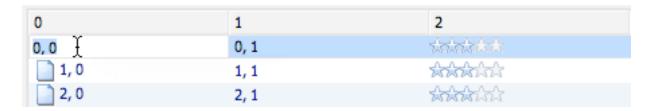


Rocky Waters

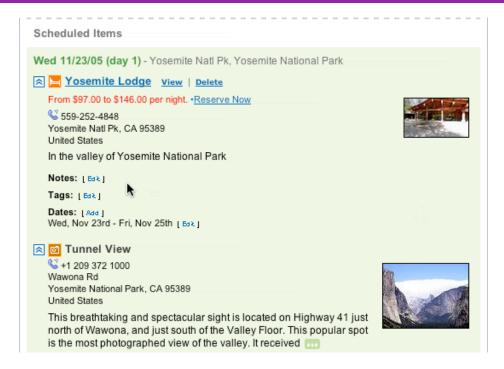




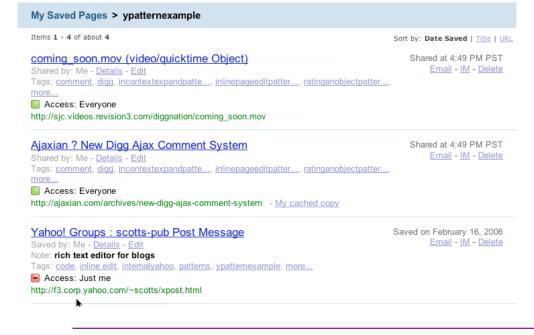




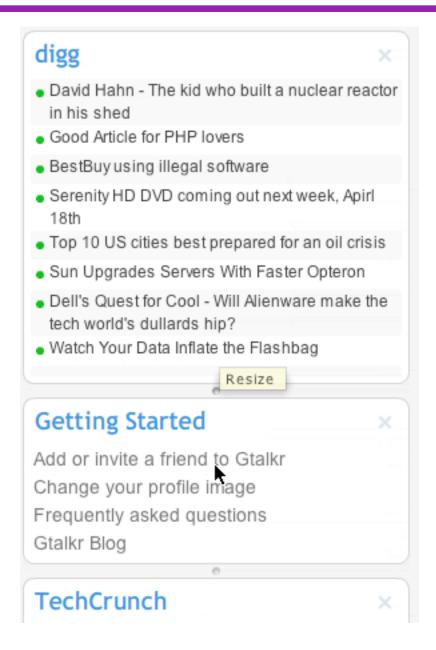




6 0	From	Subject
5	reter boersma	No. [10 Di
	Yahoo! Toolbar	Welcome t
	Weekend Extra	5 Tips for









Drag and Drop. Drag and Drop Modules. In Page Editing. In Page **Custom Editing. Direct State Editing. Grid Cell Editing. Inline Custom Editing. Inline Tag Editing. Popup Custom Editing. Slide-out Custom Editing. Inline Text Editing. Inline** Reordering. Resizable Content.



What about discoverability?



State park near our home in San Jose

Click to edit

5 photos | Add a comment?

Photos are from 22 Oct 05.



What about discoverability?

Use direct editing on page content

What about save/cancel? **Avoid page jitter** Reduce the feeling of modes



State park near our new home in San Jose (next to Milpitas)

OR CANCEL



What about discoverability?

Use direct editing on page content

What about save/cancel?
Avoid page jitter
Reduce the feeling of modes

Create a home page for the VisDe to make findability easier

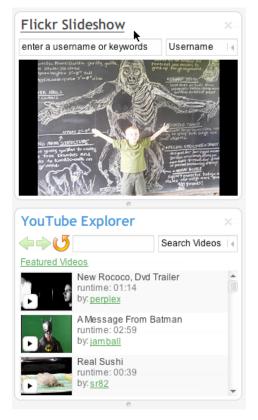
Account for experimental patterns as well as established patterns

Provide in-context tools

Only good for single operations Can actually slow you down



What about discoverability?

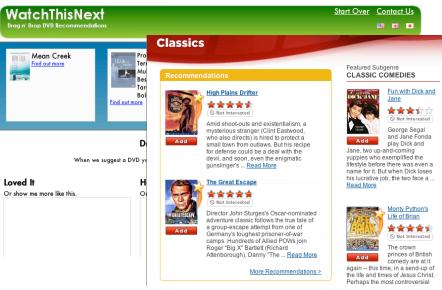


Pick Up at the Store

- ☐ DRAG Chips
- ☐ DRAG Milk
- ☐ DRAG Bread
- 🔲 📭 Orange Juice 2
- ☐ DRAG Tomatoes
- DRAG Lettuce
- What is spam?
- Can I transfer my message credits?
- How do I delete my HandyPay account?
- What if I didn't receive my full message package?
- I need to contact customer care regarding the Compose Text Message service.

Use direct editing on page content

What about save/cancel?
Avoid page jitter
Reduce the feeling of modes



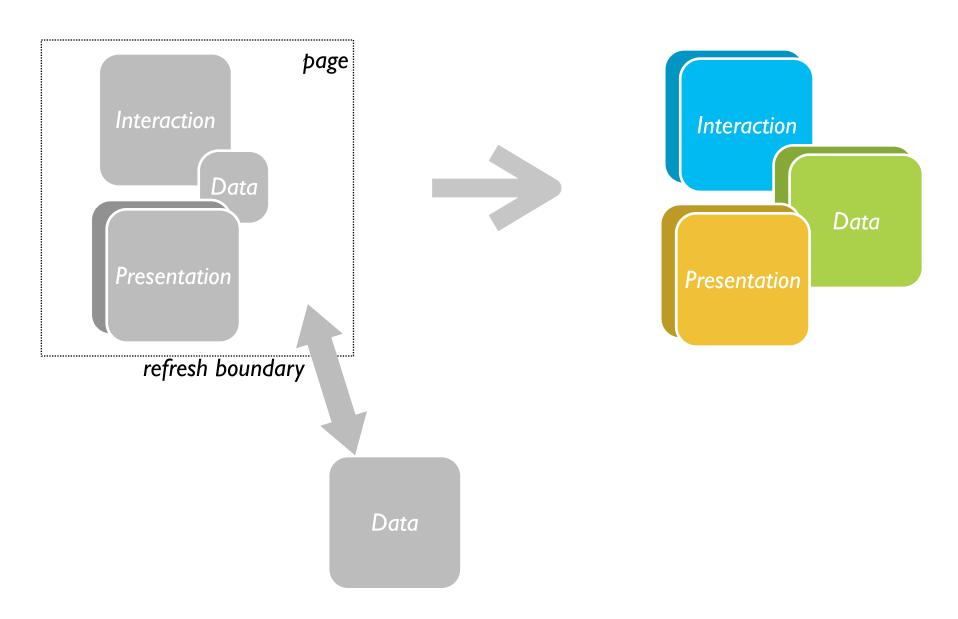
Use drag and drop where appropriate

Not for simply setting an attribute Good for layout changes or containment Needs transitions

Provide in-context tools

Only good for single operations Can actually slow you down







2 Provide live feedback





Instant Search BETA

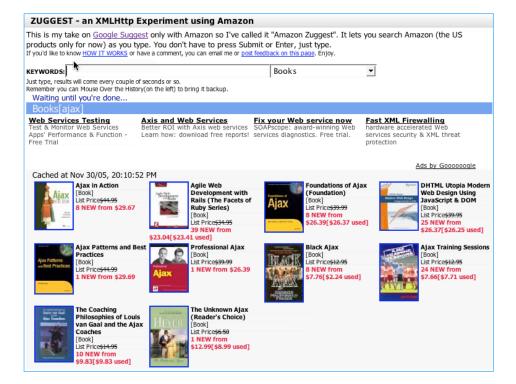
Search the Web

Instant Search gives you answers as you type -- no more waiting!

