



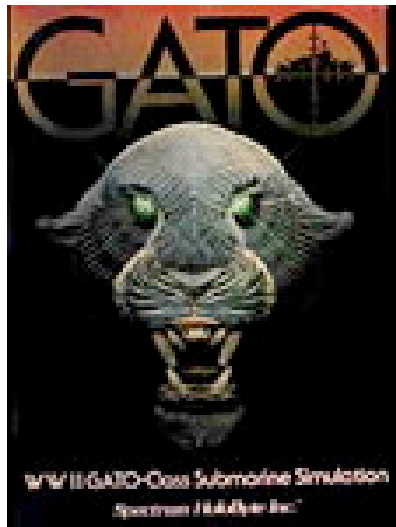
# Designing for Ajax

Principles and Patterns for Designing Rich Internet Applications

Bill W. Scott, Ajax Evangelist  
Yahoo!

2006 Federal Reserve System Developer Conference  
September 19-21, 2006

# Background



## Rico

### JavaScript for Rich Internet Applications

Home Features Demos Documentation Downloads About

An open-source JavaScript library for creating rich internet applications. Rico provides full Ajax support, drag and drop management and a cinematic effects library.

#### BACKGROUND

Rico is a Spanish word meaning *rich*. The goal of Rico is to provide a rich experience for web sites using Ajax technology.

Rico is just one small part of a larger effort at Sabre Airline Solutions to create a suite of rich internet components, behavior and effects for the web application space.

The library is a fully object-oriented JavaScript library. Recently we refactored the library to extend the excellent [prototype](#) library, an effort from the Ruby or Rails folks.

#### OPEN SOURCE

Rico is provided free and open-source ([Apache 2.0 License](#)) for either your personal or commercial use. Sabre Airline Solutions retains the copyright on the Rico code produced at Sabre.

#### BROWSER SUPPORT

Rico has been tested on IE 5.5, IE 6, Firefox 1.0a/Mac, Camino/Mac, Firefox 1.0a/Mac. Currently there is no Safari or Mac IE 5.2 support. Support will be provided in a near future release for Safari.

#### AJAX SUPPORT

Ajax is the term that describes a set of web development techniques for creating interactive web applications. One of the key ingredients is the JavaScript object XMLHttpRequest. Rico provides a very simple interface for registering Ajax request handlers as well as HTML elements or JavaScript objects as Ajax response objects. Multiple elements and/or objects may be updated as the result of one Ajax request.

Want to get started learning? Check out our [demos](#) and then read our two Ajax tutorials on the [Documentation page](#).

#### DRAW AND DROP

Desktop applications have long used drag and drop in their interfaces to simplify user interaction. Rico provides one of the simplest interfaces for enabling your web application to support drag and drop. Just register any HTML element or JavaScript object as a draggable and any other HTML element or JavaScript object as a drop zone and Rico handles the rest.

#### CINEMATIC EFFECTS

When actions are no longer occurring just at the page level but within the page itself, more clues are required to clue the user on what has transpired. Cinematic effects such as scaling and smooth sliding transitions can communicate changes in richer ways than traditional web applications have explored before. Rico provides several cinematic effects as well as some simple visual style effects in a very simple interface.

#### BEHAVIORS

Take some raw HTML and sprinkle in some behaviors and what do you get? Well in Rico you can get an [Accordion](#) component like those found in Macromedia Flex and Lasso. Just nest some DIVs and with one line of JavaScript turn your div panels into an accordion. And the latest behavior is the LiveGrid. LiveGrid allows you to connect an HTML table up to a stream of Ajax responses. Ajax requests are automatically called during table scrolling. The result is now HTML tables can hold an unlimited amount of data scrolled into view on the fly as needed! More behaviors are planned!

#### NEW! LiveGrid Behavior!

Check out the Alternative to Paging!

See Rico in Action!

Developer Network Home Help

Site Search Search

## YAHOO! DEVELOPER NETWORK

### Design Pattern Library

Yahoo! Developer Network > Design Pattern Library

#### USER NEEDS TO

- NAVIGATE
  - Breadcrumbs
  - Faceted Navigation
  - Fly-out Menus
  - Horizontal Bar
  - Hub and Spoke
  - Left Navigation
- Tabs
  - Module Tabs
  - Navigation Tabs
- EXPLORE DATA
  - Auto Complete
  - Calendar Picker
- Pagination
  - Item Pagination
  - Search Pagination
- ORGANIZE DATA
- GIVE FEEDBACK
  - Ratings & Reviews
    - Architecture Review
    - Rating an Object
    - Writing a Review
- PERFORM ACTION
- CUSTOMIZE
  - Drag and Drop
    - Drag and Drop Modules
    - Drag and Drop Objects
  - In Page Editing
  - Sliders

#### APPLICATION NEEDS TO

- CALL ATTENTION
- IMPROVE READABILITY
  - Ratings & Reviews
    - Review Architecture
- GROUP RELATED ITEMS
- ORGANIZE SCREEN/PAGE

#### Welcome

Welcome to the Yahoo! Design Pattern Library. We are very happy to be sharing our library with the design and development community. This is our first drop of what we hope to be a monthly release cycle for the publication of patterns. In many cases we have bundled the patterns with pointers to related code from the [Yahoo! User Interface Code Library](#). We hope this is a useful resource and look forward to your [feedback](#).

#### What's a Pattern?

A pattern describes an optimal solution to a common problem within a specific context. [more...](#)

#### Recent Patterns

##### Auto-Complete

The user needs to enter an item into a text box which could be ambiguous or hard to remember and therefore has the potential to be mis-typed.

##### Breadcrumbs

User needs to navigate potentially large quantities of information efficiently, without becoming lost.

##### Drag and Drop Modules

The user needs to re-arrange the layout of modules on a web page directly with the mouse.

##### Module Tabs

The user needs to navigate through one or more stacked panes of content without refreshing the page.

##### Navigation Tabs

The user needs to navigate through a site to locate content and features and have clear indication of their current location in the site.

##### Object Pagination

The user needs to view data items from a potentially large set of sorted data that will not be easy to display within a single page.

##### Results Page:

The user needs to view a set of search results ranked by relevance that is too large to easily display within a single page.

##### Rating an Object

A user wants to quickly leave their opinion on an object, with minimal interruption to any other task flow they are involved in.

##### Writing a Review

User wants to share her opinion with others about an object (place, person, thing) in greater detail than a simple rating.

DESIGNING FOR AJAX

2

Developer Network Home Help Site Search Search

## YAHOO! DEVELOPER NETWORK

### Design Pattern Library

Yahoo! Developer Network > Design Pattern Library

**USER NEEDS TO**

- NAVIGATE
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  - Faceted Navigation
  - Fly-out Menus
  - Horizontal Bar
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**APPLICATION NEEDS TO**

- CALL ATTENTION
- IMPROVE READABILITY
  - Ratings & Reviews
    - Review Architecture
- GROUP RELATED ITEMS
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**Welcome**  
Welcome to the Yahoo! Design Pattern Library with the design and development patterns we hope to be a monthly release. We have bundled the patterns with the Design Pattern Library. We hope this helps you.

**What's a Pattern?**  
A pattern describes an optimal solution to a common problem.

**Recent Patterns**

**Auto-Complete**  
The user needs to enter an item into a text box which could be ambiguous or hard to remember and therefore has the potential to be mis-typed.

**Module Tabs**  
The user needs to navigate through one or more stacked panes of content without refreshing the page.

**Results Page:**  
1 2 3 4 > **Next**

**Search Pagination**  
The user needs to view a set of search results ranked by relevance that is too large to easily display within a single page.

**Rating an Object**  
A user wants to quickly leave their opinion on an object, with minimal interruption to any other task flow they are involved in.

**Writing a Review**  
User wants to share their opinion with others about an object (place, person, thing) in greater detail than a simple rating.

Developer Network Home Help Site Search Search

## YAHOO! DEVELOPER NETWORK

### Design Pattern Library

Yahoo! Developer Network > Design Pattern Library > Ratings and Reviews

**USER NEEDS TO**

- NAVIGATE
  - Breadcrumbs
  - Faceted Navigation
  - Fly-out Menus
  - Horizontal Bar
  - Hub and Spoke
  - Left Navigation
  - Tabs
    - Module Tabs
    - Navigation Tabs
- EXPLORE DATA
  - Auto Complete
  - Calendar Picker
  - Pagination
    - Item Pagination
    - Search Pagination
- ORGANIZE DATA
- GIVE FEEDBACK

**Ratings and Reviews**

**Problem Summary**  
User wants to leave an opinion or evaluation. Quick opinions can be captured using Reviews.

**Solution Patterns**

**Architecture of a Review**  
A product or website needs to present ratings and reviews with a variety of informational elements.

**Rating an Object**  
A user wants to leave their opinion on an object, with minimal interruption to any other task flow they are involved in.

**Review Title** - e.g. "We can't live without it!"

**Write your review** - Your review

Developer Network Home Help Site Search Search

## YAHOO! DEVELOPER NETWORK

### Design Pattern Library

Yahoo! Developer Network > Design Pattern Library > Ratings and Reviews > Rating An Object

**Rating An Object**

**Problem Summary**  
A user wants to quickly leave their opinion on an object, with minimal interruption to any other task flow they are involved in.

**EXAMPLE:**

**Restaurant**  
Alma St  
Menlo Park, CA 94025  
Cross Street:  
Between Alma Ln and Ravenswood Ave

Average Rating (7)  
Read 7 reviews  
Average  
Write a Review  
Play

Rate a restaurant on [Yahoo! Local](#)

**Use When**

- A user wants to leave an opinion quickly.
- Use in combination with reviews for richer experience.
- Use to quickly tap into the existing "community" of a product.
- Ratings are collected together to present an average rating of an object from the collective user set.

**Solution**

- Show clickable items (most often used are stars) that light up on rollover to infer clickability.

**QUICK JUMP**

- [Solution](#)
- [Rationale](#)
- [Accessibility](#)

**RELATED PATTERNS**

- [Ratings and Reviews](#)
- [Architecture of a Review](#)
- [Writing a Review](#)

**AS USED ON YAHOO!**

- [Yahoo! Local](#)
- [Yahoo! Shopping](#)
- [Yahoo! Custom Autos](#)
- [Yahoo! Movies](#)

**BLOG**

- [Blog Article](#)

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surfacing a vocabulary.



