# Designing for Web 2.0

Principles and patterns for rich interaction

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# background



#### DRAG AND DROP

Desktop applications have long used dra interfaces to simplify user interaction. the simplest interfaces for enabling vo support drag and drop. Just register an JavaScript object as a draggable and ar

#### CINEMATIC EFFECTS personal or commercial use. Sabre Airline

When actions are no longer occurring j required to clue the user on what has t transitions can communicate change it Rico provides several cinematic effects :

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

application space.

**OPEN SOURCE** 

code produced at Sabre.

**BROWSER SUPPORT** 

The library is a fully object-oriented

the library to extend the excellent

Rico is provide free and open-source

(Apache 2.0 License) for either your

JavaScript library. Recently we refactored

prototype. is effort from the Ruby on Rails

Solutions retains the copyright on the Rico

#### BEHAVIORS

Take some raw HTML and sprinkle in so Rico you can get an Accordion component Laszlo. Just nest some DIVs and with or an accordion. And the latest behavior connect an Html table up to a stream o

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!

Auto Complete Calendar Picker

Module Tabs

Navigation Tabs

Developer Network Home Help

Breadcrumbs

Fly-out Menus

Horizontal Bar Hub and Spoke Left Navigation

- Tabs

▶ Faceted Navigation

Design Pattern Library Yahoo! Developer Network > Design Pattern Library

Pagination Item Pagination

EXPLORE DATA

Search Pagination

#### **▶ ORGANIZE DATA**

#### GIVE FEEDBACK

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

#### CALL ATTENTION

Sliders

IMPROVE READABILITY

## Ratings & Reviews

Review Architecture

#### GROUP RELATED ITEMS

▶ ORGANIZE SCREEN/PAGE

YAHOO! DEVELOPER NETWORK

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 contex

Travel > Guides > North Amer

ica > United States > New York

lew York City > Things to do

#### Recent Patterns



AP Reuters | AFP | USATOD

Cargo Ship Blocks Sue

International Observers

- Dall Chaus Divida Ame

Module Tabs

#### Breadcrumbs

The user needs to enter an User needs to navigate item into a text box which potentially large quantities of could ambiguous or hard to information efficiently, remember and therefore has without becoming lost. the potential to be mis-typed

# hotos Opinion Local News Odd I

#### Navigation Tabs

The user needs to navigate The user needs to navigate through one or more stacked through a site to locate panes of content without content and features and refreshing the page have clear indication of their current location in the site.

#### 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



#### 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.

#### Thursday, Febr ∀ Weather

Search

#### Drag and Drop Module:

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



#### Object Pagination

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



#### Writing a Review

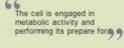
User wants to share her opinion with others about object (place, person, t in greater detail than a simple rating.





**National Mapping -**

Fab Facts, Landforms



## Civil War Battles

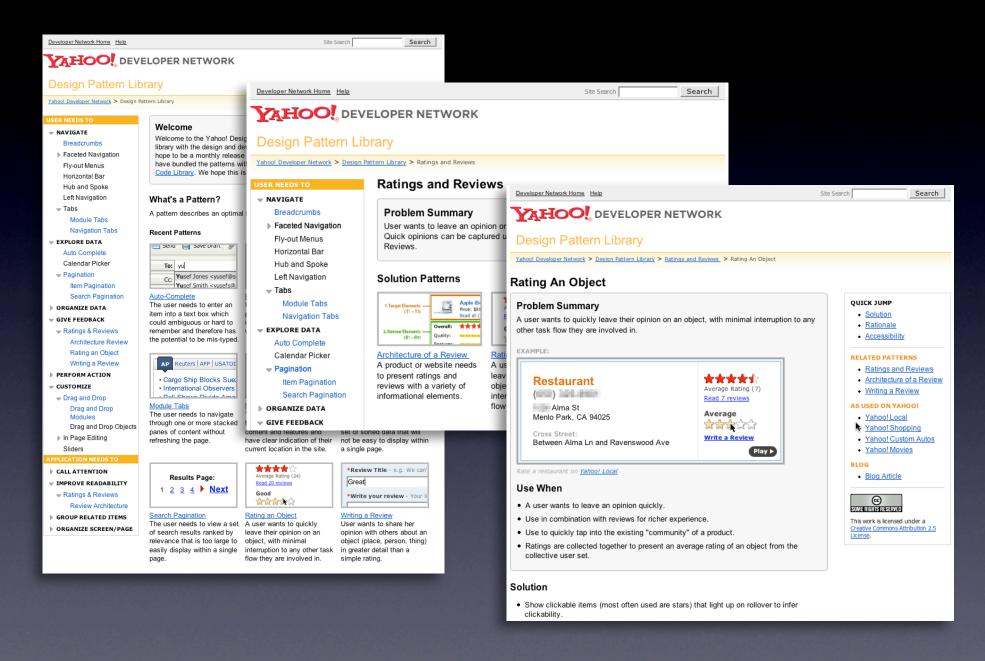
Add Website to Project



掛 Create a new Project



# developer.yahoo.com/ypatterns





# current patterns

Alphanumeric Filter Links. Calendar. 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.

## **Design Pattern Library**

Yahoo! Developer Network > Design Pattern Library > Patterns from A to Z

## Patterns from A to Z



#### Alphanumeric Filter Links

The user needs the ability to look up information alphabetically within a large data set.



#### Breadcrumbs

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



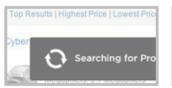
#### Cross Fade Transition

Designer wants to communicate that a new view of an object is replacing the previous view.



#### Animate Transition

The designer needs to communicate that an object is changing its spatial relationship within the page.



#### Brighten Transition

Designer wants to make a previously dimmed object a point of focus by making the object bright again.



#### Cursor Invitation

Designer needs to cue the user that an object can be interacted with.



#### Drop Invitation

1. Target E

2. Review B

Archite

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to prese

reviews

informa

4 5 6

11 12 13

18 19 20

25 26 27

Calenda

User wa

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informa

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Designo

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is of se

Designer needs to indicate valid candidate drop sites during a drag and drop operation.



#### Hover Invitation

Designer needs to cue the user about what will happen when the mouse is clicked on the hovered object.



common page elements, page width, division of space, ad usage and code base.



The designer wants to bring new content into the page and would like to communicate the additional content's relationship with



#### Expand Transition

Designer needs to show the detail of an object in its context or reveal a previously collapsed object.



#### Fade In Transition

Designer needs to communicate that an object is being added to the page or application.



#### Fade Out Transition

Designer needs to communicate that an object is going away.



#### Item 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.



#### 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.



#### Page Grids

For consistent use of



#### 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.



#### 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.



#### Self Healing Transition

Designer wants to show that an object has been removed from a list of objects.



#### Slide Transition

other items on the page.



#### Spotlight Transition

Designer needs to call attention to where a data value or content has changed within the interface.



#### Tool Tip Invitation

Designer needs to cue the user about what will happen if they click the mouse on the hovered object.



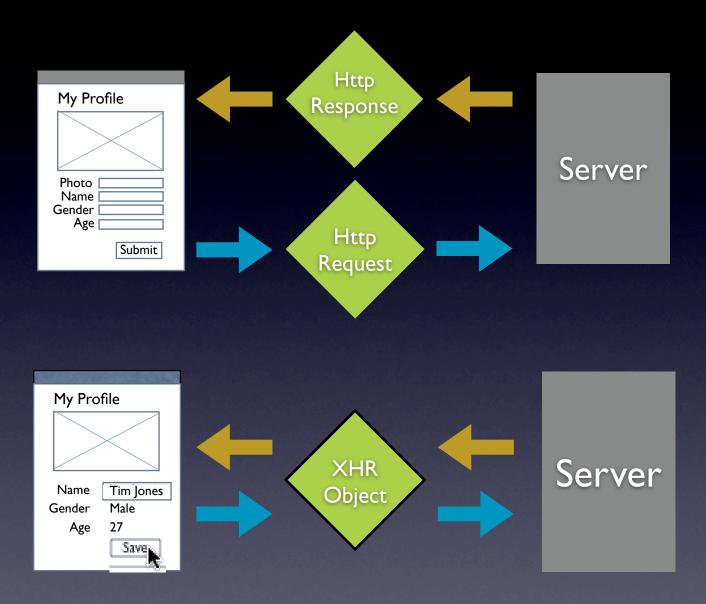
#### Writing a Review

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

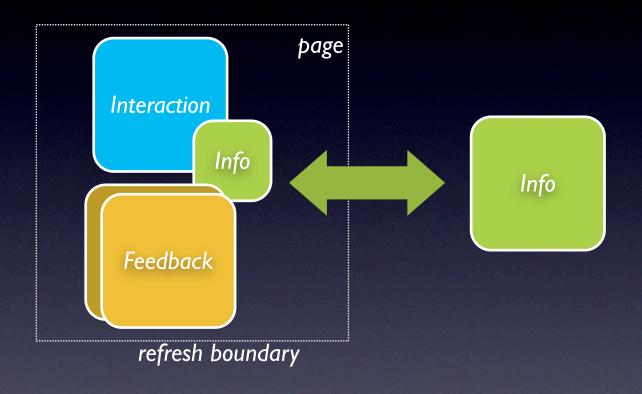
# rich patterns

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.