Why feel lucky when you can be right? With Instant Search, results instantly appear for Yahoo! Shortcuts and common searches. Give it a spin! Type in these examples below, or try your own searches:

- · boston weather
- wikipedia
- nfl

- · 22 5th ave new york ny
- · san francisco coffee shops
- dmy





Ask Your Question	
Enter your question You can ask 5 more questions today.	You have 110 characters to work with. Add details below.
2. Add details (optional) No spam, please! When in doubt, please refer to our community quidelines.	
	You have 1000 characters to work with.
3. Categorize the question	Arts & Humanities -> Auto & Transportation -

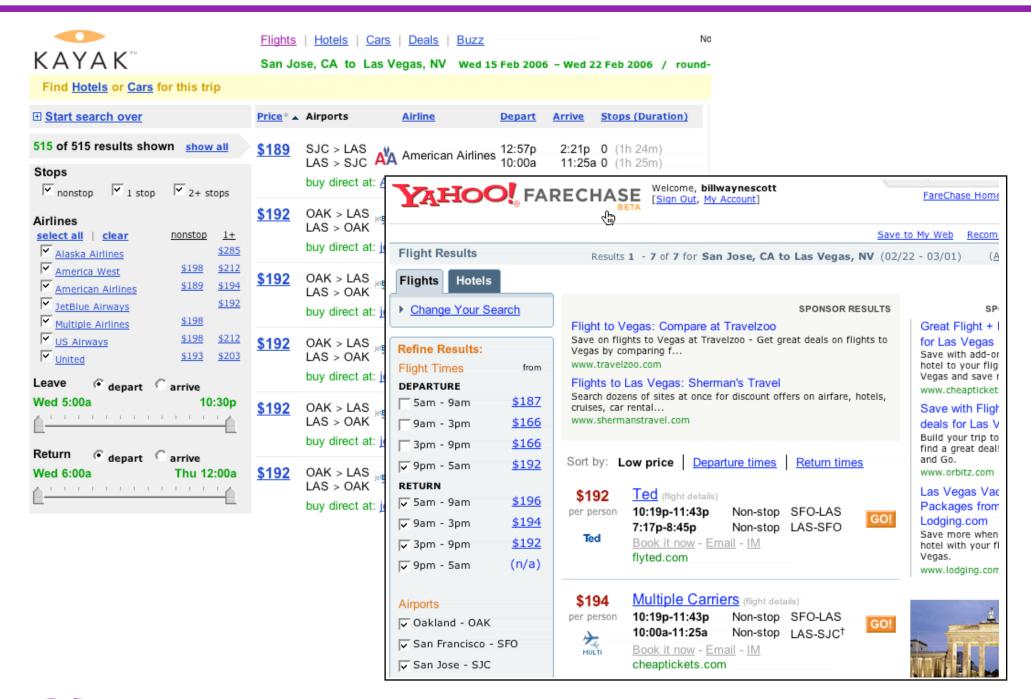




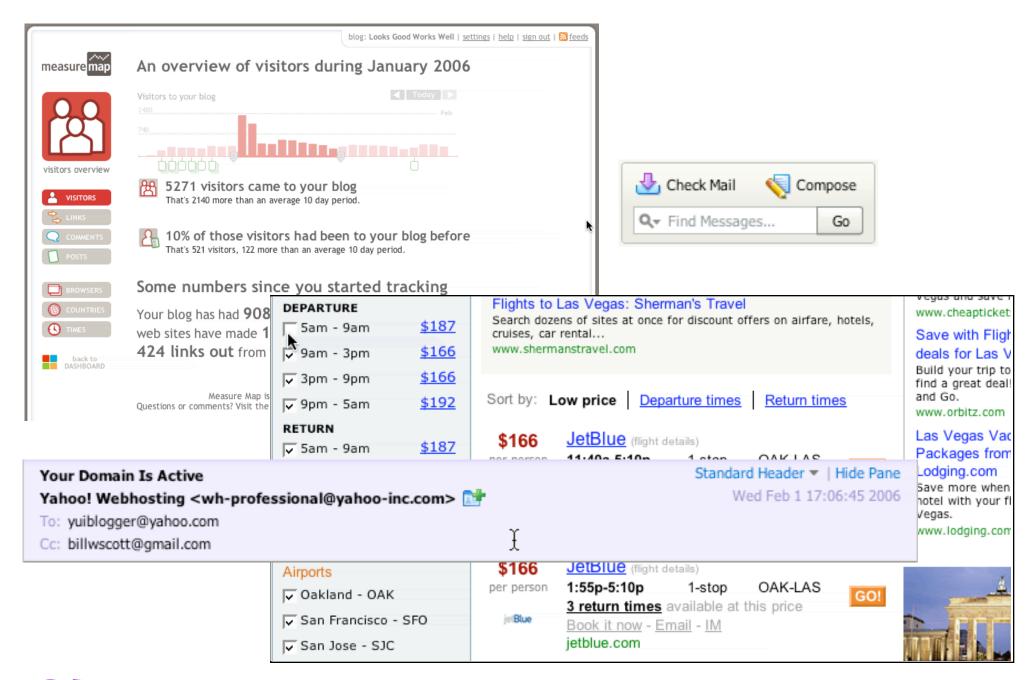




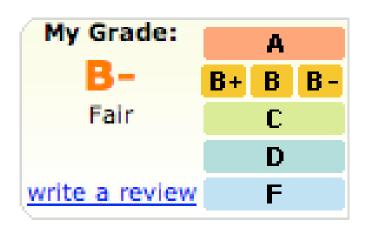














Ask Your Question

1. Enter your question

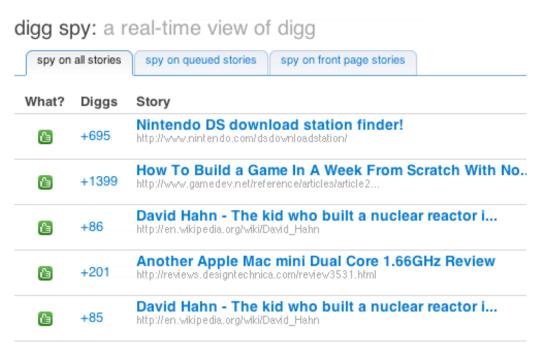
You can ask 5 more questions today.

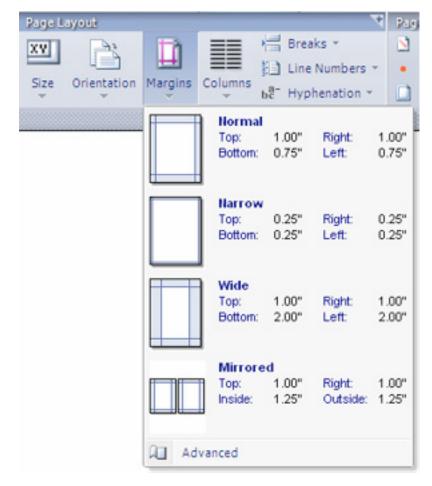
You have 110 characters to work with. Add details below.





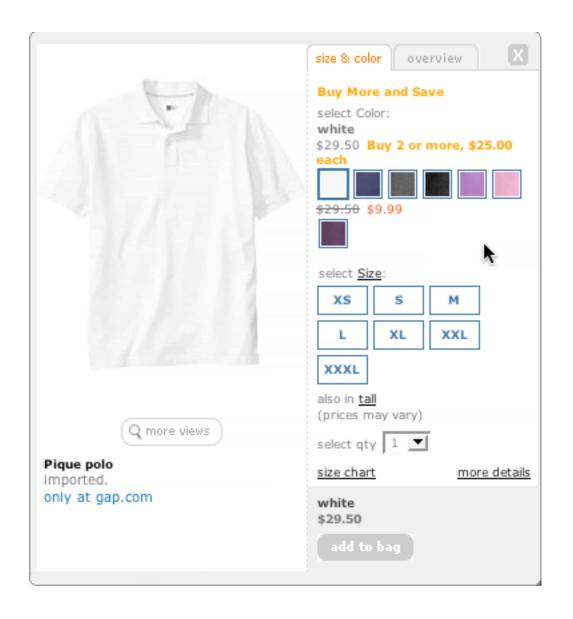






Office 12 Live Preview







Indication. Busy Indication. **Cursor Busy. In Context Busy. In Context Progress.** Inline Status. Auto Complete. Balloon Error Tip. **Deferred Content Loading. Dynamic Goal. Narrowing Choices. Refining Search.** Live Search. Live Preview. **Live Suggest. Character** Counter.