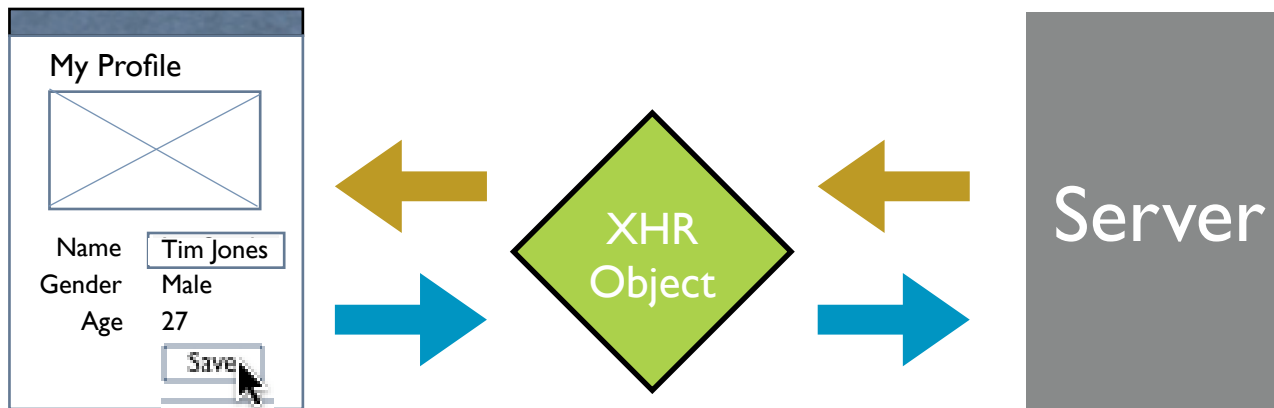
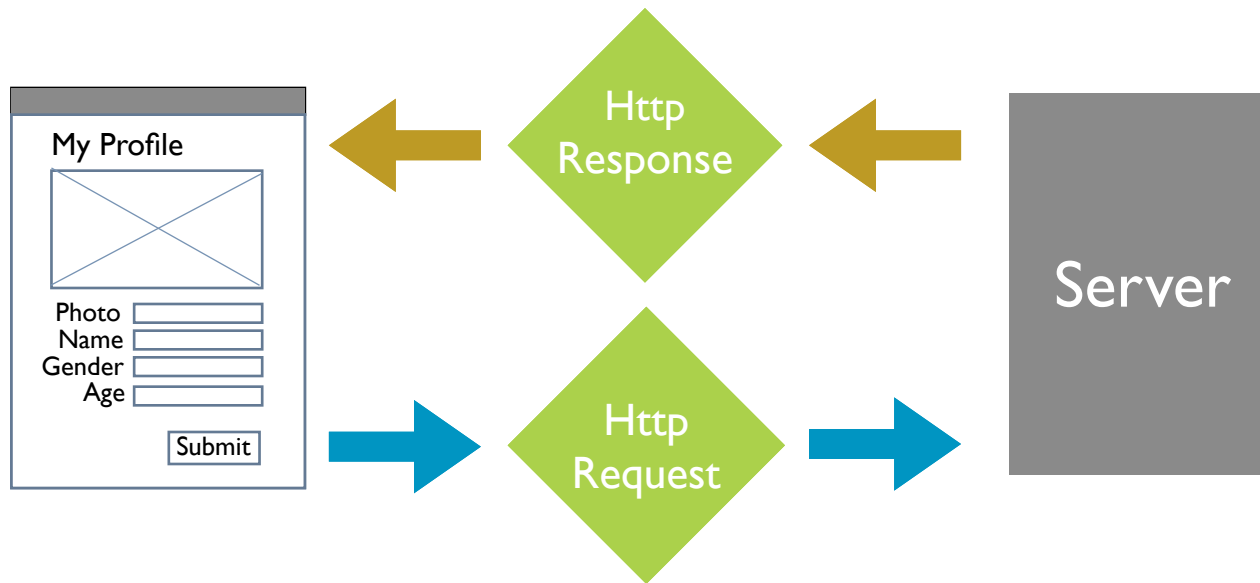
current patterns.

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.

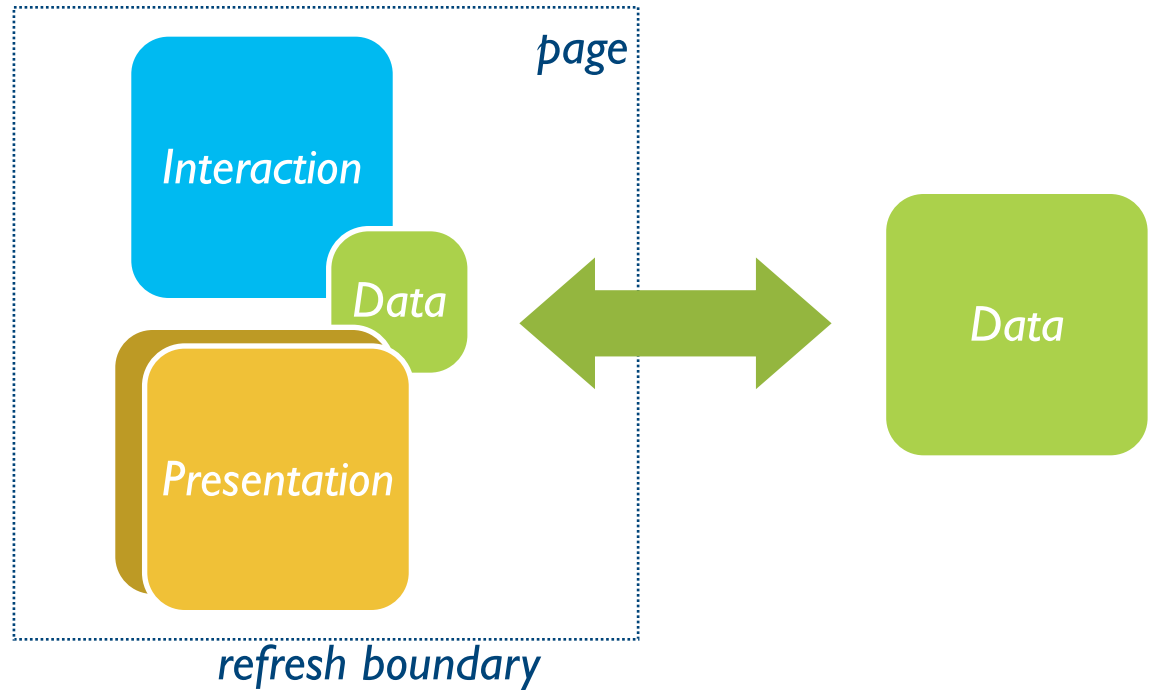
# rich patterns.

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. 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.

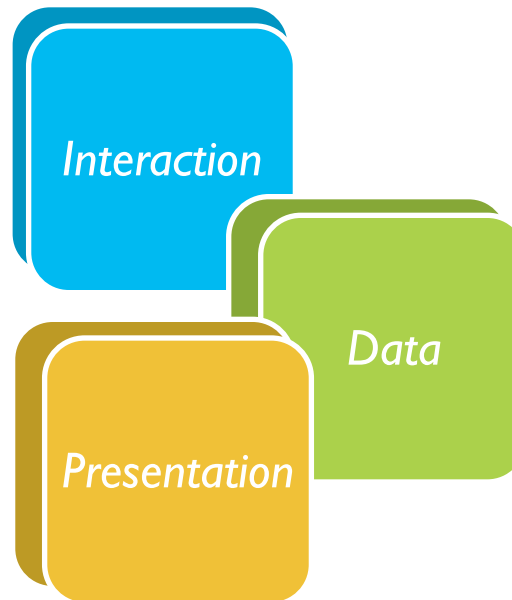
# classic model. rich model.



interaction. presentation. data.



data near. interaction rich.





# design principles



# Principles for Rich Design

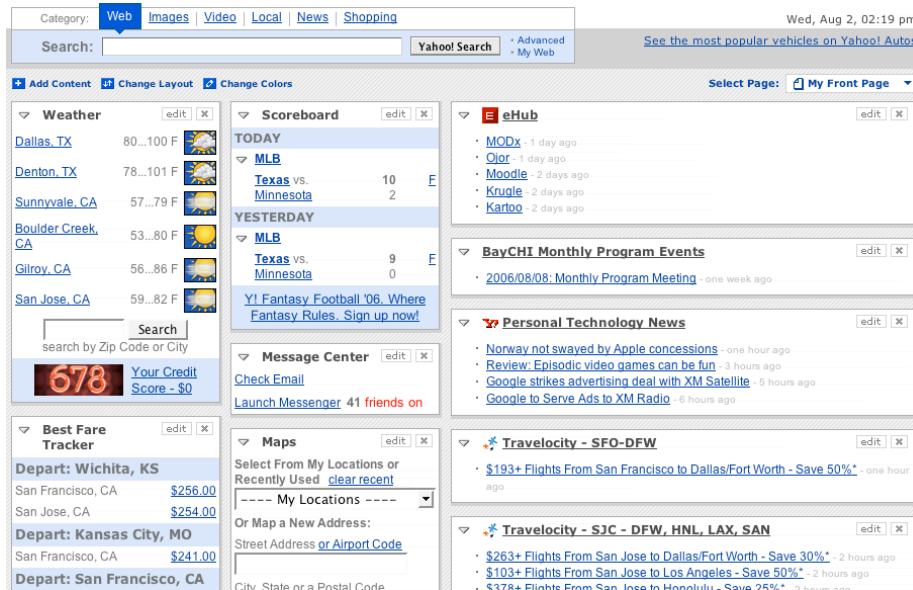
1. Keep it direct
2. Leave a light footprint
3. Cross borders reluctantly
4. Provide live feedback
5. Offer an invitation
6. Show transitions
7. Think in objects



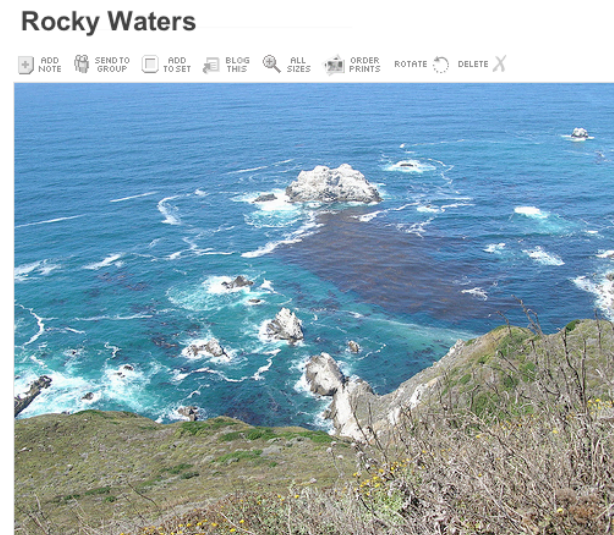
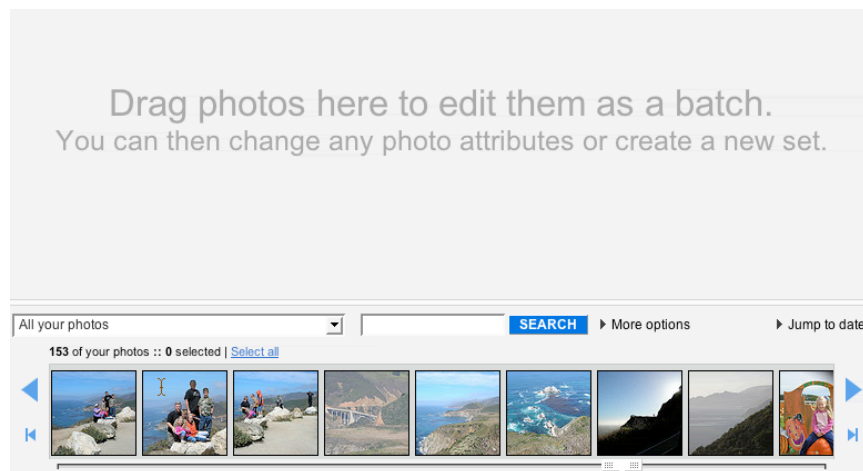
# Keep it Direct

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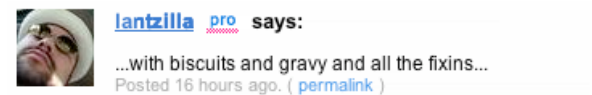
# Principle. Keep it Direct



pattern. drag and drop.



pattern. inline editing.



Add your comment

pattern. in-context tools.