# classic model. rich model.



# interaction. feedback. information.



# interaction + feedback + information = richness

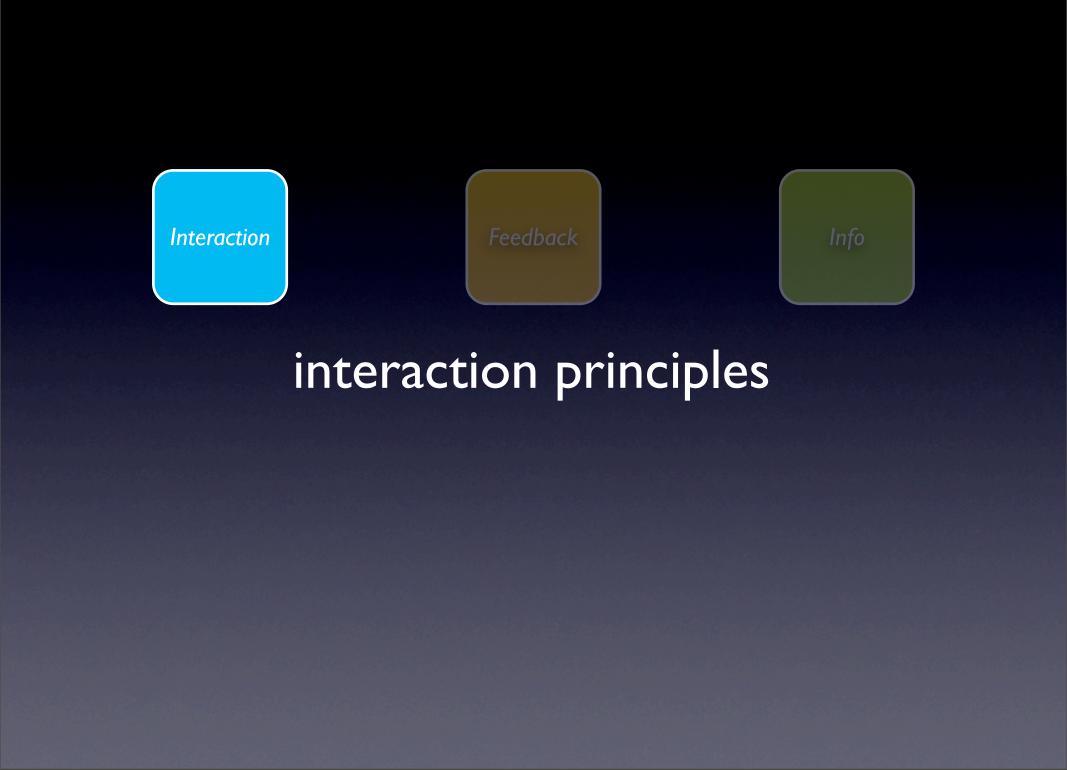


 Interaction

 Feedback

 Info

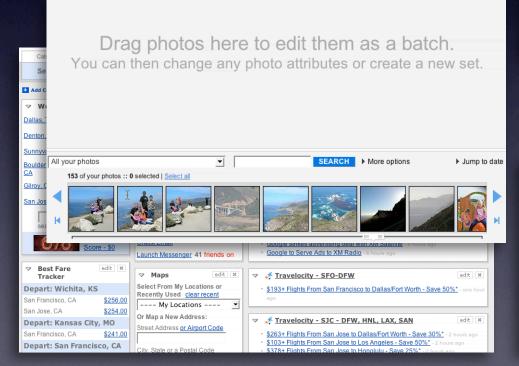
# design principles for richness



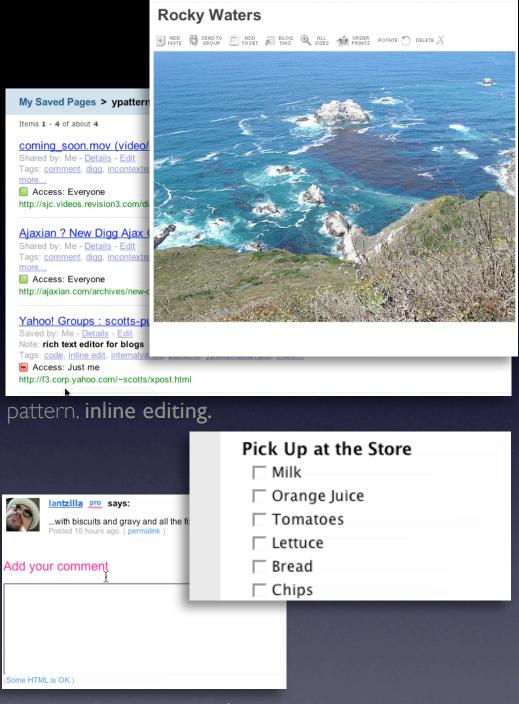
# principle. make it direct.



pattern. in-page action.



pattern. drag & drop.



pattern. in-context tools.

# **Inline Editing**

Use inline forms where possible
Use lightweight popups for ancillary
information



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

SAVE

OR

CANCEL

#### Scheduled Items

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



From \$97.00 to \$146.00 per night. •Reserve Now

\$\sqrt{559-252-4848}

Yosemite Natl Pk, CA 95389

United States

In the valley of Yosemite National Park

Notes: [ Ed ≥ ]

Tags: [ ₺₫₺ ]

Dates: [ Add ]

Wed, Nov 23rd - Fri, Nov 25th [ Ed & ]



\$\cup\$ +1 209 372 1000

Wawona Rd

Yosemite National Park, CA 95389

United States

This breathtaking and spectacular sight is located on Highway 41 just north of Wawona, and just south of the Valley Floor. This popular spot

is the most photographed view of the valley. It received ....



Shared at 4:49 PM PST Email - IM - Delete

## Ajaxian ? New Digg Ajax Comment System

Shared by: Me - Details - Edit

Tags: comment, digg, incontextexpandpatte..., inlinepageeditpatter..., ratinganobjectpatter...,

Access: Everyone

My Sav

Items 1 -

comin

Shared Tags: c

more...

Acce

http://sid

http://ajaxian.com/archives/new-digg-ajax-comment-system - My cached copy

## Yahoo! Groups : scotts-pub Post Message

Saved by: Me - Details - Edit
Note: rich text editor for blogs

Tags: code, inline edit, internalyahoo, patterns, ypatternexample, more...

Access: Just me

http://f3.corp.yahoo.com/~scotts/xpost.html

Saved on February 16, 2006 Email - IM - Delete



## In-context tools

Same as context menus Only good for single objects Can actually slow you down

Open
Explore
Search...