Keep the goal in mind

Design for immediacy
Is it narrowing or is it distracting
Use feedback to boost confidence
Let the user iterate where possible

Most Popular



Just-in-time data



Just-in-time logic



Instant Search BETA

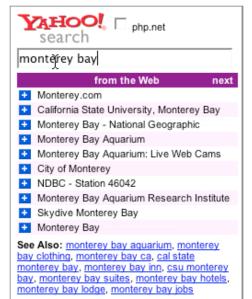
Search the Web

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- boston weather
- wikipedia
- nfl

- · 22 5th ave new york ny
- · san francisco coffee shops
- dmv





Feedback - Discuss - Terms of Use - FAQ

@2006 Google



Keep the goal in mind

Design for immediacy
Is it narrowing or is it distracting
Use feedback to boost confidence
Let the user iterate where possible

Keep the user engaged

Time passes faster Look for engaging moments







Keep the goal in mind

Design for immediacy
Is it narrowing or is it distracting
Use feedback to boost confidence
Let the user iterate where possible

Keep the user engaged

Time passes faster Look for engaging moments

Find a domain	name:		
www. billsportfolio.	com {	Search	
(ex. widgetdesign	ns.com)		
Required information for G	oogle account		
	meone@somewhere.com . myname@example.com. This will b	e your username and sign-in.	
Choose a password:	nimum of 6 characters in length.	Password strength: Too short	

Use live-previews

Look before you leap

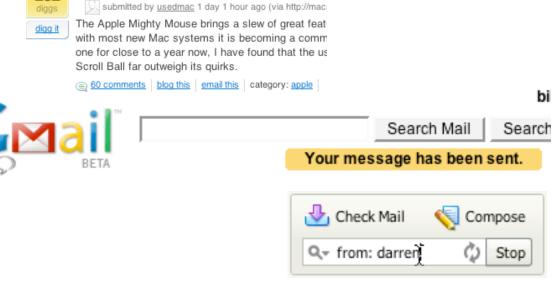


Keep the goal in mind

Design for immediacy
Is it narrowing or is it distracting
Use feedback to boost confidence
Let the user iterate where possible

Keep the user engaged

Time passes faster Look for engaging moments



Background: Black | White | Solution | Solu

AJAX Activity Indicators

Use live-previews

Look before you leap

Keep feedback focused

Keep it in context
Updating too many areas at once will be confusing
Show dynamically what is relevant
Avoid creating feedback noise/jitter



Fixing the Mighty Mouse

282



hover blur focus Click key
shiftclick doubleclick
drag dragdrop dragflipdrop
shiftdoubleclick tripleclick shifttripleclick

hover blur focus Click key shiftclick doubleclick drag dragdrop dragflipdrop shiftdoubleclick tripleclick shifttripleclick



hover blur focus Click

key shiftclick doubleclick dragdragdrop

hover blur focus click key shiftclick doubleclick drag dragdrop



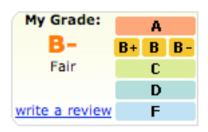
Offer an invitation



Park near our new home



Lists	
	Remove this item
	Add item or I'm done adding items
	Make a new list





classic



\$9.99-\$29.50 Buy More and Save



double mini striped pique polo \$29.50 Buy 2 or more, \$25.00 each See All



allover striped pique polo \$29.50 Buy 2 or more, \$25.00 each See All



rugby stripe pique polo \$29.50 Buy 2 or more, \$25.00 each See All

6 0	From	Subject
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7	Yahoo! Toolbar	Welcome t
. 15	Weekend Extra	5 Tips for



To see a product preview in action, hover over the link below.

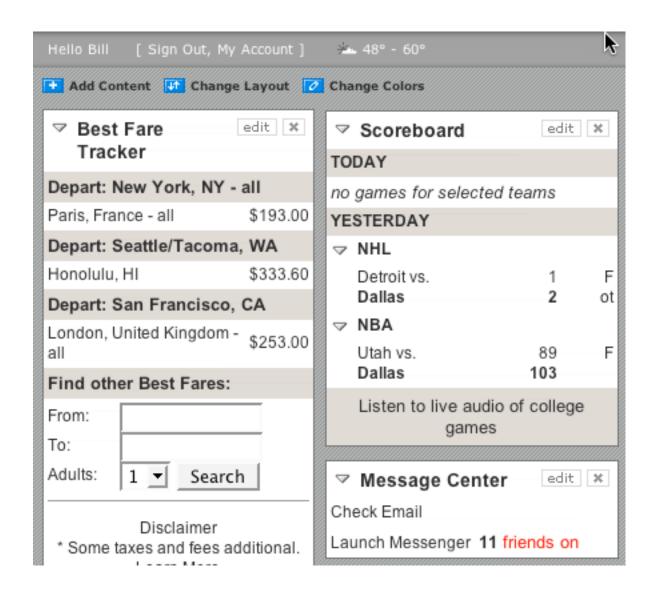


Forty Associates recently added product previews to their Web site as part of a small beta program. During the beta, visitors to Associate sites who viewed a product preview clicked through to Amazon.com over 4% of the time; those clicks resulted in a purchase nearly 6% of the time.

Now we're opening the beta up to all Associates to further improve product previews. The first 500 Associates who refer a sale through a product preview-enhanced link will receive a \$5 Amazon gift certificate. Click here to join your fellow Associates in beta testing product previews.

Don't worry if you don't already have Basic Display Product Links on your Web site. You can create them as part of the sign-up process. <u>Click here</u> for answers to questions you might have about the beta program.







Students to Enroll -

		Crew Id	Last Name	First Name
1		349394	Craft	Adrian
3	,	432939	Douglas	Elayne
-		468370	Hill	Petra

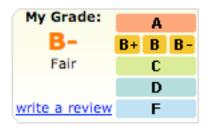
ar ———		DEC 2005			<u> </u>
M	T		T	F	S
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600922/Peterson		999300/Barnes			
		344935/Smith			
					· · · · · · · · · · · · · · · · · · ·
12	13	R 14	15	16	17
19	20	21	22	23	24
26	27	28	29	30	31
	12 19	5 6 600922/Peterson 12 13	M T W 5 6 7 600922/Peterson 999300/Barnes 344935/Smith 139204/Miller 12 13 14 19 20 21	M T W T 5 6 7 8 600922/Peterson 999300/Barnes 344935/Smith 139204/Miller 12 13 14 15 19 20 21 22	M T W T F 1 2 600922/Peterson 999300/Barnes 344935/Smith 139204/Miller 999300/Barnes 344935/Smith 139204/Miller 15 16 12 13 14 15 16 19 20 21 22 23

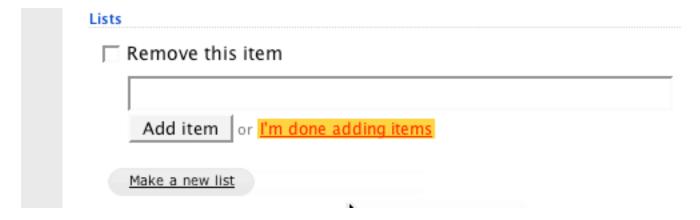


Invitation. Cursor Invitation. Drop Invitation. Tool Tip Invitation. Hover Invitation.



Use lightweight events as a welcome mat Rediscover the hover







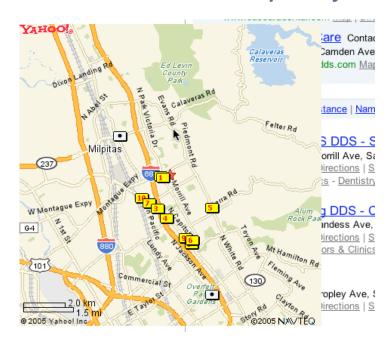
Make it engaging

Use lightweight events as a welcome mat Rediscover the hover

To see a product preview in action, hover over the link below.