## Prefer interaction within the page

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.



## Prefer interaction within the page

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)

**SAVE** OR CANCEL

## Prefer interaction within the page

What about discoverability?

**Pick Up at the Store**


- ☐ Milk
- ☐ Orange Juice
- ☐ Tomatoes
- ☐ Lettuce
- ☐ Bread
- ☐ Chips

[Add Item](#)

[Make a new list](#) [Reorder lists](#)

[Remove from sidebar](#), [Delete this page](#), [Email me this page](#)

✉ Send email to this page: [miles12betty@billwscott.backpackit.cc](mailto:miles12betty@billwscott.backpackit.cc)

 [Changes](#) [Help](#) [Text Formatting](#) [Weblog](#) [Forum](#) [Privacy](#)


## 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

 [Edit](#) ☐ Account for experimental patterns as well as established patterns

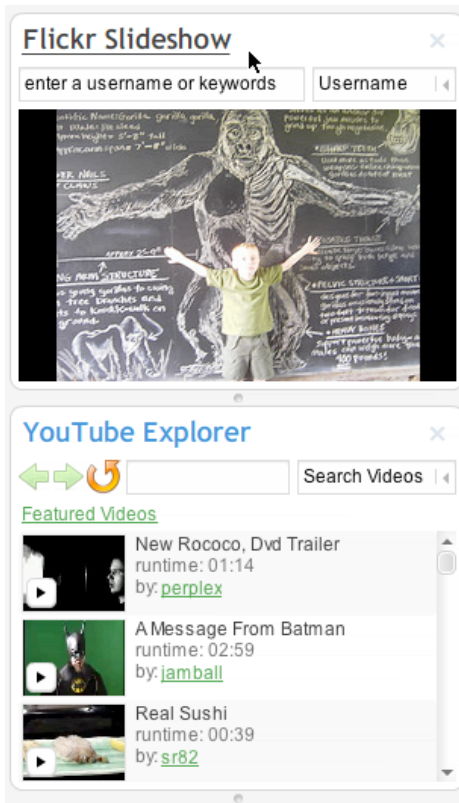
## Provide in-context tools

Only good for single operations

Can actually slow you down

## Prefer interaction within the page

What about discoverability?



### Pick Up at the Store

- ☐ DRAG Chips
- ☐ DRAG Milk
- ☐ DRAG Bread
- ☐ DRAG Orange Juice2
- ☐ 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.

## Provide in-context tools

Only good for single operations

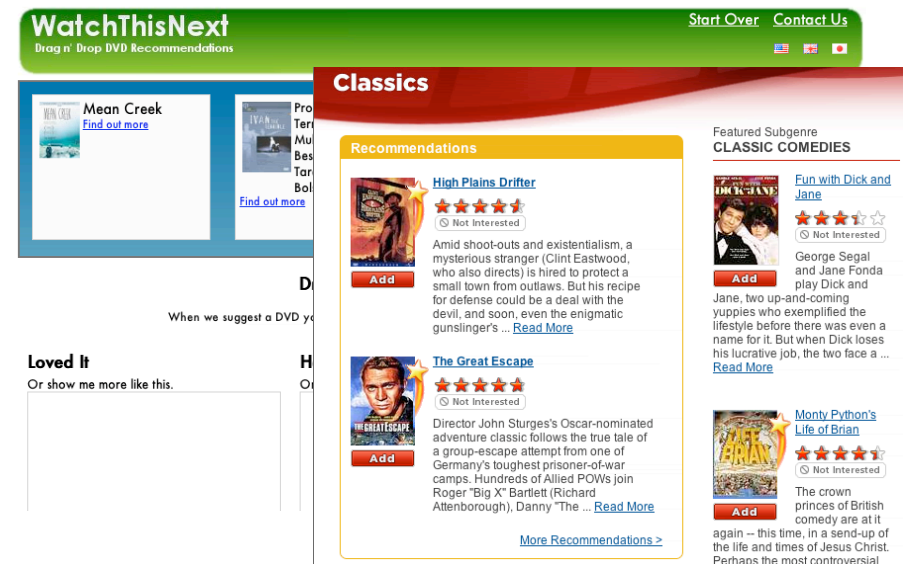
Can actually slow you down

## Use direct editing on page content

What about save/cancel?

Avoid page jitter

Reduce the feeling of modes



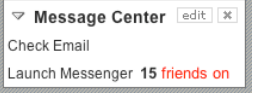
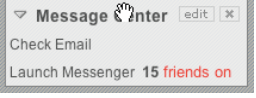
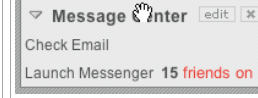

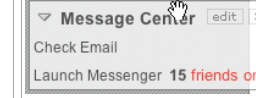
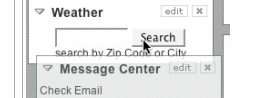
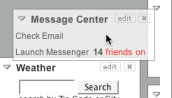
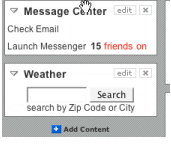
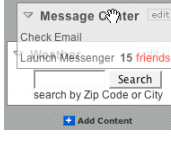
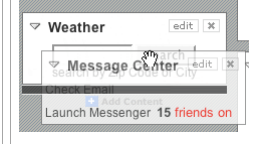
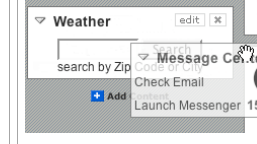
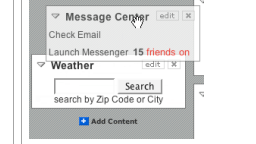
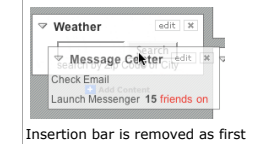
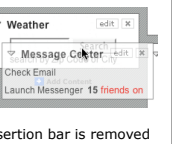
## Use drag and drop where appropriate

Not for simply setting an attribute

Good for layout changes or containment

Needs transitions

## Take care of the interesting moments

Drag and Drop Modules - Interesting Moments Grid							
Currently on beta.my.yahoo.com		ID: Bill Scott & Eric Miraglia		Date: Nov-05			
	Mouse Hover	Mouse Down	Drag Initiated	Drag Over Valid Target	Drag Over Invalid Target	Drag Over Parent Container	Drop Accepted
Cursor	Hand cursor	Hand cursor	Hand cursor	Hand cursor	Hand cursor	Hand cursor	Normal Cursor
Tool Tip	CSS Move cursor	CSS Move cursor	CSS Move cursor	CSS Move cursor	CSS Move cursor	CSS Move cursor	Normal Cursor
Drag Object	 <p>Full Opacity</p>	 <p>Reduced Opacity</p>	 <p>Reduced Opacity</p>	 <p>Reduced Opacity &amp; Invalid Badge</p>	 <p>Reduced Opacity</p>	 <p>Modules animates into the area just below insertion bar</p>	 <p>Modules animates back to the home area</p>
Drop Target	 <p>No insertion bar, just a gap</p>	 <p>No insertion bar, just a gap</p>	 <p>Insertion bar showing where it will drop</p>	 <p>No insertion bar, just a gap</p>	 <p>No insertion bar, just a gap &amp; original hole frame of animation</p>	 <p>Insertion bar is removed as first frame of animation</p>	 <p>Insertion bar is removed as first frame of animation</p>

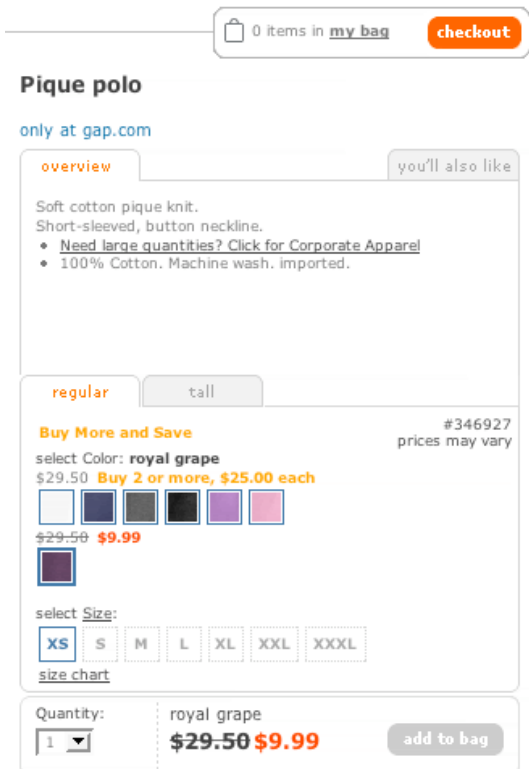


## 2

# Leave a light footprint

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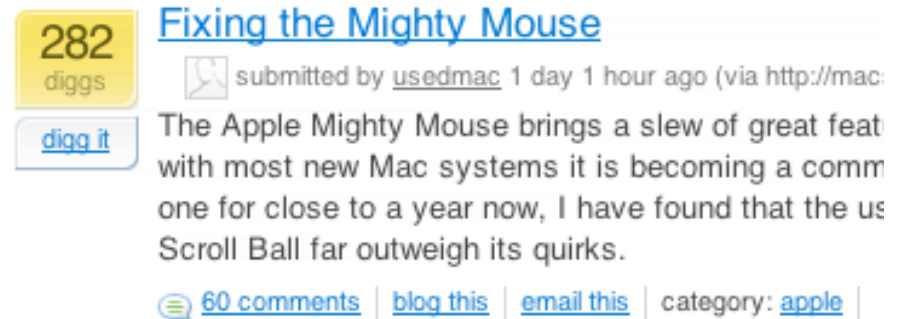
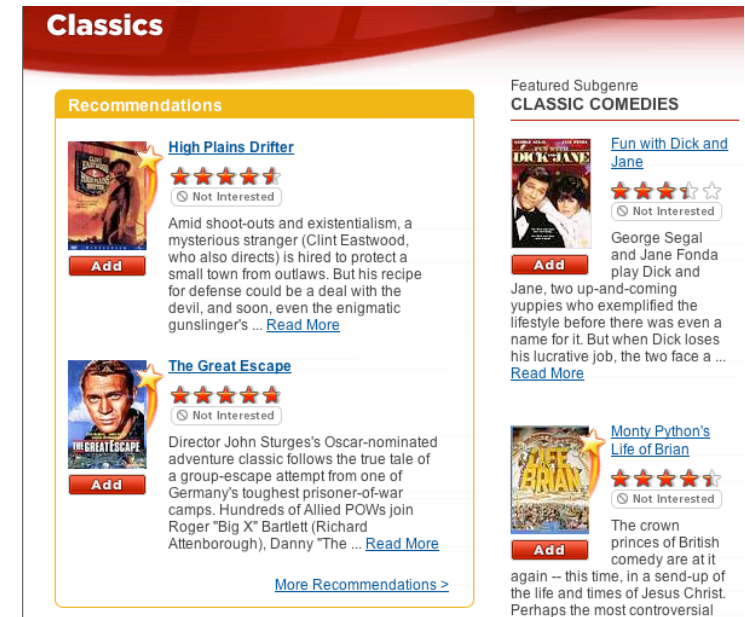




pattern. remembered collection.



pattern. rating an object.




pattern. in page action.