Sharing and Security...
Scan with AVG Free

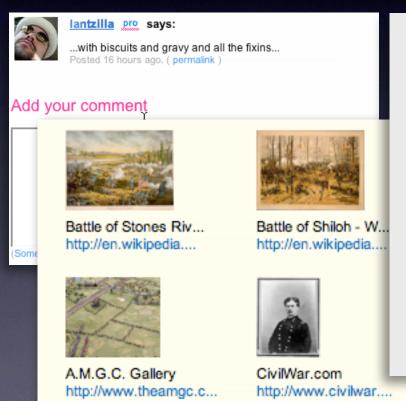
Format...
Eject

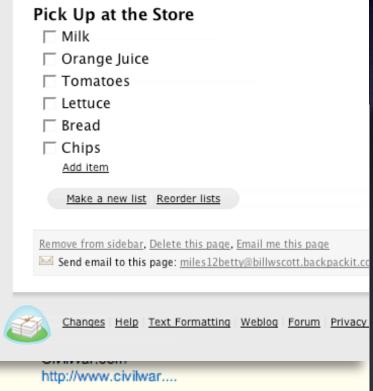
Cut
Copy

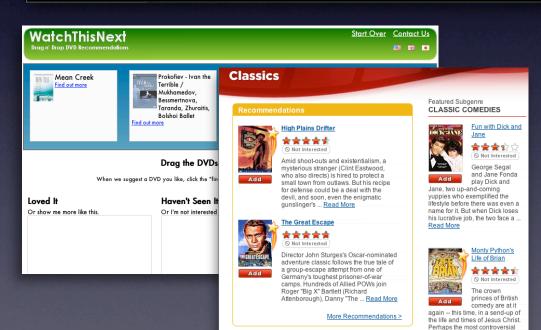
Create Shortcut
Rename

**Properties** 

☐ Create a home page for the VisDe to make findability easier
☐ Edit ☐ Account for experimental patterns as well as established patterns



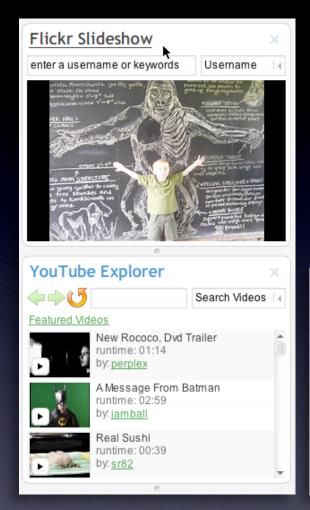




Use Drag & Drop where appropriate

Not for simply setting an attribute

Don't construct artificial visual constructs

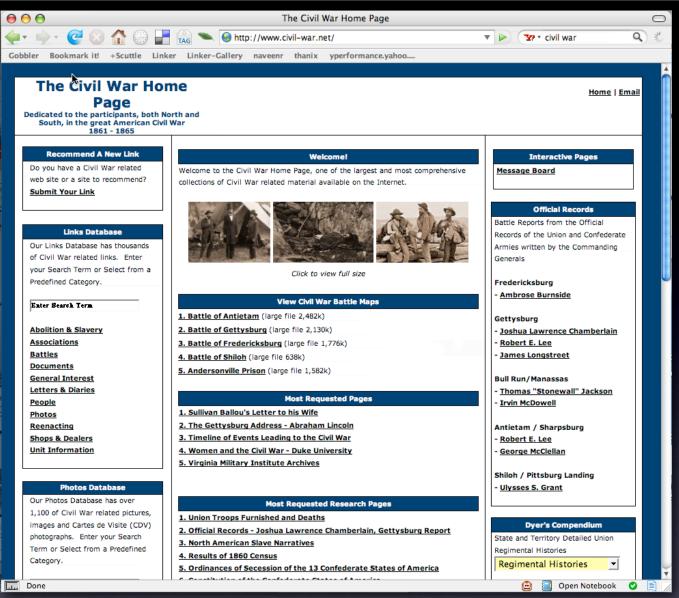


# Pick Up at the Store | DRAG Chips | DRAG Milk | DRAG Bread | DRAG Orange Juice2 | DRAG Tomatoes | DRAG Lettuce

- · 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.

# Use Drag & Drop where appropriate

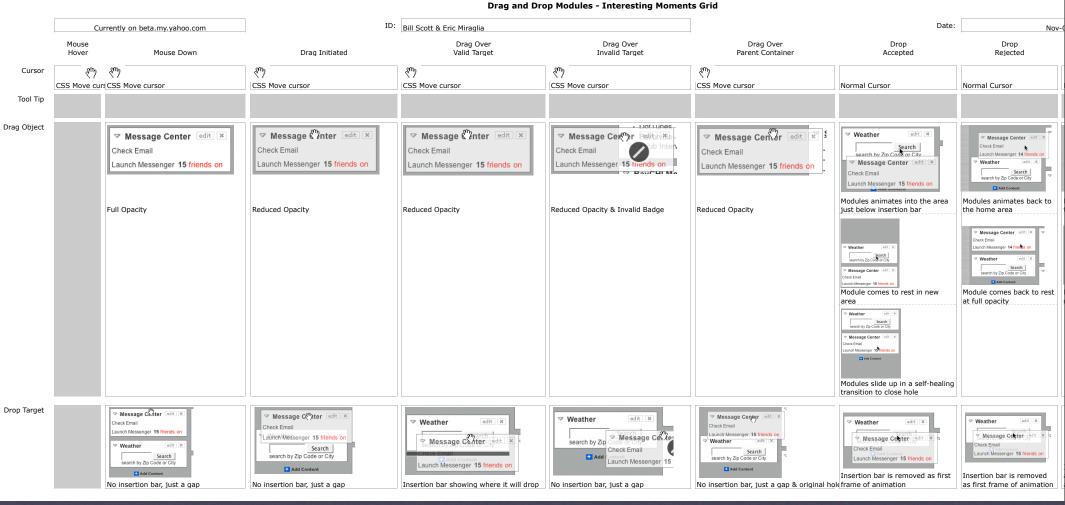
Not for simply setting an attribute Don't construct artificial visual constructs Good for layout changes (Needs transitions)