.

Keep actions out of it Don't make the user afraid to explore Don't proselytize



Forty Associates recently added product previews to their Web site as part of a small beta program. During the beta, visitors to Associate sites who viewed a product preview clicked through to Amazon.com over 4% of the time; those clicks resulted in a purchase nearly 6% of the time.

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Make it engaging

Use lightweight events as a welcome mat Rediscover the hover

Keep actions out of it

Don't make the user afraid to explore Don't proselytize

Park near our new home



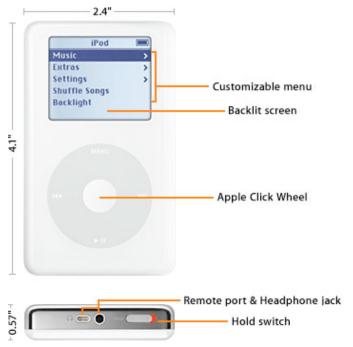
Get the actors involved

Hover Invitation Cursor Invitation Tooltip Invitation



Make it engaging

Use lightweight events as a welcome mat Rediscover the hover



Keep actions out of it

Don't make the user afraid to explore Don't proselytize



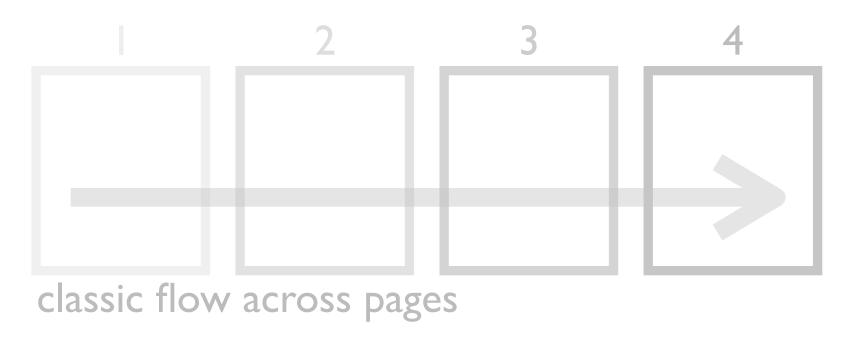
Get the actors involved

Hover Invitation Cursor Invitation Tooltip Invitation

Use invitations to aid discoverability

Two challenges: idiom & feature Adding signposts, always-on clues doesn't scale Add tours, help pedals, tips, spotlights







rich flow within page



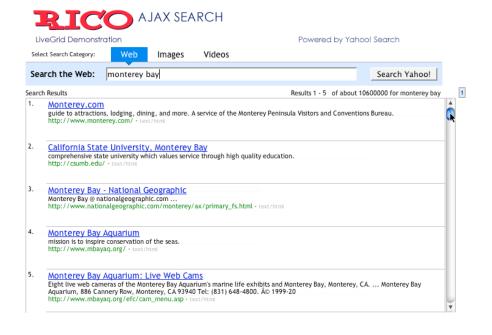
4

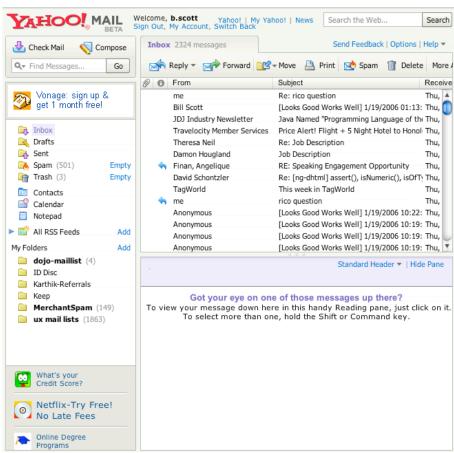
Cross borders reluctantly





Rico LiveGrid

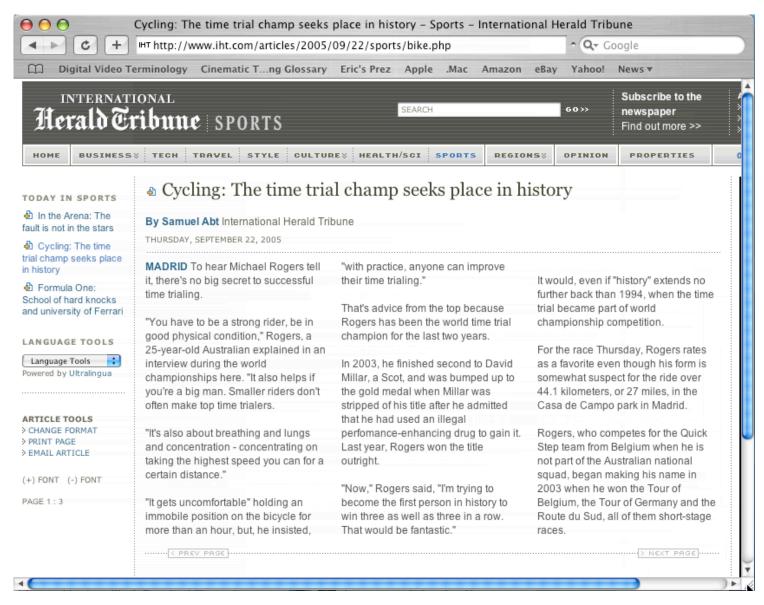




Yahoo! Mail Beta (Oddpost)

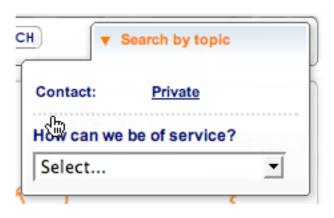


At the very least make your paging fast



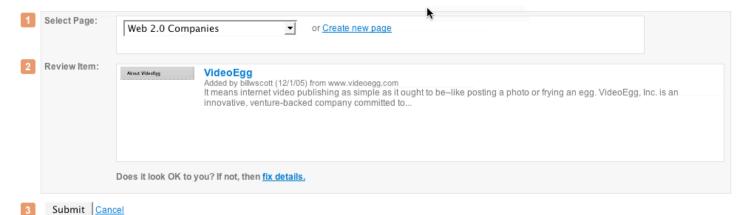






kaboodle

Signed in as billwscott | Send Feedback | Help | My







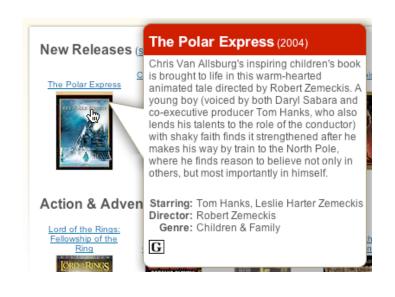


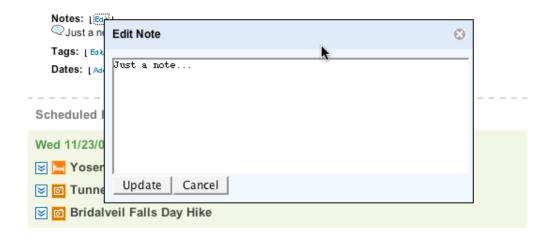
Required information fo	r Google account	
Your current email address:	someone@somewhere.com	
	e.g. myname@example.com. This will be y	our username and sign-in.
Choose a password:		Password strength: Too short
	Minimum of 6 characters in length.	