# Watch your click weight

Keep actions immediate and light  
Count “clicks”

## Classics

### Recommendations




**High Plains Drifter**

★★★★★

Not Interested

Amid shoot-outs and existentialism, a mysterious stranger (Clint Eastwood, who also directs) is hired to protect a small town from outlaws. But his recipe for defense could be a deal with the devil, and soon, even the enigmatic gunslinger's ... [Read More](#)

Add



**The Great Escape**

★★★★★


Not Interested

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](#)

Add

[More Recommendations >](#)

Featured Subgenre  
**CLASSIC COMEDIES**




**Fun with Dick and Jane**

★★★★★

Not Interested

George Segal and Jane Fonda play Dick and Jane, two up-and-coming yuppies who exemplified the lifestyle before there was even a name for it. But when Dick loses his lucrative job, the two face a ... [Read More](#)

Add



**Monty Python's Life of Brian**

★★★★★

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

Add

282  
diggs

[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 quirks.

 [60 comments](#) | [blog this](#) | [email this](#) | category: [apple](#) |

## Watch your click weight

Keep actions immediate and light  
Count "clicks"

## Design for engaging moments

Use invitations

Keep it fun, exciting and light

Treat it like an impulse aisle

**The Critics:**  
**B-**  
[14 reviews](#)

**My Grade:**  
**Rate this**  
**Movie!**  
 Select grade  
 to the right  
[write a review](#)

**Yahoo! Users:**  
**B+**  
[13199 ratings](#)

**A**  
**B**  
**C**  
**D**  
**F**



## Watch your click weight

Keep actions immediate and light  
Count “clicks”

## Design for engaging moments

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

### RECOMMEND THIS STORY

Recommend It:



Average (63 votes)



## Use lightweight events

Hover

Blur, focus

Click. Avoid double-click



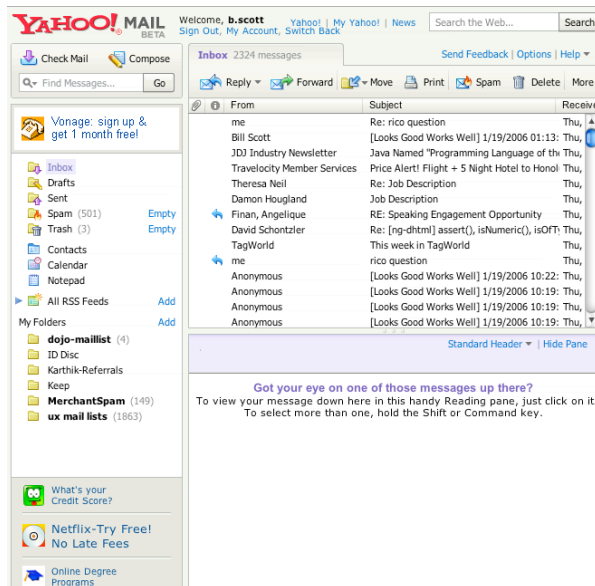
# 3

## Cross borders reluctantly

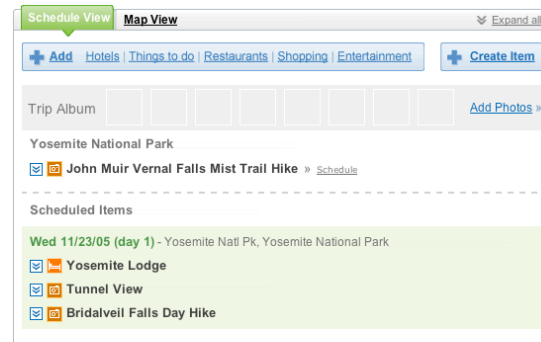
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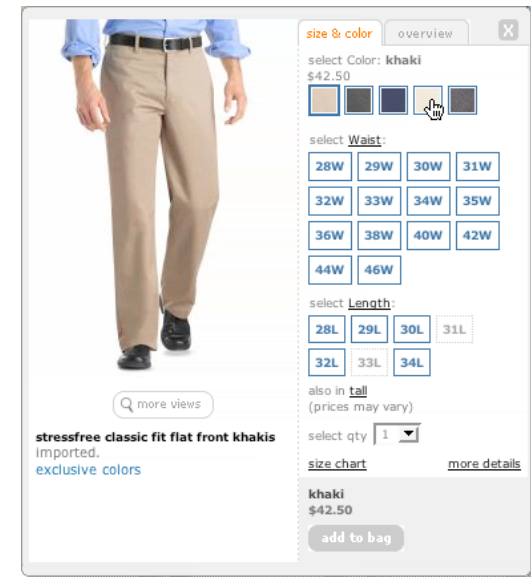
# Principle. **Cross Borders Reluctantly**



pattern. **endless scrolling.**



pattern. **in-context expand.**

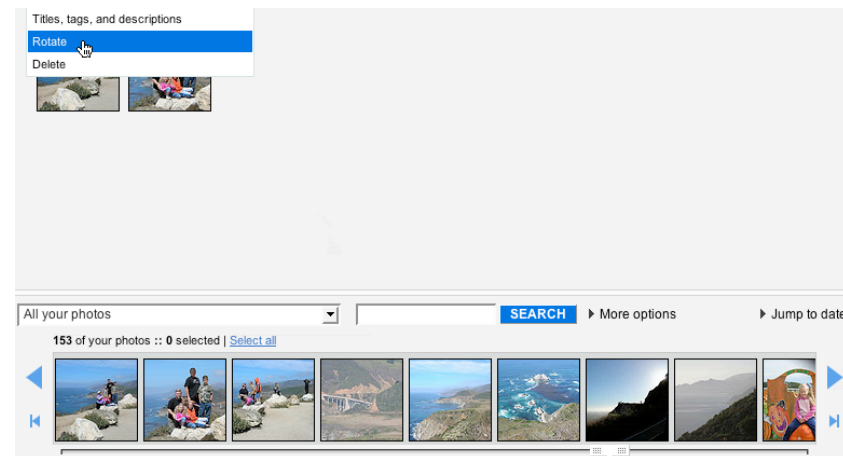


pattern. **inline assistant.**

## Top Stories



pattern. **hover details.**

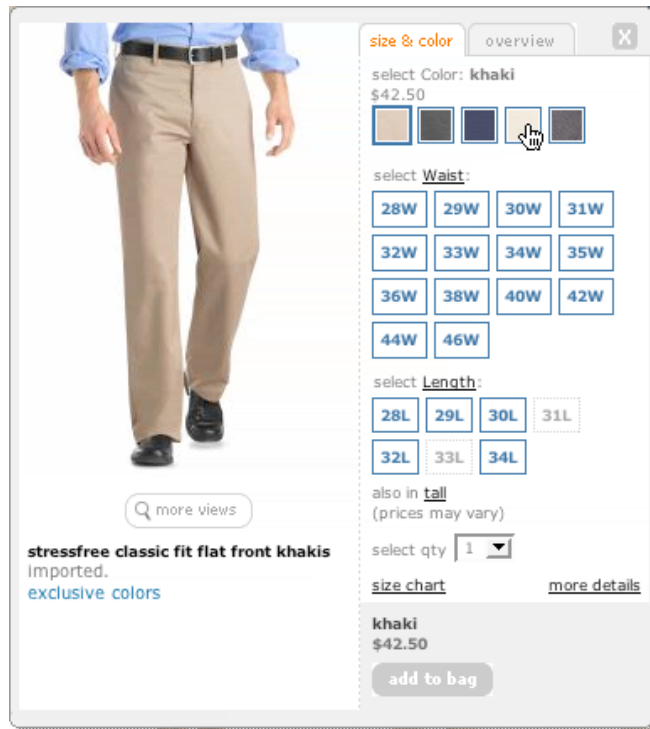


pattern. **lightweight popup + lightbox**

## Rethink process flows

Its the user's model, not the page model

Every page jump is a mental speed bump





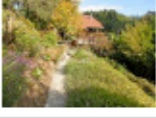



## Rethink process flows

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

Photo Click for info	Price	Bd/Ba Sq Ft	Address and Area Presented By	MLS # (Click for info)	More Photos (Click for info)	Virtual Tours (Click for info)
	\$1,750,000 Single Res	6+, 4+ 3700	14080 BEAR CREEK RD Boulder Creek, CA 95006 (San Lore Valley) Schwarzbach Associates			
	\$1,995,000 Single Res	6+, 4+ 5675	17617 MOUNTAIN CHARLIE RD LOS GATOS, CA 95033 (Unincorporated Los Gatos Mtns) Almaden Oaks Realtors			
	\$2,286,000 Single Res	5, 4+ 4800	20930 PANORAMA DR Los Gatos, CA 95033 (Los Gatos Mtns) Alain Pinel Realtors			
	\$2,750,000 Single Res	5, 4+ 5000	155 LARITA DR Ben Lomond, CA 95005 (San Lore Valley) Network Alliance Real Estate			
	\$2,777,000 Single Res	5, 4+ 5819	777 HAPPY VALLEY RD Scotts Valley, CA 95065 (Scotts Valley) Linda Burroughs Real Estate			




LiveGrid Demonstration

Powered by Yahoo! Search


Select Search Category: Web **Images** Videos

Search Images:


Search Results Results 1 - 5 of about 1580284 for flowers




**flowers 025**  
flowers021.jpg 110k 29Feb2004 flowers022.jpg 783k 29Feb2004 flowers023.jpg 186k  
http://wp.li.ru/flowers  
1024x768 - jpeg fmt - 0.3MB




**flowers 063**  
flowers059.jpg 122k 29Feb2004 flowers060.jpg 134k 29Feb2004 flowers061.jpg 120k  
http://wp.li.ru/flowers  
1024x768 - jpeg fmt - 0.1MB



**flowers 045**  
flowers041.jpg 277k 29Feb2004 flowers042.jpg 125k 29Feb2004 flowers043.jpg 744k  
http://wp.li.ru/flowers  
1024x768 - jpeg fmt - 0.1MB



**flowers 076**  
flowers072.jpg 820k 29Feb2004 flowers073.jpg 160k 29Feb2004 flowers074.jpg 120k  
http://wp.li.ru/flowers  
1024x768 - jpeg fmt - 0.1MB



**flowers 019**  
flowers015.jpg 781k 29Feb2004 flowers016.jpg 455k 29Feb2004 flowers017.jpg 143k  
http://wp.li.ru/flowers  
1024x768 - jpeg fmt - 0.3MB