Use Drag & Drop where appropriate

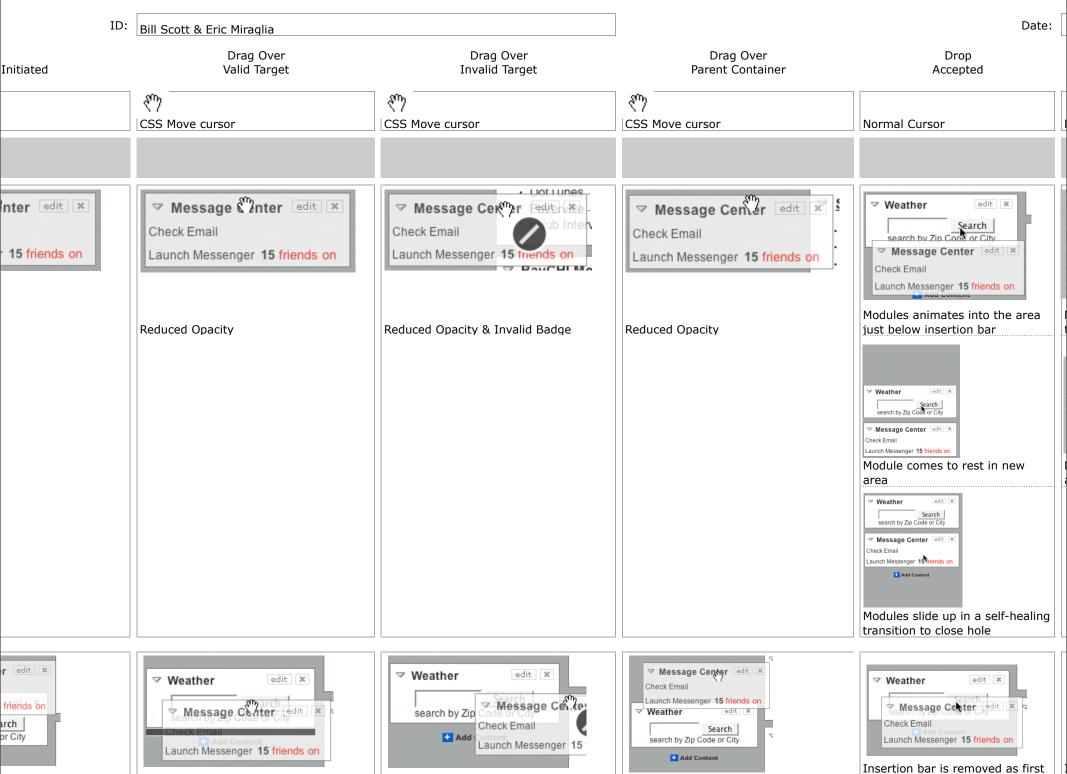
make it direct

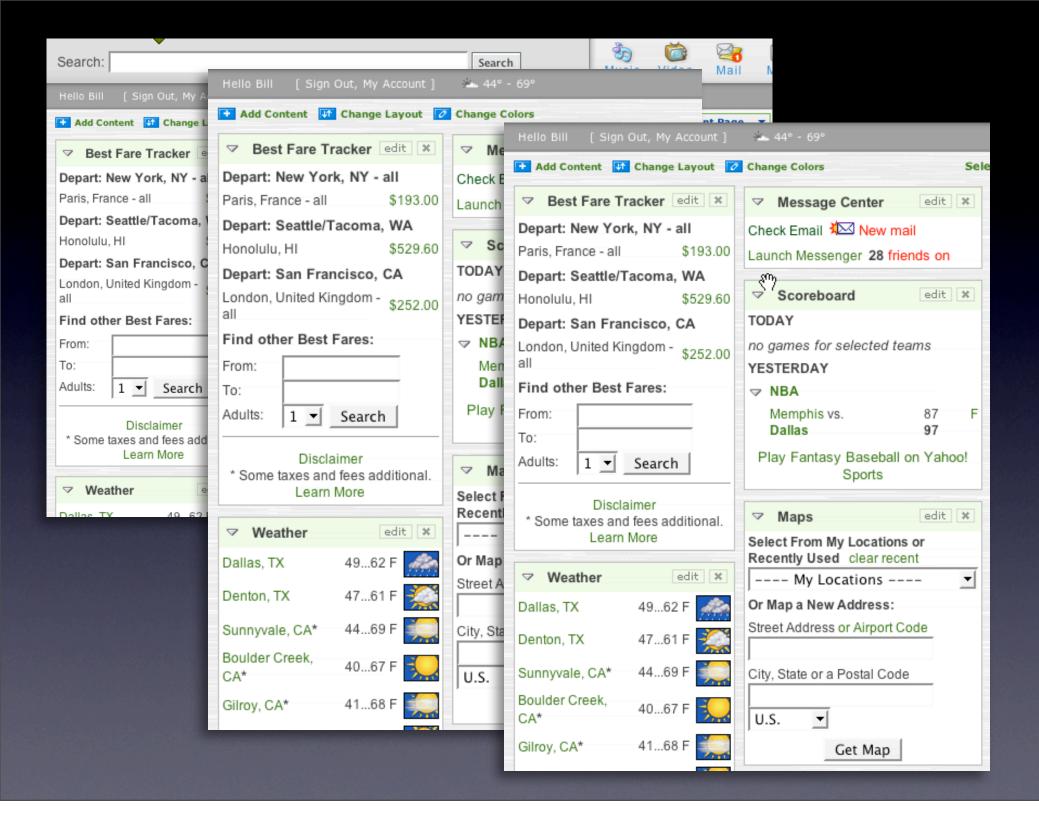
Not for simply setting an attribute Don't construct artificial visual constructs Good for layout changes (Needs transitions)
Good for grabbing items



Take care of the interesting moments

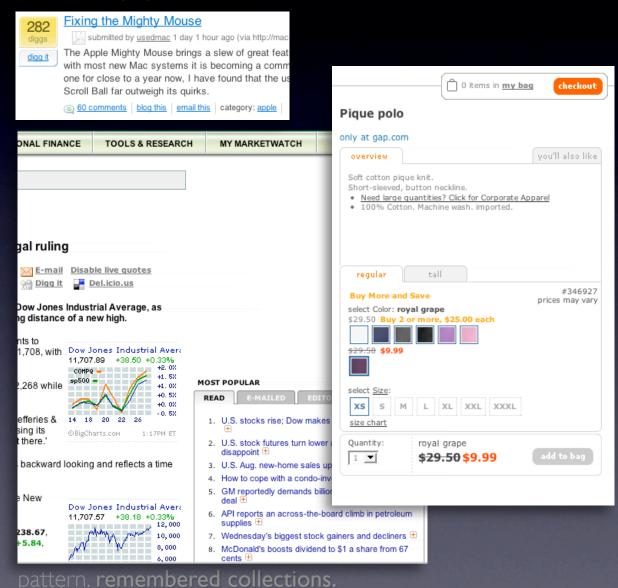
### **Drag and Drop Modules - Interesting Moments Grid**



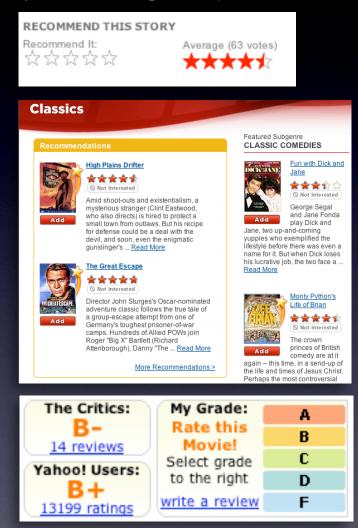


# principle. keep a light footprint.

# pattern. in page action.

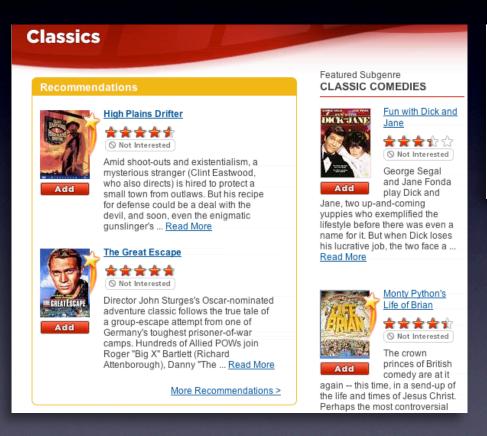


## pattern. rating an object.



## Remove the "pain points"

Shorten the path Keep actions immediate and light Use hover, blur, focus; avoid heavy events





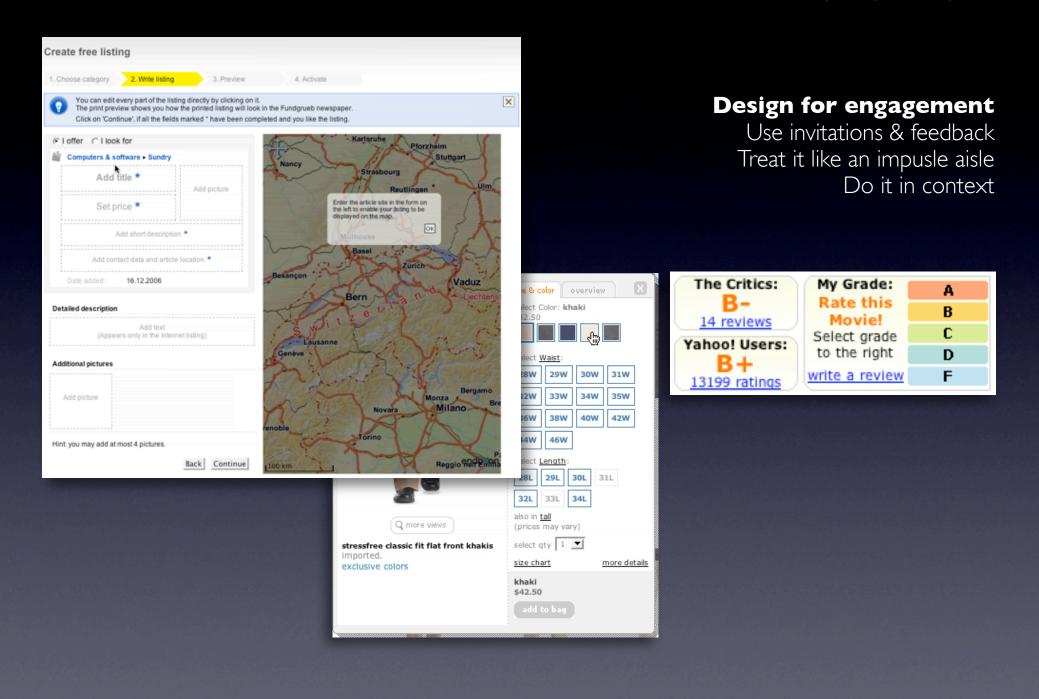
## Fixing the Mighty Mouse

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.