Find a domain name:		
www. billsportfolio.com	£	Search
(ex. widgetdesigns.com)		



- For introduction of features
- For giving instruction
- For revealing information
- For interrogative feedback
- For obtaining input
- For important interruptions
- For indication of status or progress
- For offering an invitation







Wired News: Top Stories

edit X

Christians Code Heavenly Games

Cloning the Best in Show

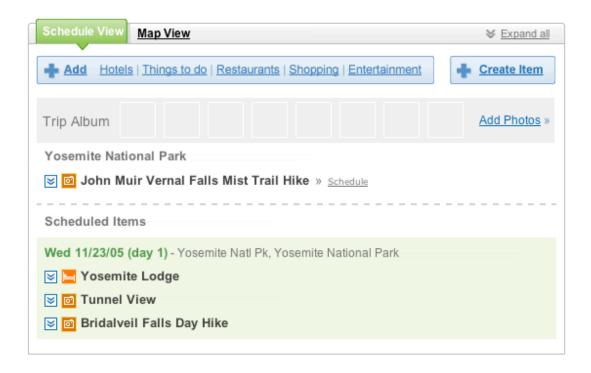
Brain Workouts May Tone Memory

Movies

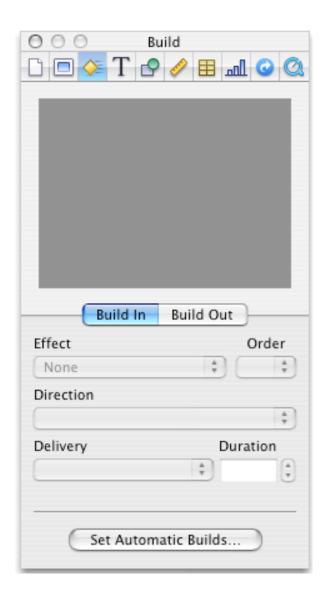
edit X

Showtimes for 76208 »

Must Love Dogs 1hr 30min - Rated PG-13

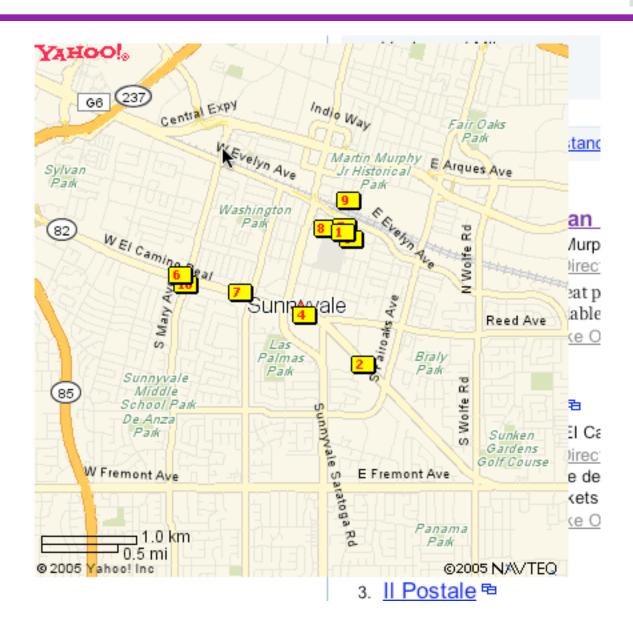












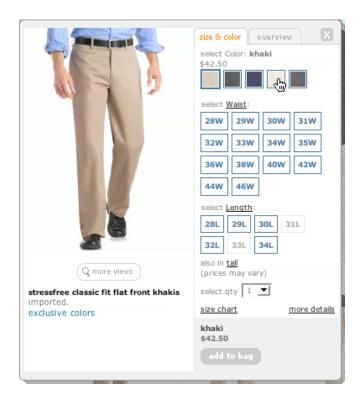


Endless Scrolling. Expandable Paging Boundary. Fresh Content. Hover Detail. In Place Drill Down. Inline Assistant. **Inline Validation. Validate Then Suggest.** On Demand Refresh. Resizable Modules. Scrolling Modules. Detail Zoom. Opacity Focus. Configurable Module-Faceplate. **Configurable Module-Flip It. Configurable Module-Inline Configure. Configurable Module-Slide Out Drawer.** Slide Out. Flip. Opacity Fade.



Rethink process flows

Its the user's model, not the page model Every page jump is a mental speed bump





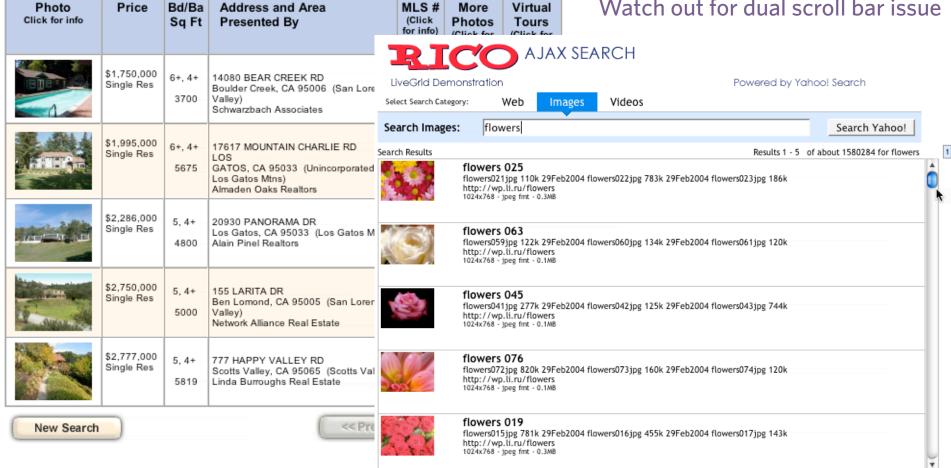


Rethink process flows

Its the user's model, not the page model Every page jump is a mental speed bump

Rethink paging

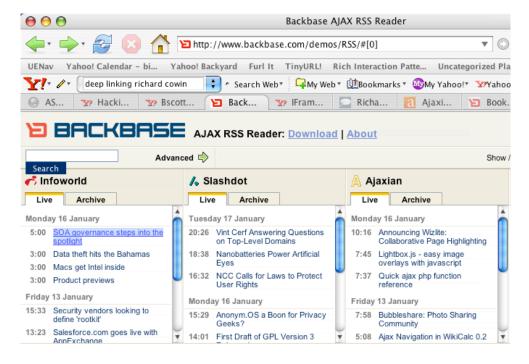
Its the user's model, not the paging model
Use scrolling for "owned" data
Watch out for dual scroll bar issue





Rethink process flows

Its the user's model, not the page model Every page jump is a mental speed bump



Rethink paging

Its the user's model, not the paging model
Use scrolling for "owned" data
Watch out for dual scroll bar issue

Plan for linking, crawling and back button

Not everything is a single page application What will the user think the back button does?



Leam more...

Use overlays

For momentary interruption
Replace page transition
When editing an individual, more complex item
Be symmetrical
Not disturb the page

Starter Web Page

Publish basic information on a placeholder web page — until you're ready to upgrade to a full web site.

View a sample.

Domain Locking

Safeguard your domain from hijacking and unauthorized transfers with domain locking. Yahoo! Domains secures your domain for you — and only you.



· Domain Forwarding

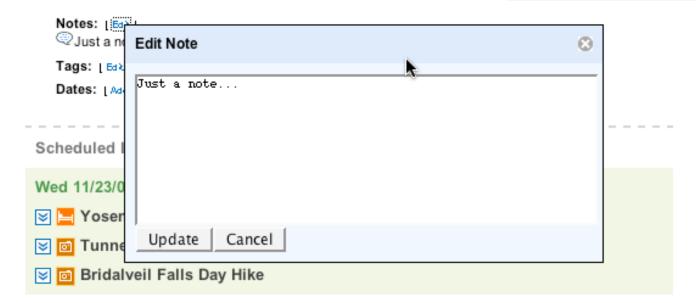
Point your new domain name to a web site you already have with domain forwarding. This is a useful feature if you own multiple domain names.

Complete Domain (DNS) Control

Advanced users: You can easily edit your name servers and MX, A, and CNAME records for complete control over your domain.

· Email Forwarding

Unlimited <u>forwarding</u> of messages sent to your new domain name into your free Yahoo! email account.