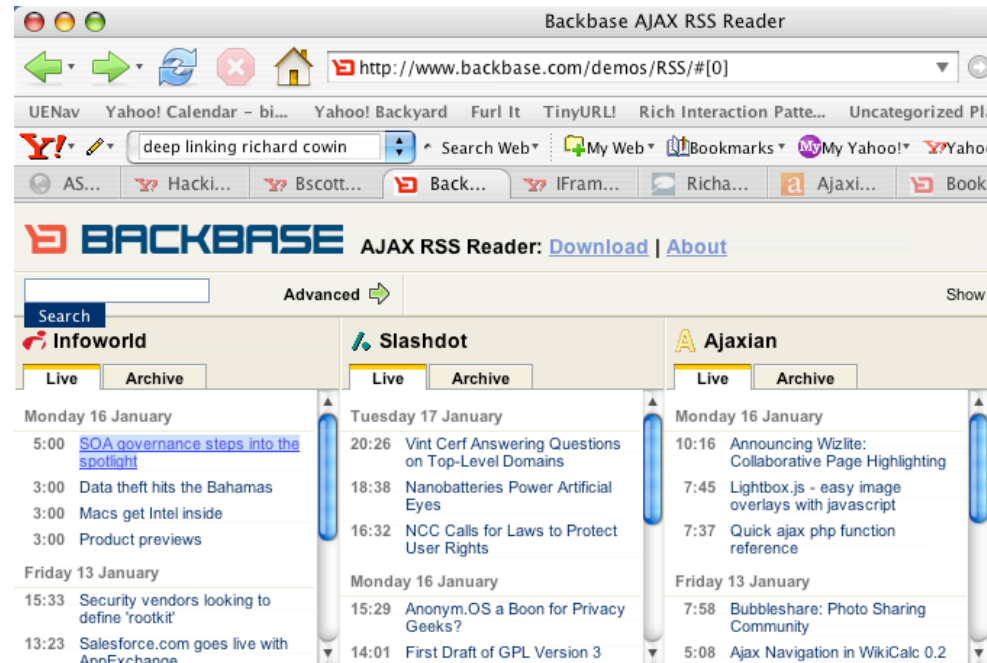
New Search

<< Pre

## 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?

## 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**

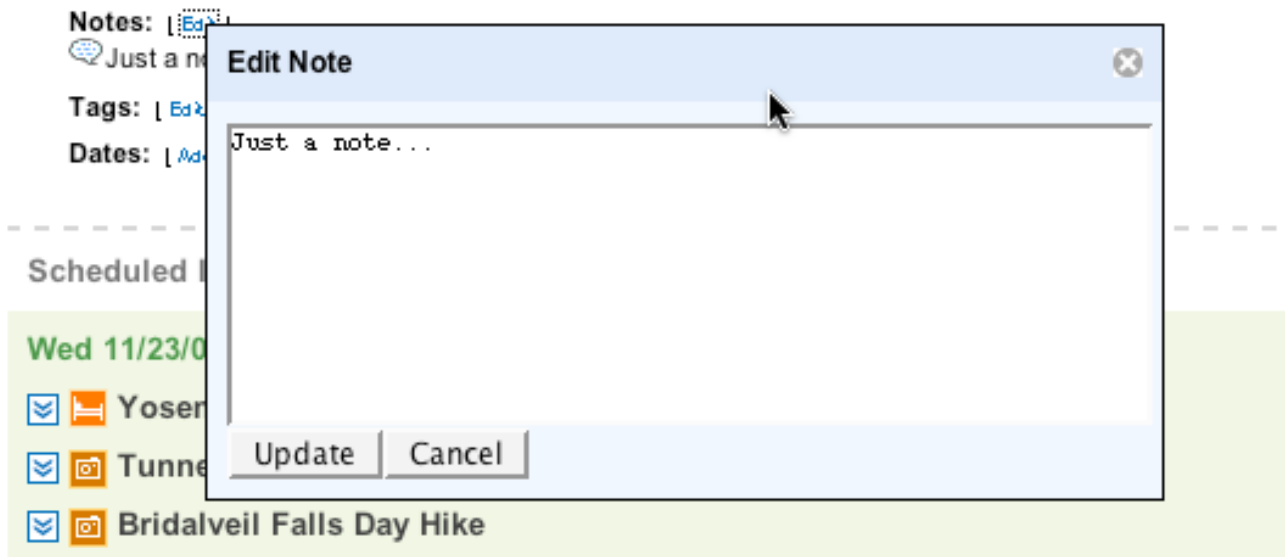
Point your new domain name to a web site you already have with [domain forwarding](#). This is a useful feature if you own multiple domain names.

- **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 [forwarding](#) 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

## Use in-context expands

For editing part of a collection

Need to see surrounding context

For managing content modules

### Wired News: Top Stories [edit](#)

[Christians Code Heavenly Games](#)

[Cloning the Best in Show](#)

[Brain Workouts May Tone Memory](#)

### Movies [edit](#)

[Showtimes for 76208 »](#)

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

Featured

Entertainment

Sports

Money



### Animal cams gone wild

Webcams that view pandas in action are perpetually popular, while live eagle cams are taking flight. [» More](#)

[Panda pics](#) [Webcams](#)

• More Yahoo! Buzz Log



Celebrity spirits haunt Hollywood hot spots



The wild world of animal webcams



San Jose Sharks fans should be booed



Four-day rain swamps New England

[» More Featured](#)

Schedule View

Map View

Expand all

[+ Add](#)
[Hotels](#)
[Things to do](#)
[Restaurants](#)
[Shopping](#)
[Entertainment](#)
[+ Create Item](#)

Trip Album
[Add Photos »](#)

Yosemite National Park

☒ [John Muir Vernal Falls Mist Trail Hike](#) [» Schedule](#)

---

Scheduled Items

Wed 11/23/05 (day 1) - Yosemite Natl Pk, Yosemite National Park

Hi, **b.scott**
[Sign Out](#)

[Mail](#)

[Messenger](#)

[Radio](#)

From	Subject	Date
<b>Bill Scott</b>	test	May 15, 2006
<b>Kirk Vorsatz</b>	Contact Info f...	May 15, 2006
Nate Koechley	RSVP, Attendi...	May 15, 2006
<b>PayPal</b>	PayPal Securi...	May 15, 2006

[» View All Mail](#)

**Weather**  
59° - 88°

**Local**

**Movies**

*Prefer direct, lightweight,  
in-page interaction.*





# 4

## Provide live feedback

---



## Ask Your Question

### 1. 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 guidelines](#).








You have 1000 characters to work with.

pattern. live suggest.

To:  [Show BCC](#)

Cc:

Subject:  [Plain Text](#)

Times New Roman 12 **B** *I* U       

pattern. auto complete.

## Find Athletes and Countries

### Medal Count

PRESENTED BY  
 CHEVROLET

				TOTAL
 GERMANY	11	12	6	29
 UNITED STATES	9	9	7	25
 CANADA	7	10	7	24
 AUSTRIA	9	7	7	23
 RUSSIA	8	6	8	22

[» Full Medal Count](#)

[+ MY YAHOO!](#)

[RSS](#)

# Keep the goal in mind


## Design for immediacy

### Is it narrowing or is it distracting

#### Most Popular

Most Emailed | Most Viewed | Most Recommended | My Sources

- Lonely elephants, edgy apes baffled by post-Katrina life at zoo Knight Ridder - Sun Oct 16, 4:40 PM ET
- Scientists Study Gorilla
- Inflation Soars Higher
- Rick Springfield's Soa
- Feds Want Banks to S
- » All Most Emailed



NEW ORLEANS - An AWOL alligator has resurfaced, elephants are forlorn and apes are agitated at Audubon Zoo, one of the nation's most renowned animal sanctuaries, left by Hurricane Katrina both broken and broke.

#### World

Just-in-time data

Crew ID	Last Name	First Name
400922	Peterson	Shelley
349294	Craft	Adrian
432939	Douglas	Elyne
468370	Hill	Petra
999380	Barnes	James
344935	Smith	James
139204	Miller	Gordon

S	M	T	W	T	F	S
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Just-in-time logic

YAHOO! PLUS SEARCH

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
- dmv

Google<sup>TM</sup>  
Suggest **BETA**

Web [Images](#) [Groups](#) [News](#) [Froogle](#) [Local](#) [more »](#)

Google Search I'm Feeling Lucky

pe, Google will offer suggestions. Use the arrow keys to navigate the results. [L](#)

[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

The screenshot shows the alltheweb search engine interface. The search bar contains the text 'monterrey'. Below the search bar, there is a list of suggestions: 'monterrey', 'monterrey mexico', 'monterrey nl mexico', 'arena monterrey', 'tec de monterrey', 'tecnologico de monterrey', 'monterrey nuevo leon', 'monterrey mexico map', 'universidad de monterrey', and 'cablevision monterrey'. The search results are displayed in a grid format. The first result is 'Save on Monterrey Hotels at Expedia.com'. The second result is 'Monterrey Vacations with Travelocity'. The third result is 'News Results for monterrey'. The fourth result is 'Monterrey - Wikipedia, the free encyclopedia'. The fifth result is 'International Conference on Financing for Development-2003-main'. The interface also includes a sidebar with 'Options', 'Go to...', and 'Help' links, and a 'Refine Search' button. The footer contains 'Tell a Friend' and 'Feedback' links.

alltheweb  
livesearch

Options Go to... Help

monterrey

monterrey mexico

monterrey nl mexico

arena monterrey

tec de monterrey

tecnologico de monterrey

monterrey nuevo leon

monterrey mexico map

universidad de monterrey

cablevision monterrey

Refine Search

Tell a Friend

Feedback

Results 1 - 10 of about 8,620,000 for **monterrey** [\(About this page\)](#)

Did you mean: [monterrey](#)

SPONSOR RESULTS

[Save on Monterrey Hotels at Expedia.com](#)  
www.expedia.com Save up to 50% on Monterrey hotels at Expedia.com, your one-stop...

[Monterrey Vacations with Travelocity](#)  
www.travelocity.com Get access to special Monterrey rates when you book your flight and...

[News Results for monterrey](#)  
FC Dallas [traveling roster to Monterrey](#) - OurSports Central - Jul 24 6:16 PM  
[Yahoo! Shortcut](#) - [About](#)

**Yahoo!':** Seeing bad search results or ads for this query? [Report them](#). Bucket test: **NONE**

[All About Monterrey](#)  
City guide includes information about hotels, restaurants, nightlife, entertainment, maps, and more. ... **Monterrey** is a unique city which is often called the richest city in México. **Monterrey** is also a powerhouse in the business ...  
[www.allaboutmonterrey.com](#)

[Monterrey - Wikipedia, the free encyclopedia](#)  
**Monterrey** is the capital city of the northeastern Mexican state of Nuevo León and the municipal seat of the municipality of the same name. ... The divided highway **Monterrey-Saltito-Matehuala-Mexico City** is the main land ... Nuevo Laredo-Mexico City, **Monterrey-Tampico**, and **Monterrey-Pacific (Mazatlán)**. Passenger trains ...  
Quick Links: [Geography](#) - [Government, Transportation, and Public Safety](#) - [Industry and business](#)  
[en.wikipedia.org/wiki/Monterrey](#)

[International Conference on Financing for Development-2003-main](#)

SPONSOR RESULTS

[Monterrey - Weichert](#)  
View Color photos, Virtual Tours and Thousands of Open Houses.  
[weichert.com](#)

[See your message here...](#)

## Keep the goal in mind

Design for immediacy

Is it narrowing or is it distracting

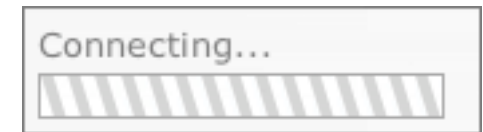
Use feedback to boost confidence

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.    
(ex. widgetdesigns.com)

Search

### Required information for Google account

Your current email address:    
e.g. myname@example.com. This will be your username and sign-in.