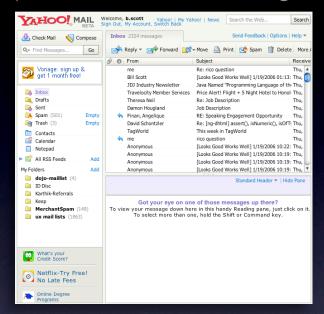


# keep a light footprint

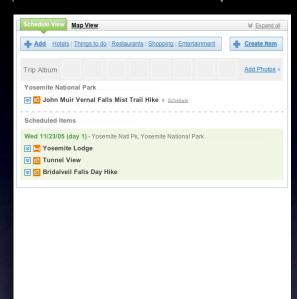


# principle. cross borders reluctantly.

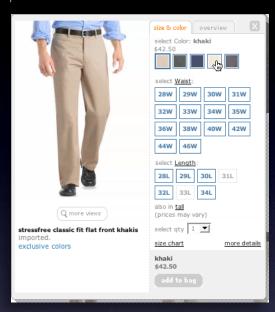
# pattern. on-demand scrolling.



## pattern. in-context expand.

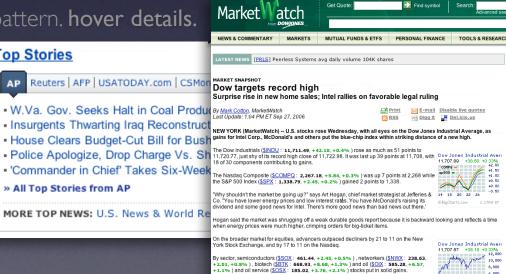


# pattern. inline assistant.

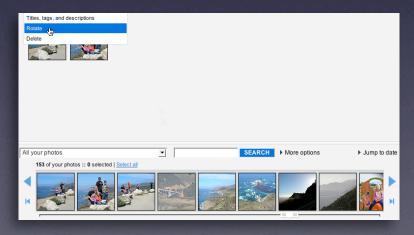


## pattern. hover details.



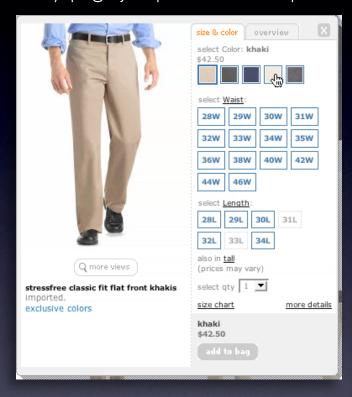


# pattern. lightweight popup + lightbox.



# **Rethink process flows**

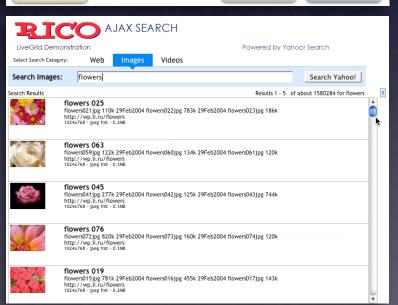
It's the user's mental model, not the page model Every page jump is a mental speed bump





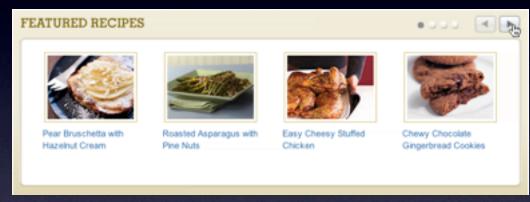
# cross borders reluctantly

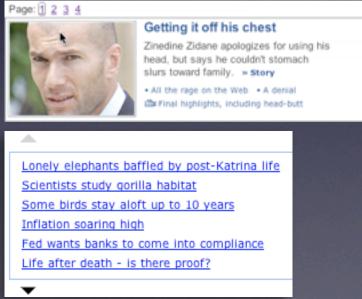
Photo Click for info	Price	Bd/Ba Sq Ft	Address and Area Presented By	MLS # (Click for info)	More Photos (Click for view)	Virtual Tours (Click for view)
	\$1,750,000 Single Res	6+, 4+ 3700	14080 BEAR CREEK RD Boulder Creek, CA 95006 (San Lorenzo Valley) Schwarzbach Associates	<u>550701</u>	MULTI	TOUR
	\$1,995,000 Single Res	6+, 4+ 5675	17617 MOUNTAIN CHARLIE RD LOS GATOS, CA 95033 (Unincorporated Los Gatos Mins) Almaden Oaks Realtors	608215	MULTI	
	\$2,286,000 Single Res	5, 4+ 4800	20930 PANORAMA DR Los Gatos, CA 95033 (Los Gatos Mtns) Alain Pinel Realtors	604907	MULTI	TOUR
	\$2,750,000 Single Res	5, 4+ 5000	155 LARITA DR Ben Lomond, CA 95005 (San Lorenzo Valley) Network Alliance Real Estate	616947	MULTI	
X	\$2,777,000 Single Res	5, 4+ 5819	777 HAPPY VALLEY RD Scotts Valley, CA 95065 (Scotts Valley) Linda Burroughs Real Estate	616474	MULTI	TOUR
New Search << Previous					Next >>	



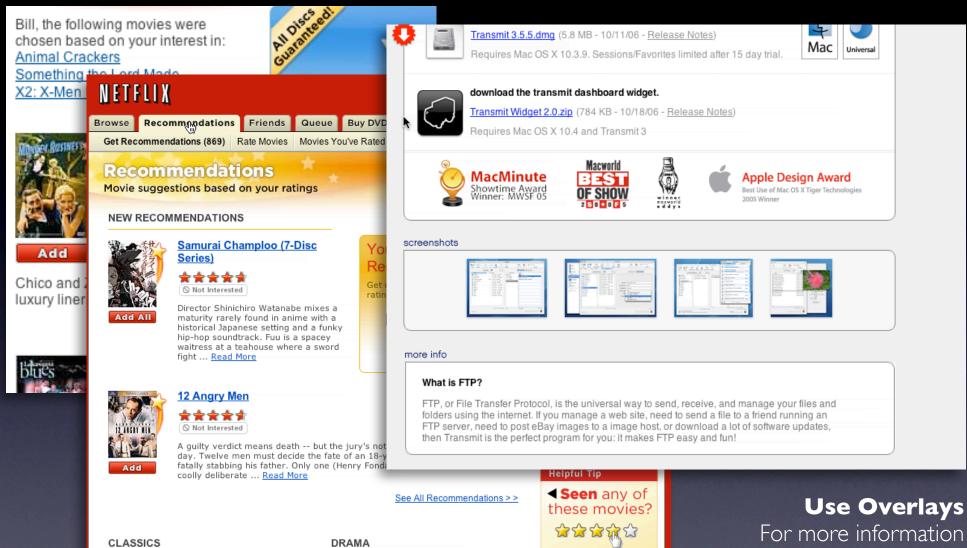
# Re-think paging

Use scrolling for "owned" data Watch out for dual scroll bar issue Hybrid of paging & scrolling





# cross borders relunctantly



DRAMA

Replace page transition

When editing an individual, more complex item Be symmetrical Try not to disturb the page





Home



Prints & Gifts



View Cart



Settings



Help ▼

Search My Tag











# **All My Photos**

Slideshow Create -

Share -

Edit -

Prints & Gifts -

Drag photos into this tray and choose a task above.