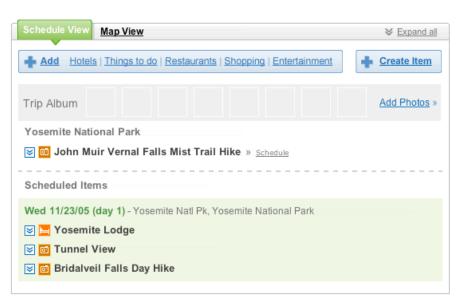
Use overlays

For momentary interruption
Replace page transition
When editing an individual, more complex item
Be symmetrical
Not disturb the page

Wired News: Top Stories Christians Code Heavenly Games Cloning the Best in Show Brain Workouts May Tone Memory Movies Showtimes for 76208 » Must Love Dogs 1hr 30min - Rated PG-13

Use in-context expands

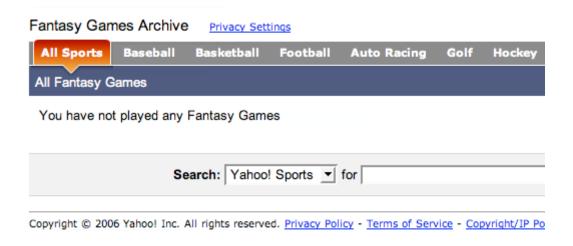
For editing part of a collection Need to see surrounding context For managing content modules





Use overlays

For momentary interruption
Replace page transition
When editing an individual, more complex item
Be symmetrical
Not disturb the page

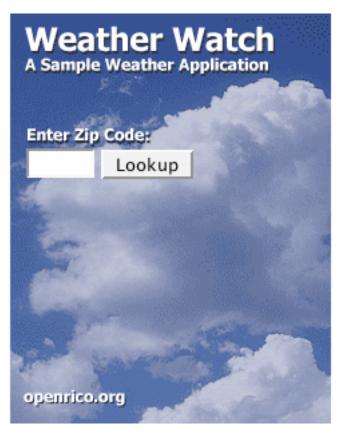


Use space creatively

Slide, zoom, flip, lens, fade Think of your backstage

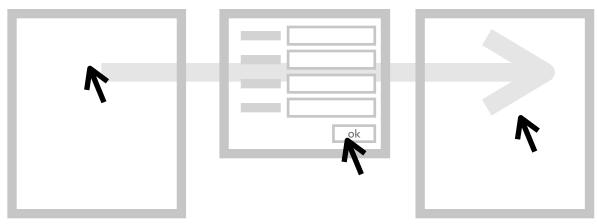
Use in-context expands

For editing part of a collection Need to see surrounding context For managing content modules



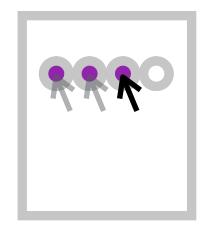


Shift. **Lightweight Actions.**



heavy click-weight





light-weight actions



Leave a light footprint



1 2 3 4 >> See All

straight fit



loose staight fit (sandblasted vintage) \$49.50



straight fit corduroy pants \$44.50 Buy 1 or more, save \$14.55 each See All



straight fit (blasted black) \$49.50

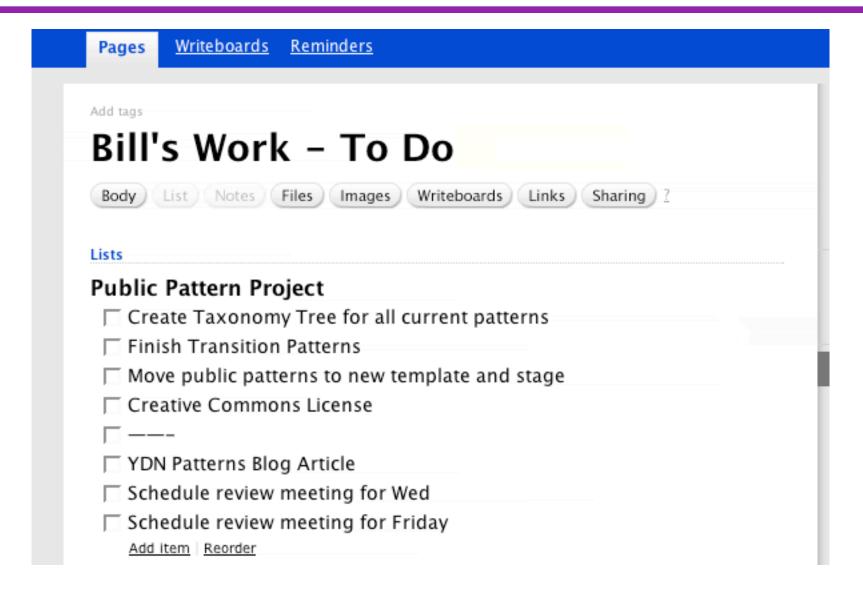


straight fit (dark authentic) \$44.50



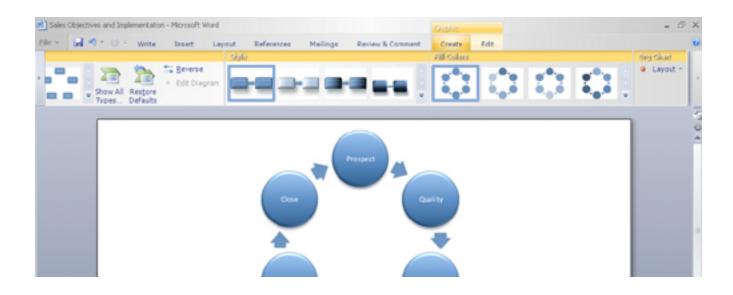








Microsoft Vista, Office 12 Contextual Command Tabs









Add

The Great Escape

gunslinger's ... Read More



Director John Sturges's Oscar-nominated adventure classic follows the true tale of a group-escape attempt from one of Germany's toughest prisoner-of-war camps. Hundreds of Allied POWs join Roger "Big X" Bartlett (Richard Attenborough), Danny "The ... Read More

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******** Not Interested The crown princes of British comedy are at it again -- this time, in a send-up of the life and times of Jesus Christ.

Perhaps the most controversial

lifestyle before there was even a

name for it. But when Dick loses his lucrative job, the two face a ...

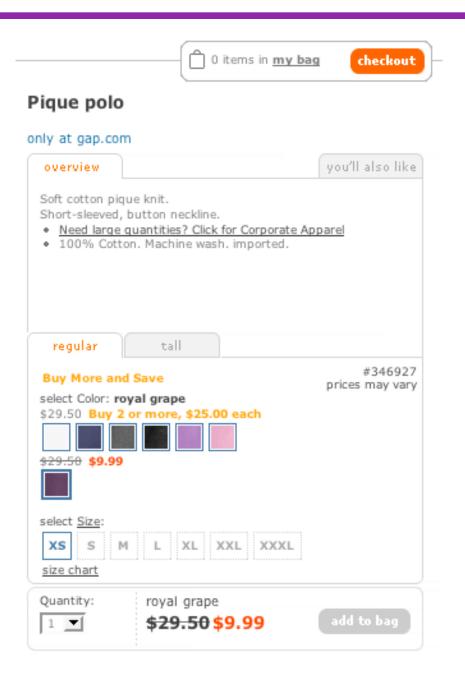
Monty Python's

Life of Brian

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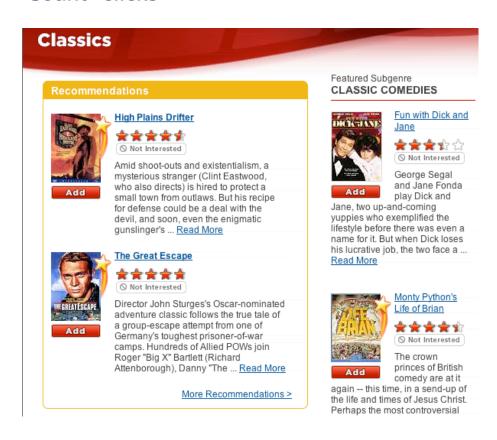


Auto Save. In Context
Tools. In Page Action.
Remembered Collection.
Remembered
Preferences. Auto Form
Fill. Live Ratings.