Choose a password:    
Minimum 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

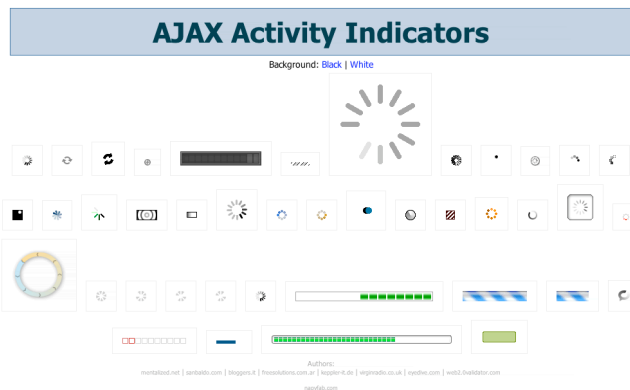
Use feedback to boost confidence

Let the user iterate where possible

## Keep the user engaged

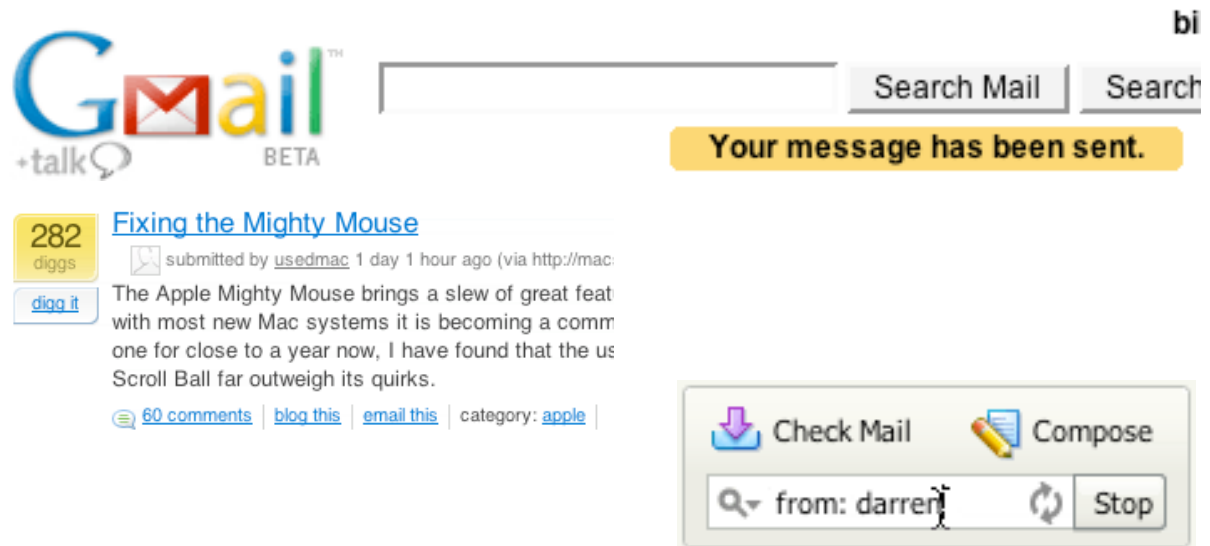
Time passes faster

Look for engaging moments



## 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

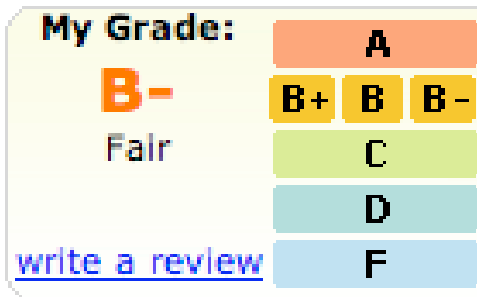
Avoid creating feedback noise/jitter



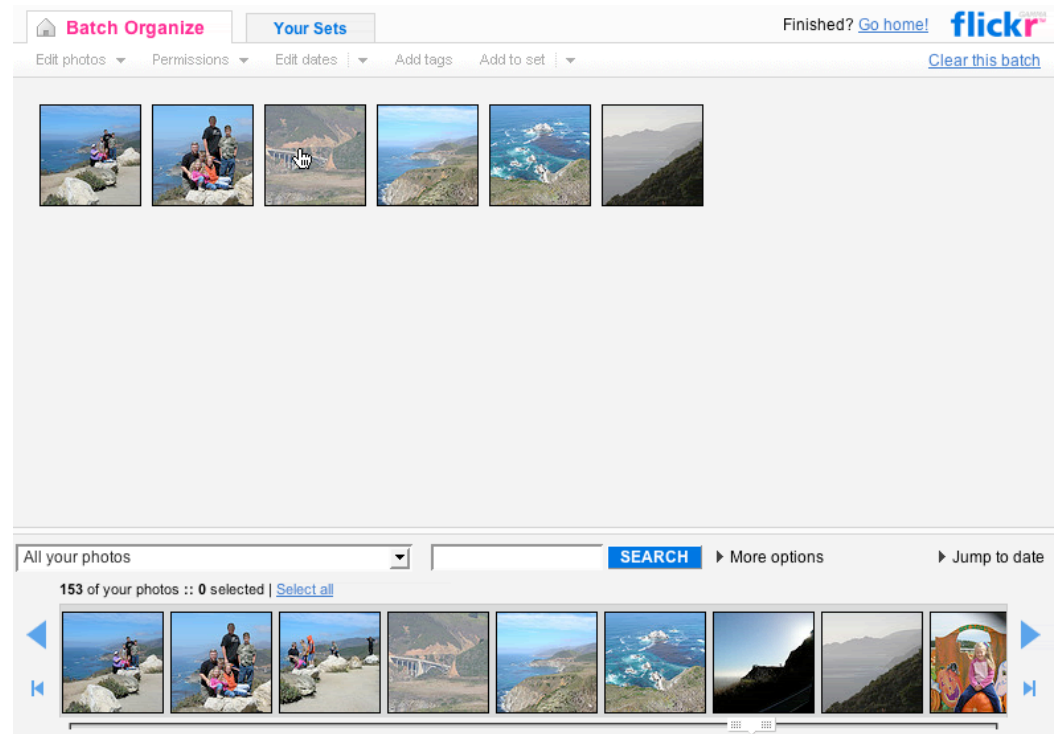
# 5

## Offer an invitation

---



pattern. **hover invitation.**



pattern. **drop invitation.**

## Park near our new home



pattern. **tooltip invitation + hover invitation.**



## Make it engaging

Use lightweight events as a welcome mat

Rediscover the hover

My Grade:

A		
B+	B	B-
C		
D		
F		

B- Fair

[write a review](#)

### Lists

☐ Remove this item

Add item or I'm done adding items

[Make a new list](#)

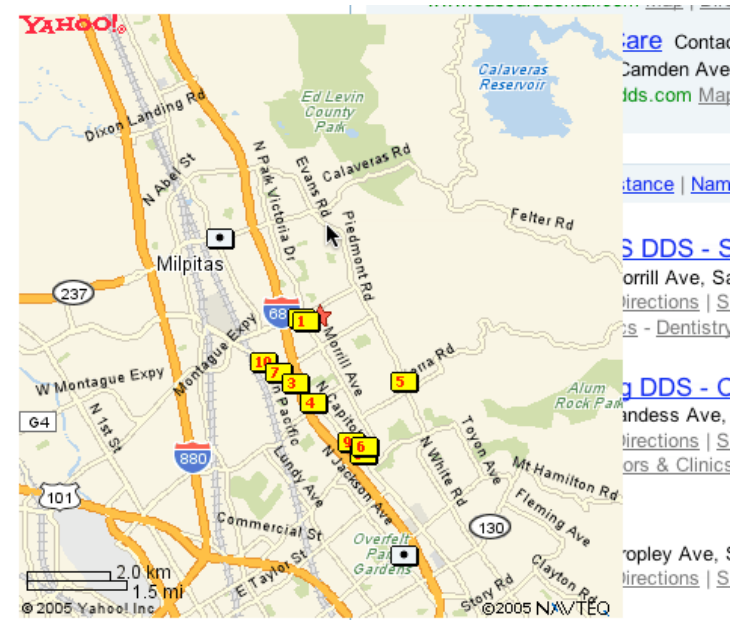
## Make it engaging

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



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. [Click here](#) for answers to questions you might have about the beta program.

## Make it engaging

Use lightweight events as a welcome mat  
Rediscover the hover

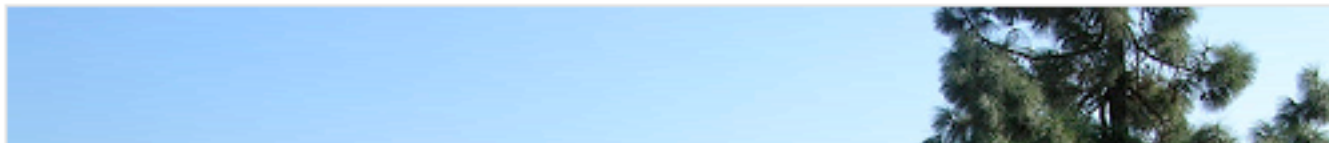
## Keep actions out of it

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

---

### Park near our new home

 ADD NOTE  SEND TO GROUP  ADD TO SET  BLOG THIS  ALL SIZES  ORDER PRINTS  ROTATE  DELETE 



## Get the actors involved

Hover Invitation

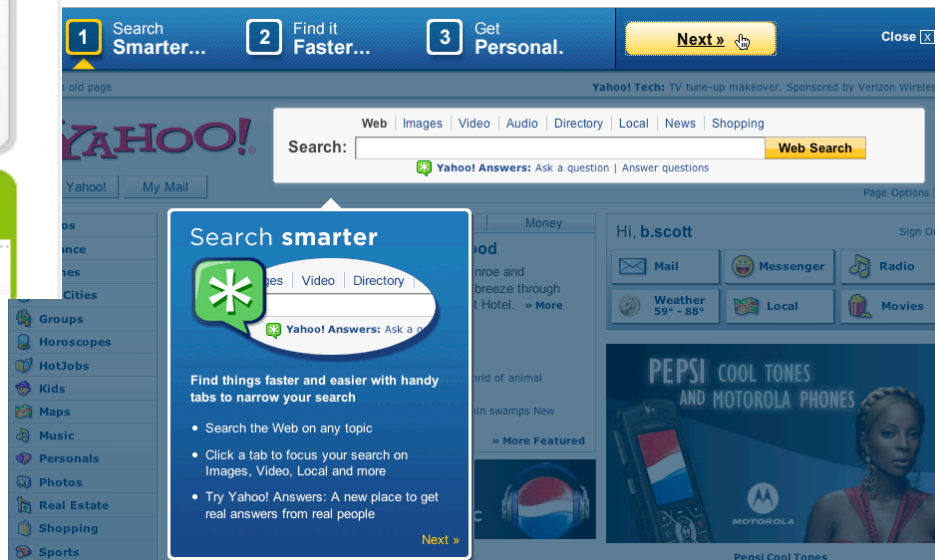
Cursor Invitation

Tooltip Invitation

## Make it engaging

Use lightweight events as a welcome mat  
Rediscover the hover

a digital SLR? ✗  
Rs are pro-quality digital  
with interchangeable  
hile they take amazing  
ey're expensive and  
use.  
[more about digital cameras](#)  
  
**See All Digital Cameras**  
AS



## 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



# 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](#)

[\[ Update photos \]](#)









**Schedule View**

**Map View**



[Expand all](#)

[+ Add](#) [Hotels](#) | [Things to do](#) | [Restaurants](#) | [Shopping](#) | [Entertainment](#)

[+ Create Item](#)



Trip Album         [Add Photos »](#)

**Yosemite National Park**


  **John Muir Vernal Falls Mist Trail Hike** » [Schedule](#)

**Scheduled Items**

**Wed 11/23/05 (day 1)** - Yosemite Natl Pk, Yosemite National Park


  **Yosemite Lodge**

From \$97.00 to \$146.00 per night. • [Reserve Now](#)

 559-252-4848  
Yosemite Natl Pk, CA 95389  
United States  
In the valley of Yosemite National Park