Sort by: Date -



Sunset



Underneath



View from the Top







Eiffel Pulley

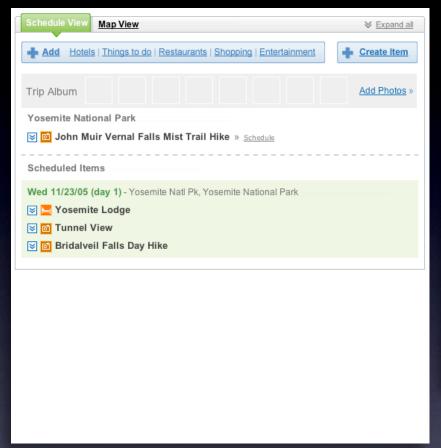


From Second Floor Up



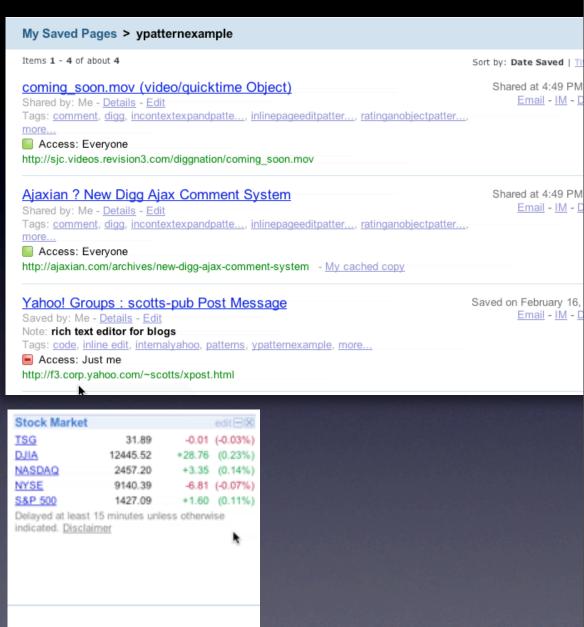
Eiffel Tower

# cross borders relunctantly

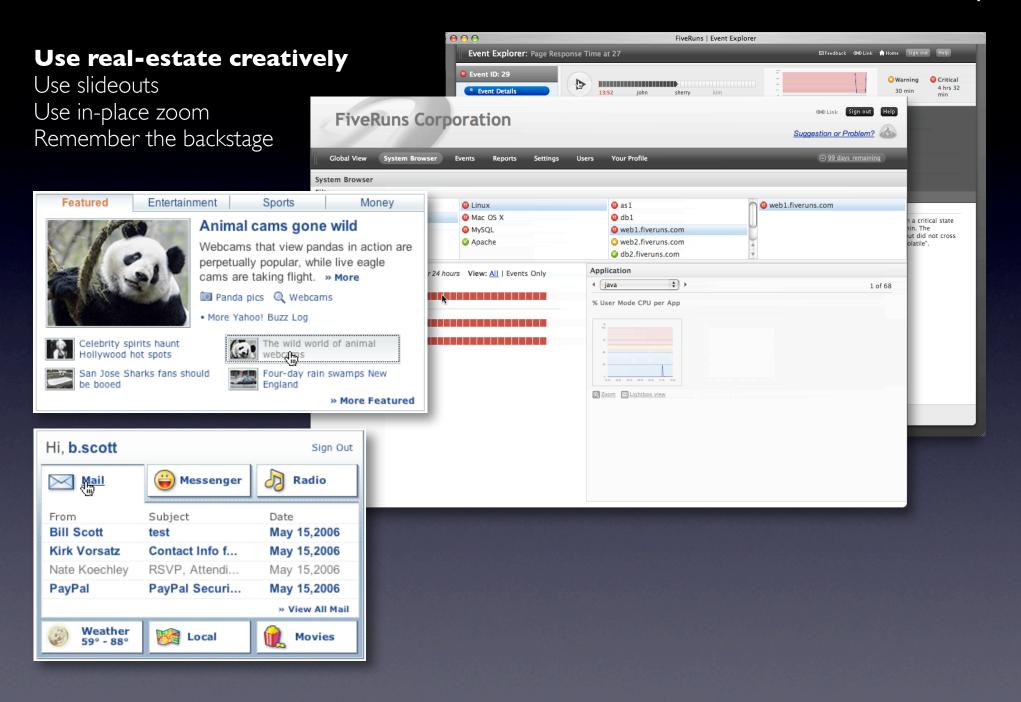


# **Use in-context expands**

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



# cross borders relunctantly



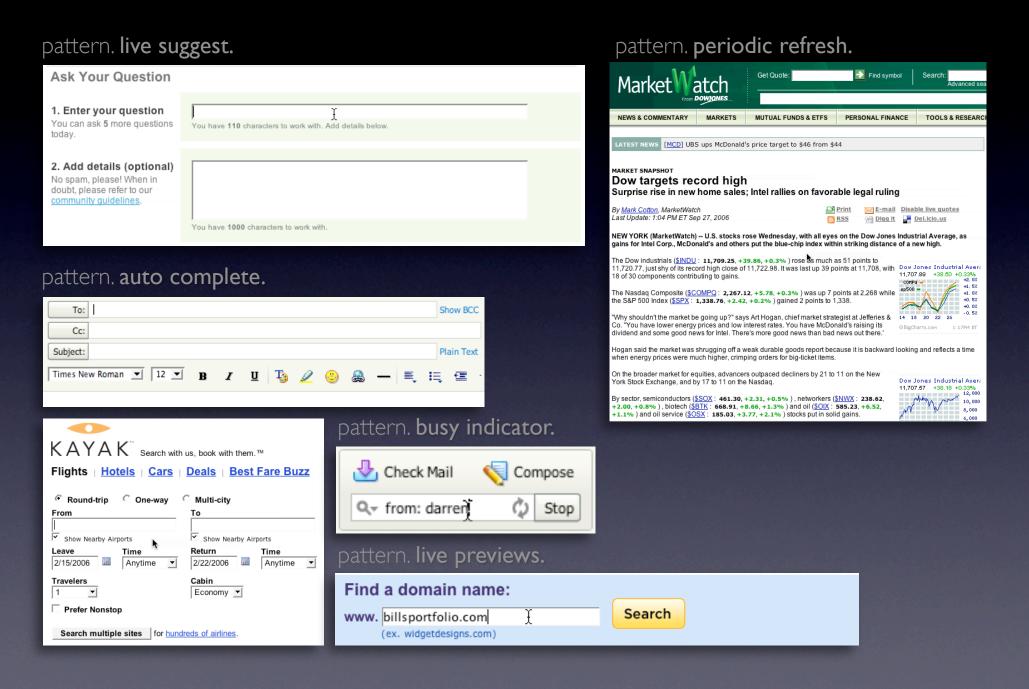
# key principle

Interaction

prefer direct, lightweight, in-page interaction

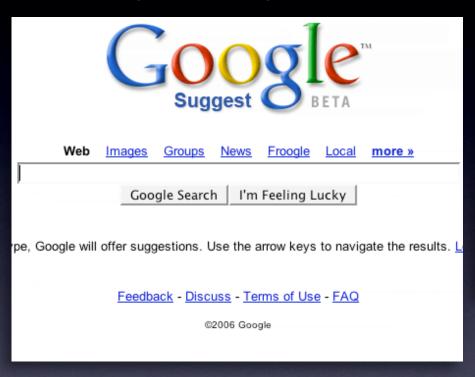


# principle. give live feedback.



# Keep the goal in mind

Design for relevancy ls it narrowing or distracting





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:

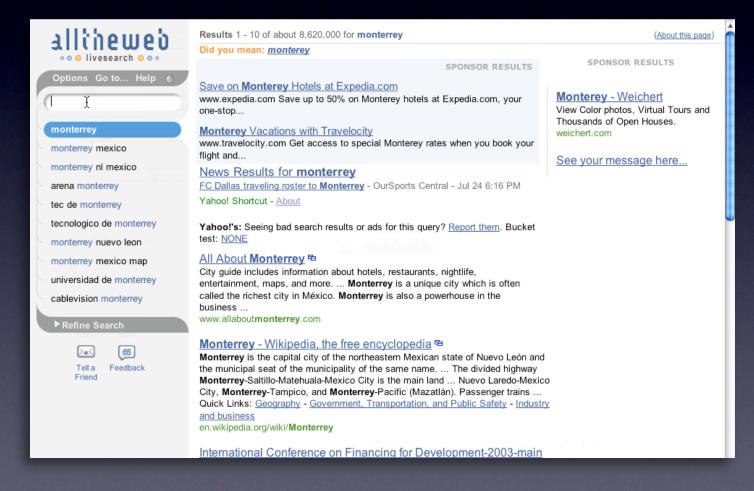
- · boston weather
- wikipedia
- nfl

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

# Keep the goal in mind

Design for relevancy

Is it narrowing or distracting?
Use feedback to boost confidence
Let the user iterate where possible