Watch your click weight

Keep actions immediate and light Count "clicks"





digg it

Fixing the Mighty Mouse

submitted by usedmac 1 day 1 hour ago (via http://mac

The Apple Mighty Mouse brings a slew of great feat with most new Mac systems it is becoming a comm one for close to a year now. I have found that the us Scroll Ball far outweigh its guirks.

60 comments | blog this | email this | category: apple



Watch your click weight

Keep actions immediate and light Count "clicks"

Design for engaging moments

The Critics: My Grade: A Rate this В Movie! 14 reviews C Select grade Yahoo! Users: to the right D B+write a review F 13199 ratings

Use invitations Keep it fun, exciting and light Treat it like an impulse aisle





Watch your click weight

Keep actions immediate and light Count "clicks"

RECOMMEND THIS STORY





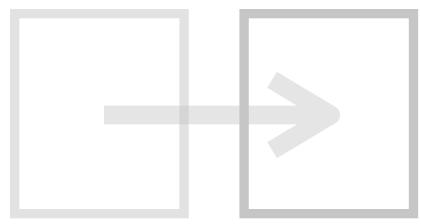
Use lightweight events

Hover
Blur, focus
Click. Avoid double-click

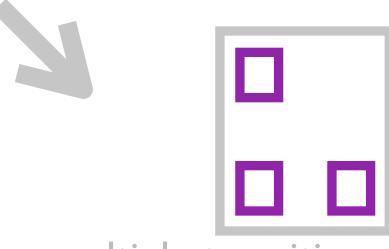


Design for engaging moments

Use invitations Keep it fun, exciting and light Treat it like an impulse aisle



page-based transitions



multiple transitions, single page



Show transitions



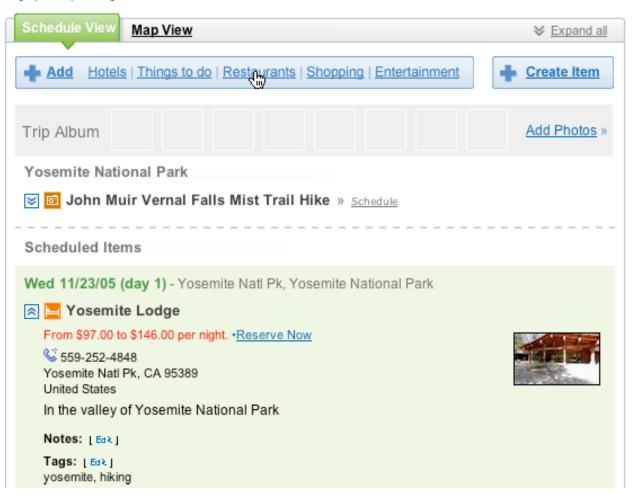


Yosemite Thanksgiving [Edit]

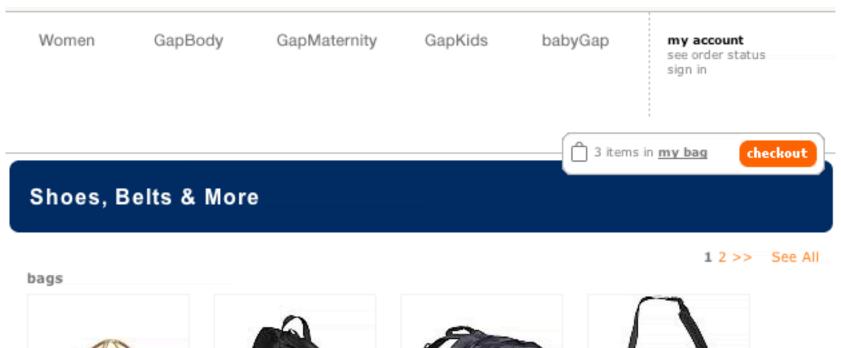
A trip to YOSEMITE NATIONAL PARK Fun in Yosemite with Daniel & Kids

This trip is public • Sharing settings • Email this trip

[Update photos]









Premium canvas duffle



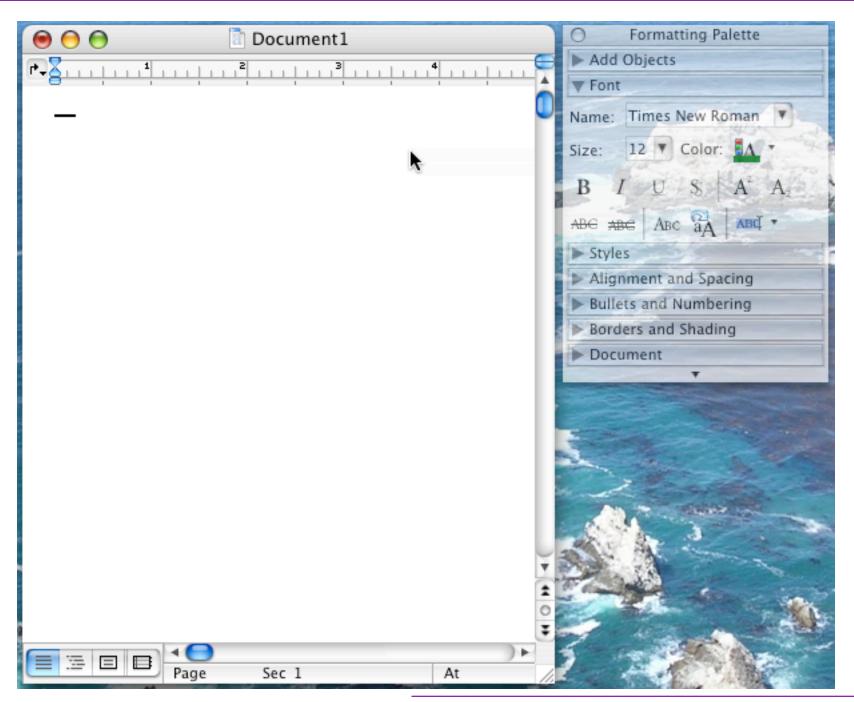
urban nylon sling \$34.50



urban nylon backpack \$29.50



nylon commuter bag \$68.00



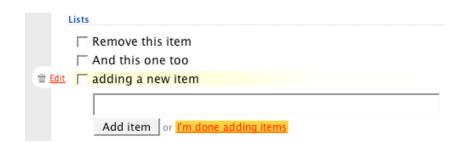




digg spy: a real-time view of digg

_	spy on	all stories	spy on queued stories	spy on front page stories	
What? Diggs		Diggs	Story		
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	(a)	+1399	How To Build a Game In A Week From Scratch With No http://www.gamedev.net/reference/articles/article2		
	(a)	+86	David Hahn - The kid who built a nuclear reactor i http://en.wikipedia.org/wiki/David_Hahn		
	(a)	+201	Another Apple Mac mini Dual Core 1.66GHz Review http://reviews.designtechnica.com/review3531.html		
	(a)	+85	David Hahn - The kid who built a nuclear reactor i http://en.wikipedia.org/wiki/David_Hahn		







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Starter Web Page

Publish basic information on a placeholder web page — until you're ready to upgrade to a full web site.

View a sample.

Domain Locking

Safeguard your domain from hijacking and unauthorized transfers with domain locking. Yahoo! Domains secures your domain for you — and only you.

Domain Forwarding

Point your new domain name to a web site you already have with domain forwarding. This is a useful feature if you own multiple domain names.

Complete Domain (DNS) Control

Advanced users: You can easily edit your name servers and MX, A, and CNAME records for complete control over your domain.

Email Forwarding

Unlimited forwarding of messages sent to your new domain name into your free Yahoo! email account.