**Notes:** [\[ Edit \]](#)

**Tags:** [\[ Edit \]](#)  
yosemite, hiking



## Speak to the BRAIN

Understanding attention processing

# MIND HACKS

*Tips & Tools for Using Your Brain*



O'REILLY®

**Tom Stafford &  
Matt Webb**

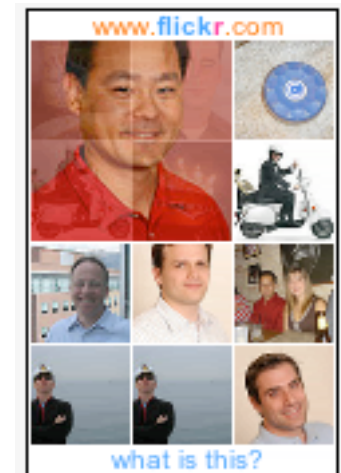
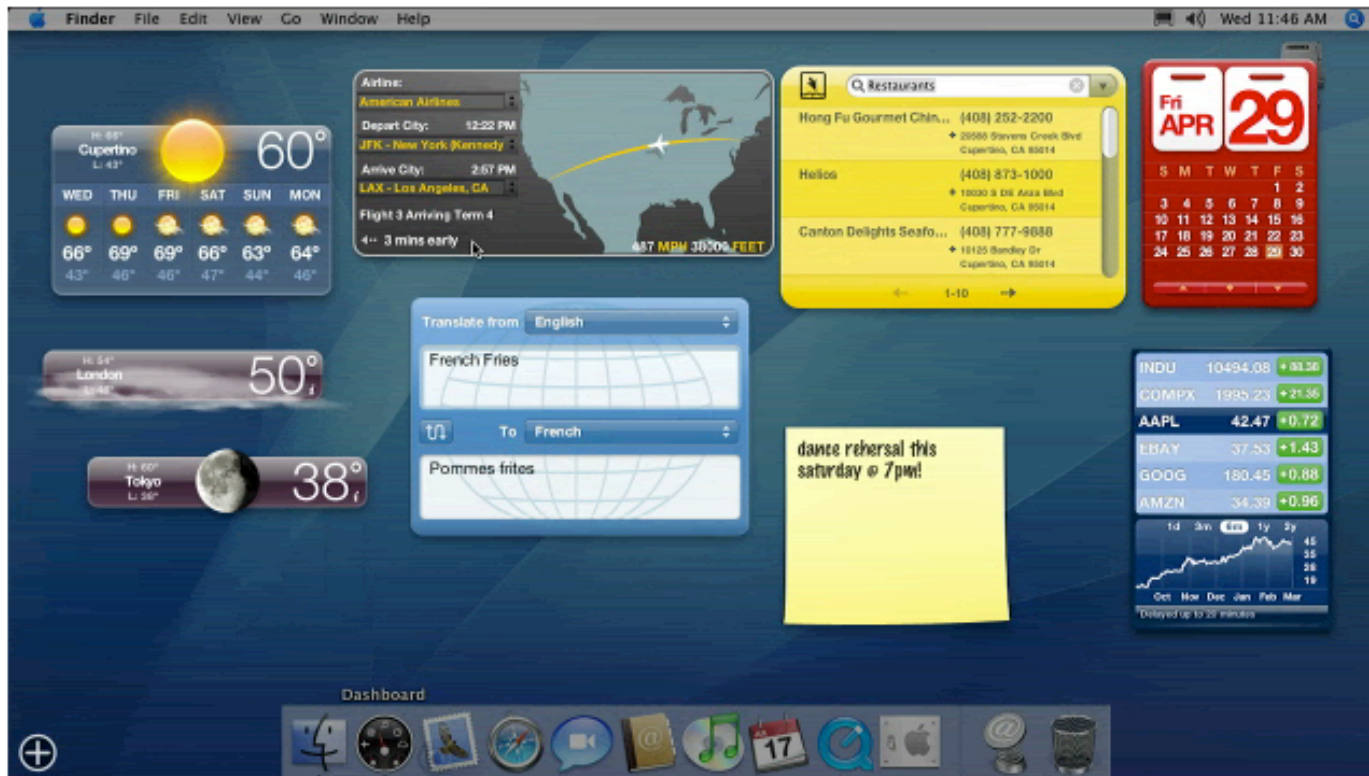
*Foreword by Steven Johnson, author of Mind Wide Open*



# Speak to the BRAIN

Understanding attention processing

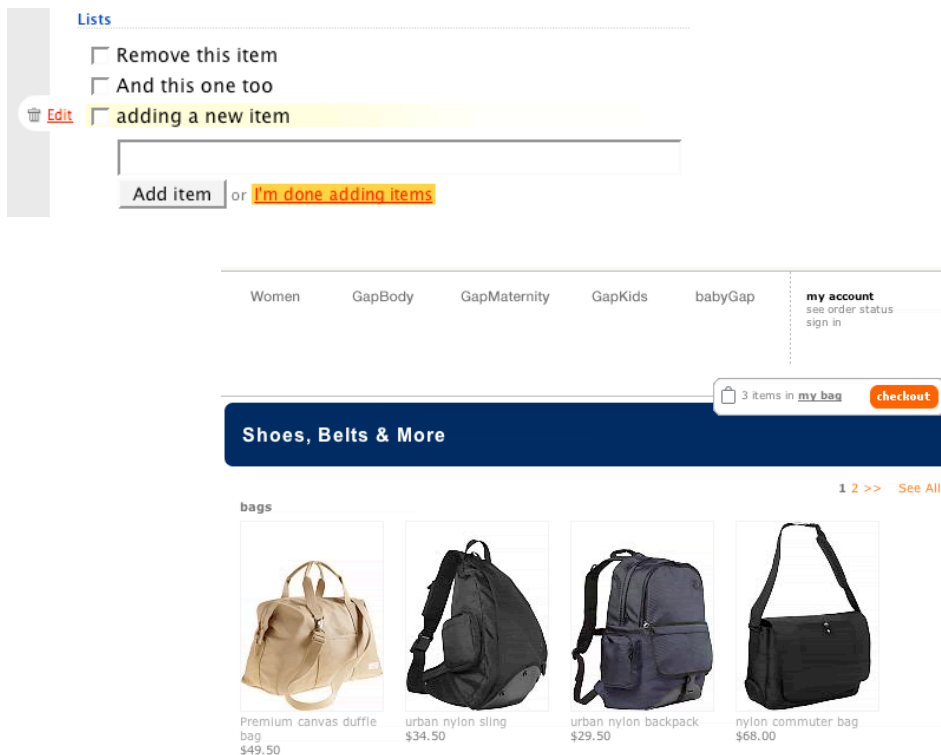
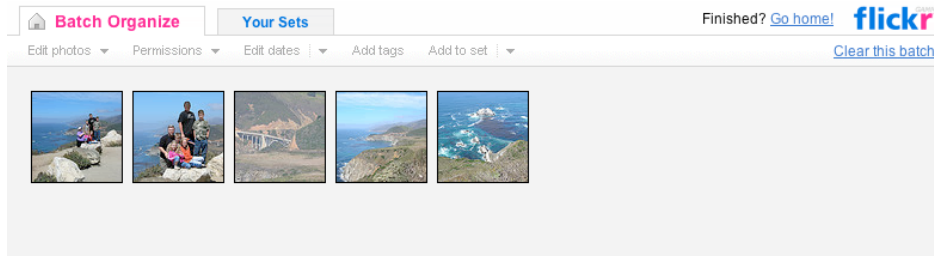
Sending the wrong message





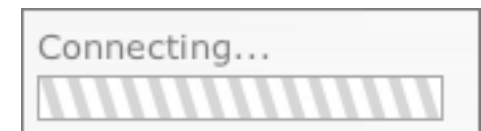
# Speak to the BRAIN

Understanding attention processing  
Sending the wrong message



## What you can communicate

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



# Speak to the BRAIN

Understanding attention processing  
Sending the wrong message

## What you can communicate

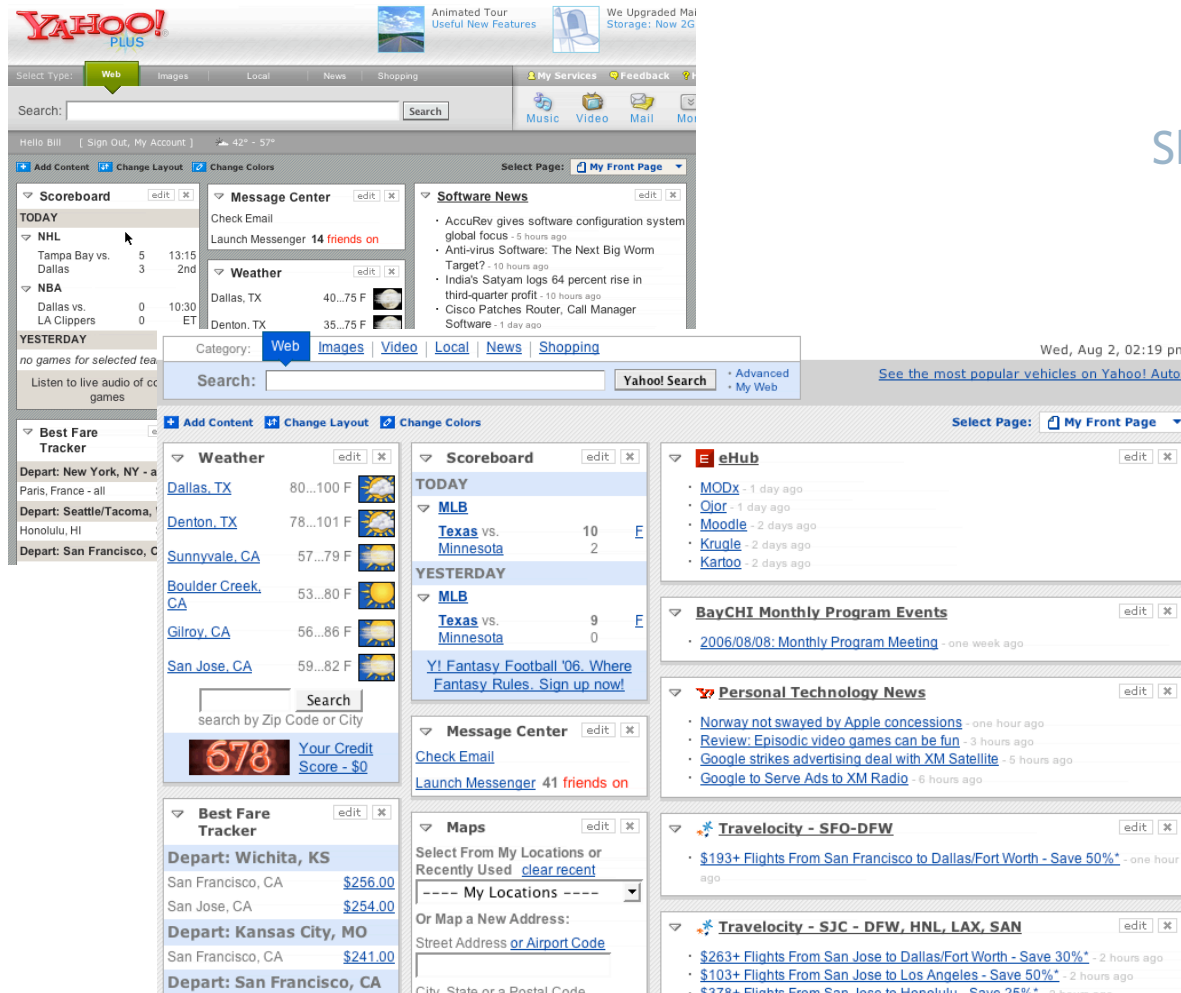
Speed up time

Slow down time

Show state change

Show relationships between objects

Focus attention



## Keep it sane

“Cut in half” rule of thumb  
Use a “contrast knob” approach  
Don’t overuse

*Provide invitations beforehand,  
transitions during,  
and feedback after interaction*