#### give live feedback

**Shape user perception**Make time pass faster Make application feel more responsive



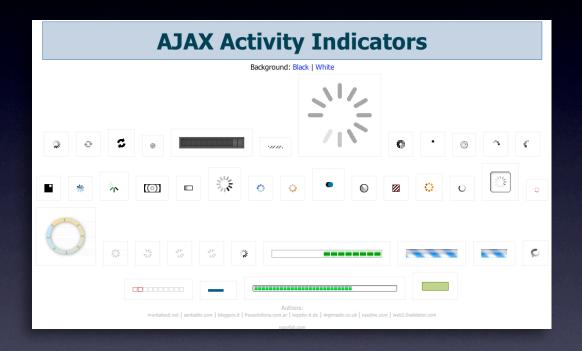


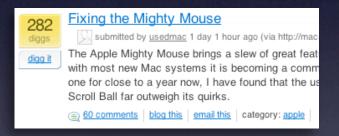
give live feedback



#### Prevent errors before-hand

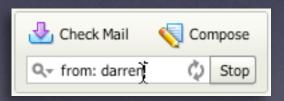
Ounce of preventive design worth pound of error-handling Look before you leap Use live-previews





#### Keep feedback focused

Use laws of proximity in context feedback Respect feedback bandwidth Avoid side-noise (periphial distractions)



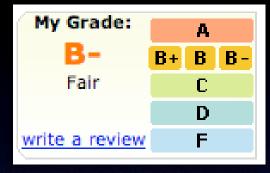


Use laws of proximity in context feedback Respect feedback bandwidth Avoid side-noise (periphial distractions)

Use nuance

### principle. offer an invitation.

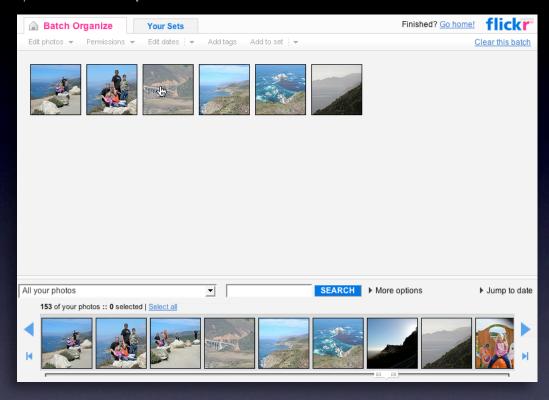
pattern. hover invitation.



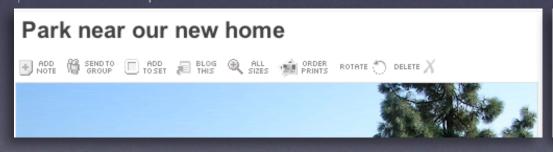
pattern. tour invitation.

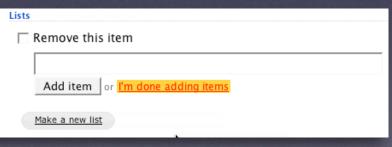


pattern. drop invitation.



pattern. tooltip invitation + hover invitation + cursor invitation.





#### offer an invitation

#### **Discoverability**

No easy answer
Use the hover to reveal interaction
Use the familiar to teach the new
Tours are generally a band-aid
Can't flag all interactions



State park near our home in San Jose

Click to edit

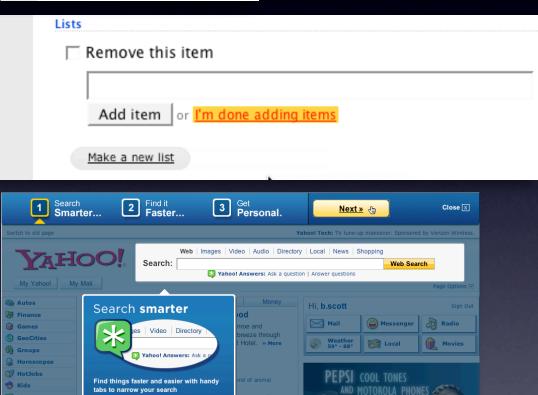
5 photos | Add a comment?

Photos are from 22 Oct 05.



Search the Web on any topic
 Click a tab to focus your search on Images, Video, Local and more

 Try Yahoo! Answers: A new place to ge real answers from real people



#### Bridge the new with the old

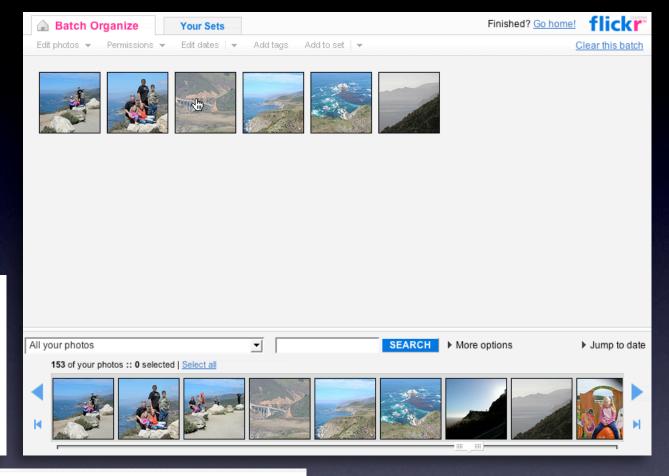
Hyperlinks as actions Reveal with hovers Drop down clues

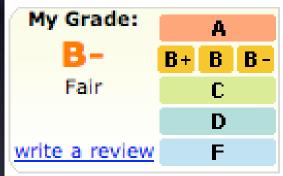


	Pick Up at the Store
	☐ Milk
	☐ Orange Juice
	─ Tomatoes
	Lettuce
	☐ Bread
	Chips
1000	
-	lantzilla pro says:

	lantzilla pro says:	
3	with biscuits and gravy and all the fixins	
	Posted 16 hours ago. ( permalink )	
Add your comment		
	<u> </u>	
(Some HTM	Lie OK)	
(Some HTML is OK.)		

#### offer an invitation





# Park near our new home → ADD M SENDTO TOSET FINES ALL SIZES ORDER ROTATE DELETE X → ADD PRINTS ROTATE DELETE X

#### Make it inviting

Treat it as a welcome mat Use hover, cursor, tooltip, and page Keep the noise down To see a product preview in action, hover over the link below.

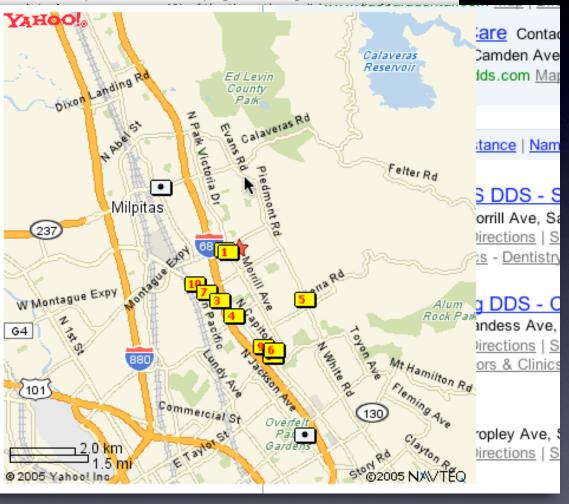
Forty Associates recently added product previews to their Web site as part of a small beta program. During the beta, visitors to

Associate sites who viewed a product preview clicked the purchase nearly 6% of the time.

Now we're opening the beta up to all Associates to furth through a product preview-enhanced link will receive a <u>testing product previews.</u>

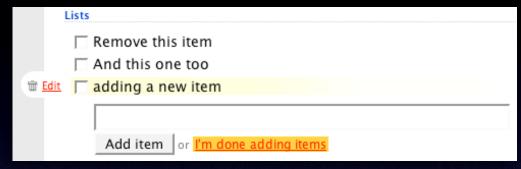
Don't worry if you don't already have Basic Display Proc process. <u>Click here</u> for answers to questions you might

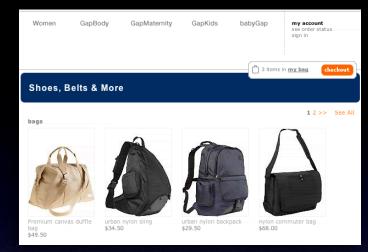
# **Keep actions out of it**Let the user feel free to explore Don't proselytize



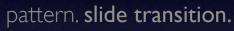
## principle. show transitions.