Expand





- Brighten. Raise importance
- Cross Fade. One leaves, another enters
- Dim. Lower importance
- Expand. Open in context of others
- Fade In. Good for adds
- Fade Out. Good for deletes
- Flip. Edit configuration
- Animate. Change relationship, tweening
- Self-Healing. After delete or "yank"
- Collapse. Close in context of others
- Slide. Similar to expand but child window

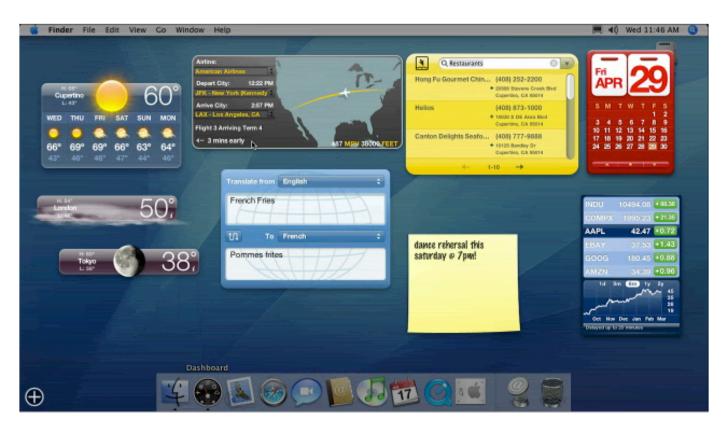


Transition. Brighten Transition.
Cross Fade Transition. Dim
Transition. Expand Transition.
Fade In Transition. Fade Out
Transition. Flip Transition.
Animate Transition. SelfHealing Transition. Collapse
Transition. Slide Transition.



Speak to the BRAIN

Understanding attention processing Sending the wrong message

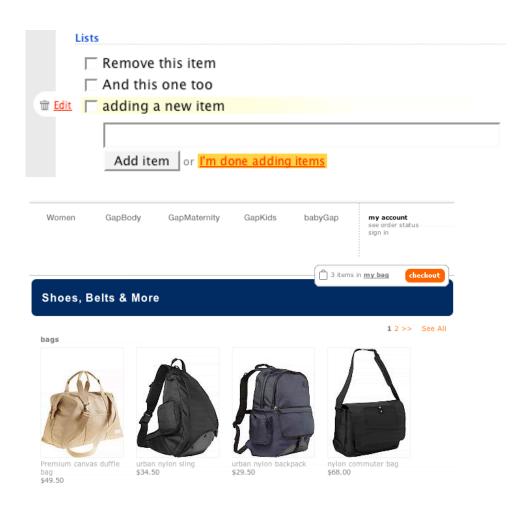






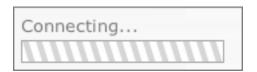
Speak to the BRAIN

Understanding attention processing Sending the wrong message



What you can communicate

Speed up time Slow down time Show state change Show relationships between objects





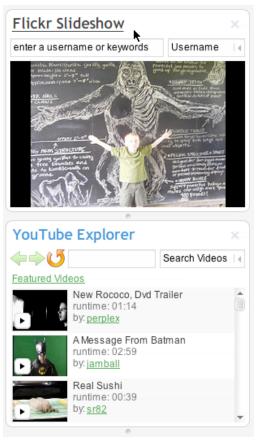




Speak to the BRAIN

Understanding attention processing Sending the wrong message





What you can communicate

Speed up time Slow down time Show state change Show relationships between objects

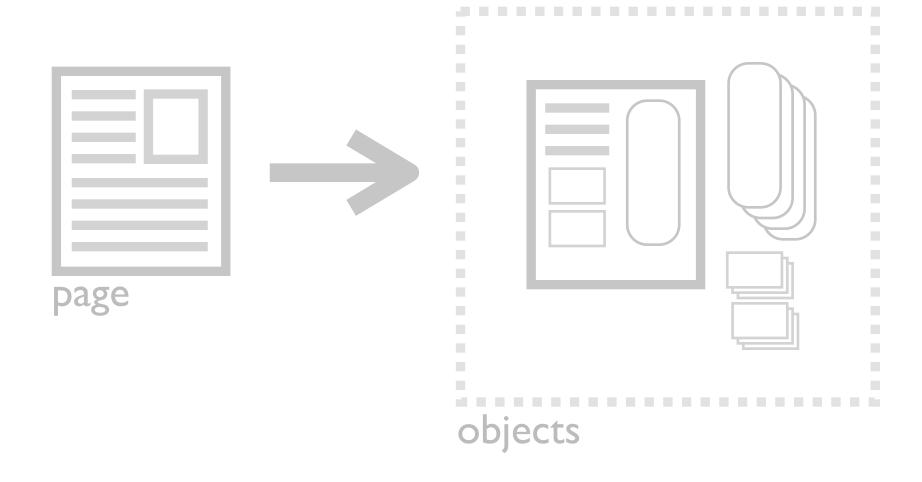
Keep it sane

"Cut in half" rule of thumb Use a "contrast knob" approach Don't overuse



- The more rapid the change the more important the event.
- Rapid movement is seen as more important than rapid color change.
- Movement toward the user is seen as more important than movement away from the user.
- Very slow change can be processed without disrupting the user's attention.
- Animation can be used to communicate where an object was and now is





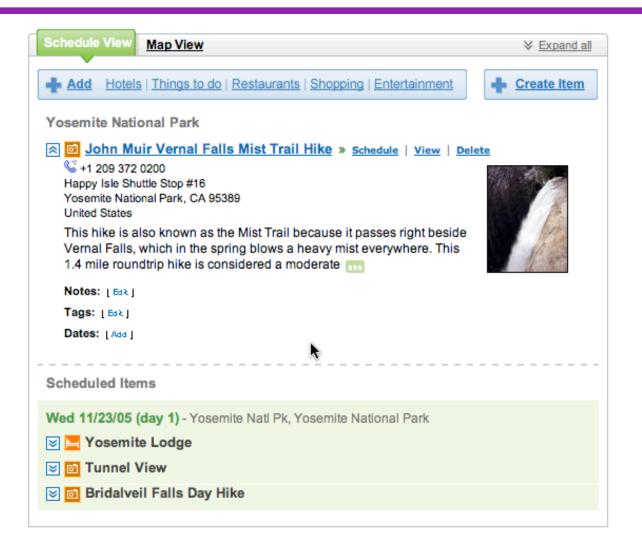


Think in objects



	Page-Based Web	Rich Internet App
Richer Model	Document	Rich Internet Object
Longer Lifecycle	Transient	Permanent
Community/ Sharing	Bookmark	Content, properties, and behaviors









Rich Internet Object. Available. Selected. Identifiable Object.



Rethinking the model

What is the user's mental model? How to distinguish from content?



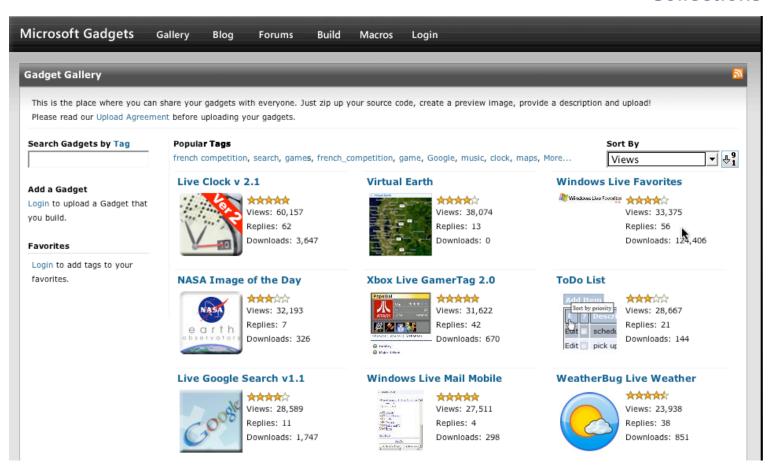


Rethinking the model

What is the user's mental model? How to distinguish from content?

The power of sharing

Bloggable, shareable, findable How to dial-in community Collections





Rethinking the model

What is the user's mental model? How to distinguish from content?



Web 2.0 as a platform

Rich objects fit the SOA model Creates a good separation of concerns Mashups

The power of sharing

Bloggable, shareable, findable How to dial-in community Collections







Questions?