# Think in objects



---

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


[Schedule View](#) [Map View](#) [Expand all](#)


[+ Add](#) [Hotels](#) [Things to do](#) [Restaurants](#) [Shopping](#) [Entertainment](#) [+ Create Item](#)

### Yosemite National Park

  [John Muir Vernal Falls Mist Trail Hike](#) » [Schedule](#) | [View](#) | [Delete](#)

+1 209 372 0200  
Happy Isle Shuttle Stop #16  
Yosemite National Park, CA 95389  
United States

This hike is also known as the Mist Trail because it passes right beside Vernal Falls, which in the spring blows a heavy mist everywhere. This 1.4 mile roundtrip hike is considered a moderate 







**Notes:** [ [Edit](#) ]  
**Tags:** [ [Edit](#) ]  
**Dates:** [ [Add](#) ]



---

#### Scheduled Items

[Wed 11/23/05 \(day 1\)](#) - Yosemite Natl Pk, Yosemite National Park

  [Yosemite Lodge](#)

  [Tunnel View](#)

  [Bridalveil Falls Day Hike](#)

#### Other trips you might like ...

[Browse All Public Trips »](#)

The Ultimate A ...  
by [ajrao1918](#)  
[Copy this trip](#)



SF Trip  
by [pilak\\_shah](#)  
[Copy this trip](#)



6 Parks in 8 d ...  
by [jacorebb](#)  
[Copy this trip](#)



Yosemite  
by [whiskeywom...](#)  
[Copy this trip](#)




Cali Baby!  
by [ibily78](#)  
[Copy this trip](#)

# Rethinking the model

What is the user's mental model?

How to distinguish from content?



## Yosemite Thanksgiving [\[ Edit \]](#)

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

[This trip is public](#) • [Sharing settings](#) • [Email this trip](#)

[\[ Update photos \]](#)

**Schedule View**









**Map View**

[Expand all](#)

[+ Add](#) [Hotels](#) | [Things to do](#) | [Restaurants](#) | [Shopping](#) | [Entertainment](#)


[+ Create Item](#)

Trip Album




[Add Photos »](#)

### Yosemite National Park


☒  **John Muir Vernal Falls Mist Trail Hike** » [Schedule](#)

### Scheduled Items

**Wed 11/23/05 (day 1)** - Yosemite Natl Pk, Yosemite National Park

 **Yosemite Lodge**


From \$97.00 to \$146.00 per night. • [Reserve Now](#)

 559-252-4848  
Yosemite Natl Pk, CA 95389  
United States

In the valley of Yosemite National Park

**Notes:** [\[ Edit \]](#)

**Tags:** [\[ Edit \]](#)  
yosemite, hiking



DESIGNING FOR AJAX

55


# Rethinking the model

What is the user's mental model?

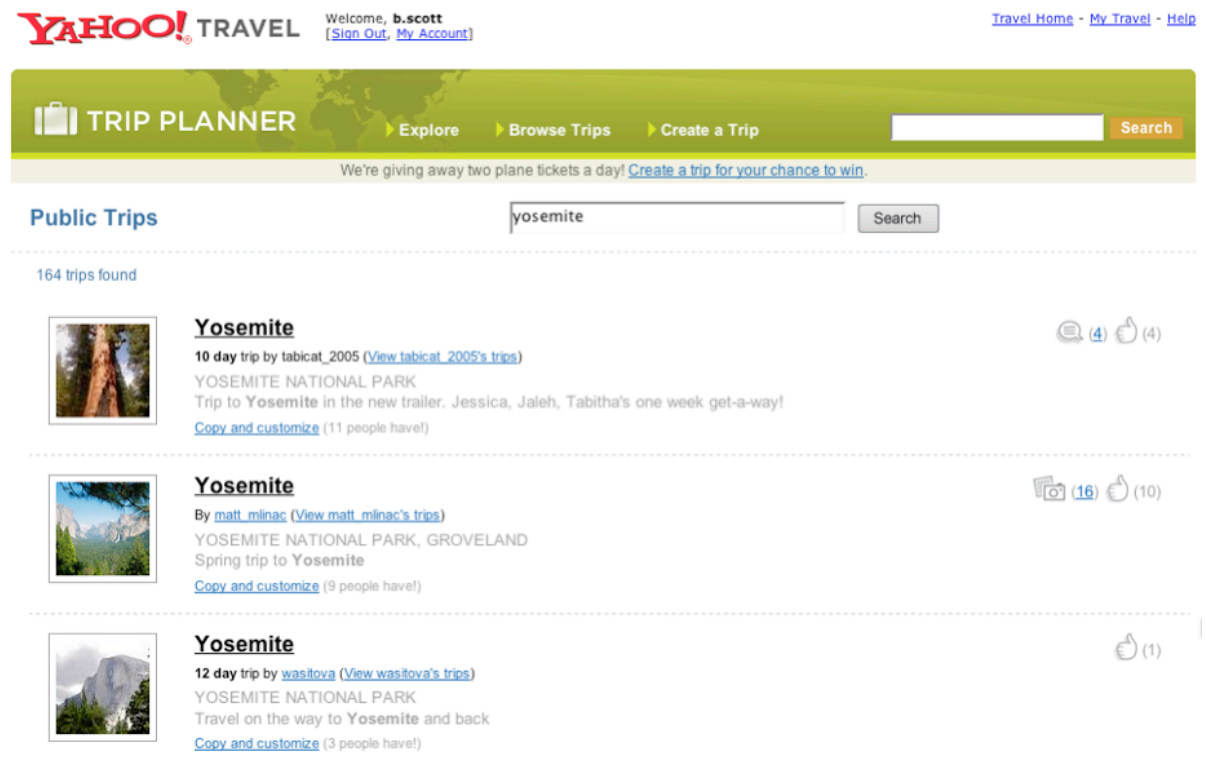
How to distinguish from content?

Y! [Amsterdam Trip Plans on Yahoo! Travel](#)  
[Yahoo! Shortcut](#) - [About](#)

Y! [My Web Results for amsterdam trip \(49\)](#)

1. [Trip to Amsterdam - photos, history, maps - Virtual trip to Amsterdam](#)   
 Web trip to **Amsterdam**. Historical and sightseeing overview ... **Trip to Amsterdam**. To begin with **Amsterdam** we should first note, that this city has two features making ... One will never forget a **Amsterdam trip** around the city by river ...  
[www.medievalamsterdam.com](#) - 9k - [Cached](#) - [More from this site](#) - [Save](#)

**The power of sharing**  
 Bloggable, shareable, findable  
 How to dial-in community  
 Collections




**YAHOO! TRAVEL** Welcome, **b.scott**  
[\(Sign Out, My Account\)](#) [Travel Home](#) - [My Travel](#) - [Help](#)

**TRIP PLANNER** [Explore](#) [Browse Trips](#) [Create a Trip](#)  [Search](#)


We're giving away two plane tickets a day! [Create a trip for your chance to win.](#)

**Public Trips**  [Search](#)


164 trips found



**Yosemite**  
 10 day trip by [tabicat\\_2005](#) ([View tabicat\\_2005's trips](#))  
 YOSEMITE NATIONAL PARK  
 Trip to Yosemite in the new trailer. Jessica, Jaleh, Tabitha's one week get-a-way!  
[Copy and customize](#) (11 people have!)



**Yosemite**  
 By [matt\\_mlinac](#) ([View matt\\_mlinac's trips](#))  
 YOSEMITE NATIONAL PARK, GROVELAND  
 Spring trip to Yosemite  
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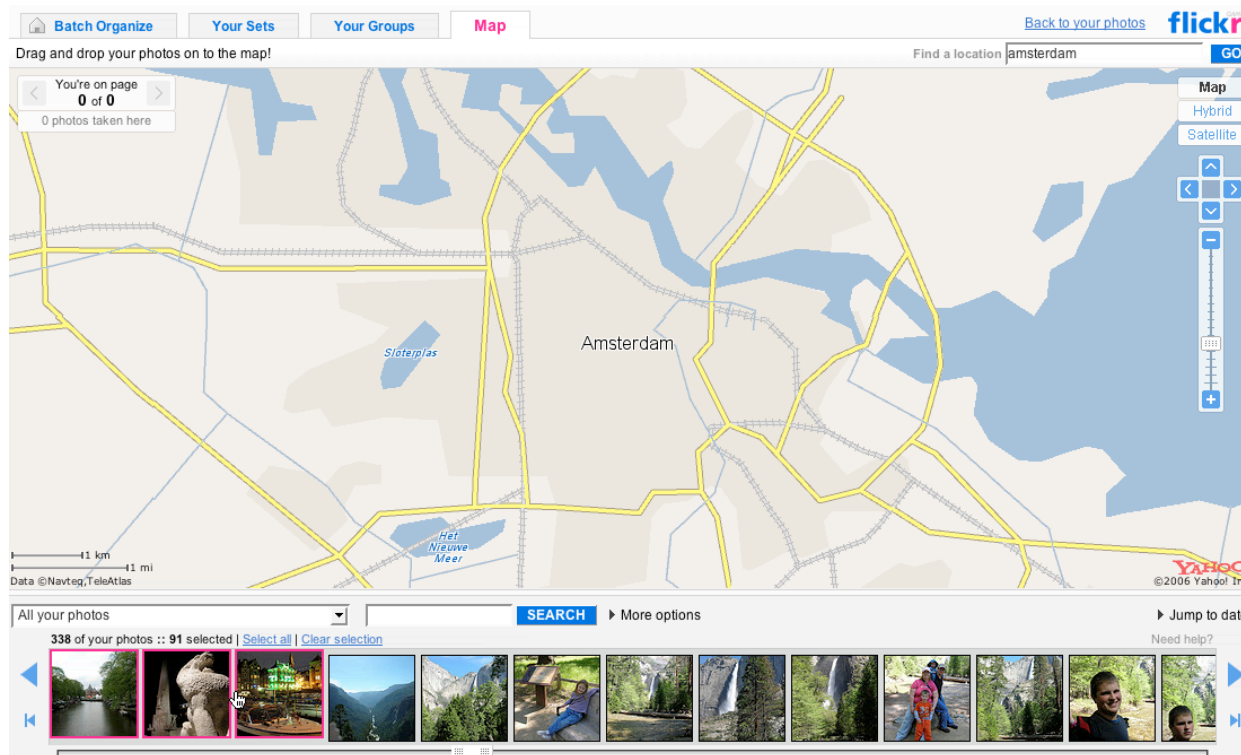
**Yosemite**  
 12 day trip by [wasitova](#) ([View wasitova's trips](#))  
 YOSEMITE NATIONAL PARK  
 Travel on the way to Yosemite and back  
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## Rethinking the model

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

## Web 2.0 as a platform

Rich objects fit the SOA model

Creates a good separation of concerns

Mashups

*Think in terms of the user's mental model and their primary goals*

*Prefer direct, lightweight, in-page interaction.*

*Provide invitations beforehand, transitions during, and feedback after interaction.*

*Think in terms of the user's mental model and their primary goals.*