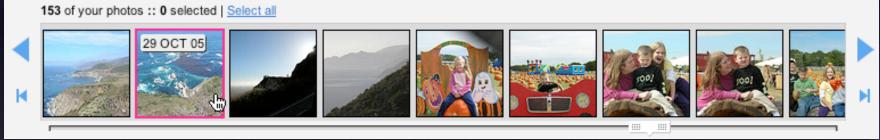
#### pattern. fade transition + self-healing transition.



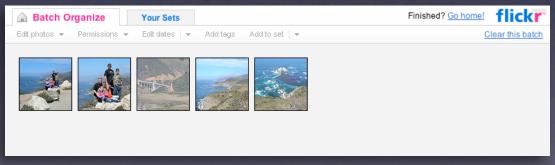


#### pattern. zoom box.

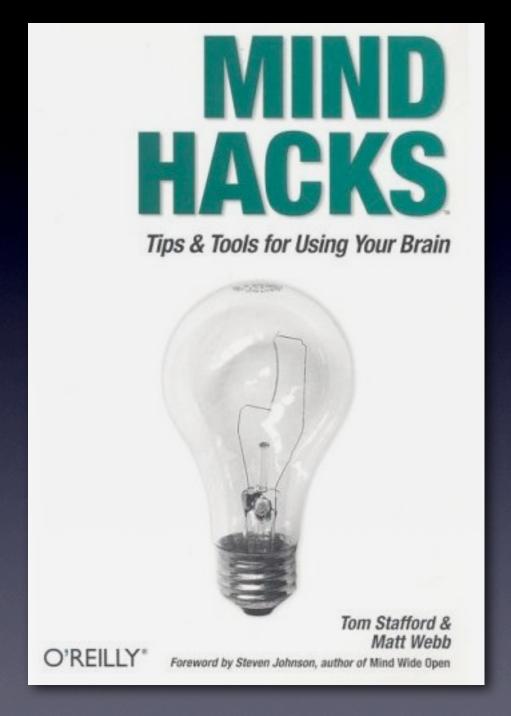




#### pattern. active spotlight.



**Speak to the brain**Understanding attention processing

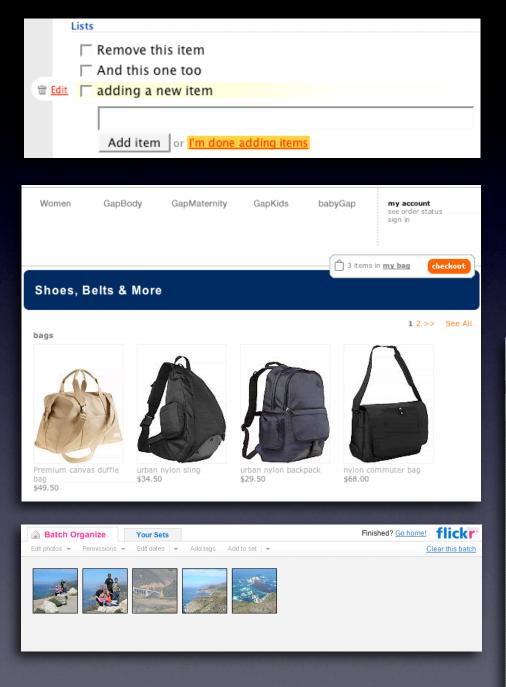


#### Speak to the brain

Understanding attention processing Sending the wrong message





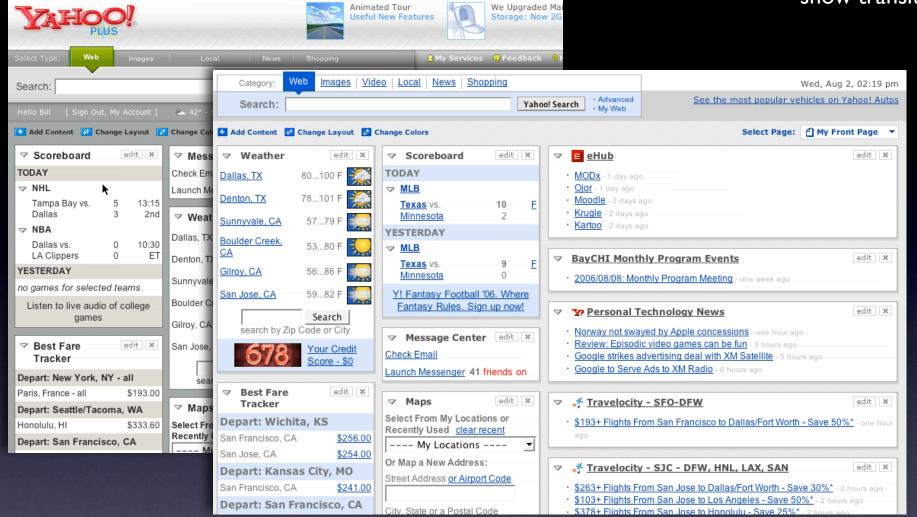


#### What you can communicate...

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





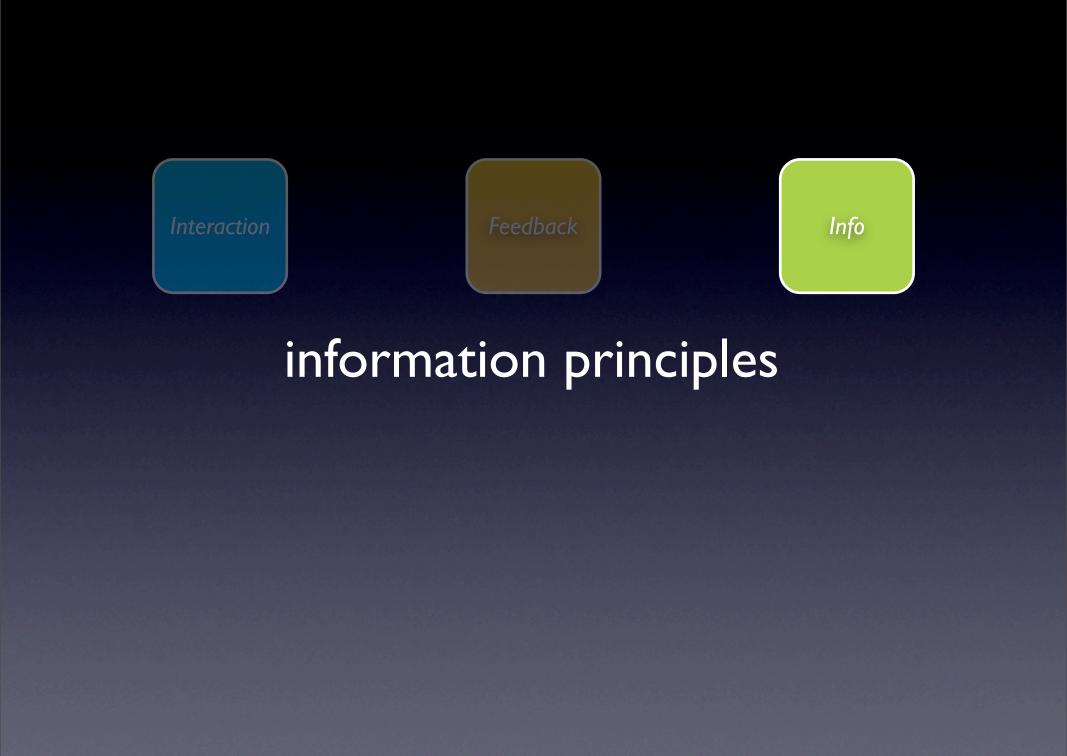


#### Keep it sane

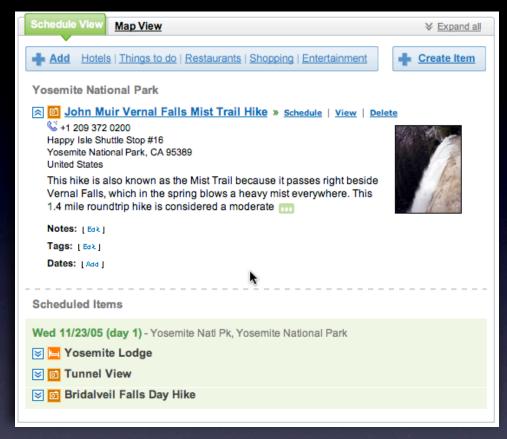
"Cut it in-half" rule of thumb Use "contrast knob" approach Don't overuse



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

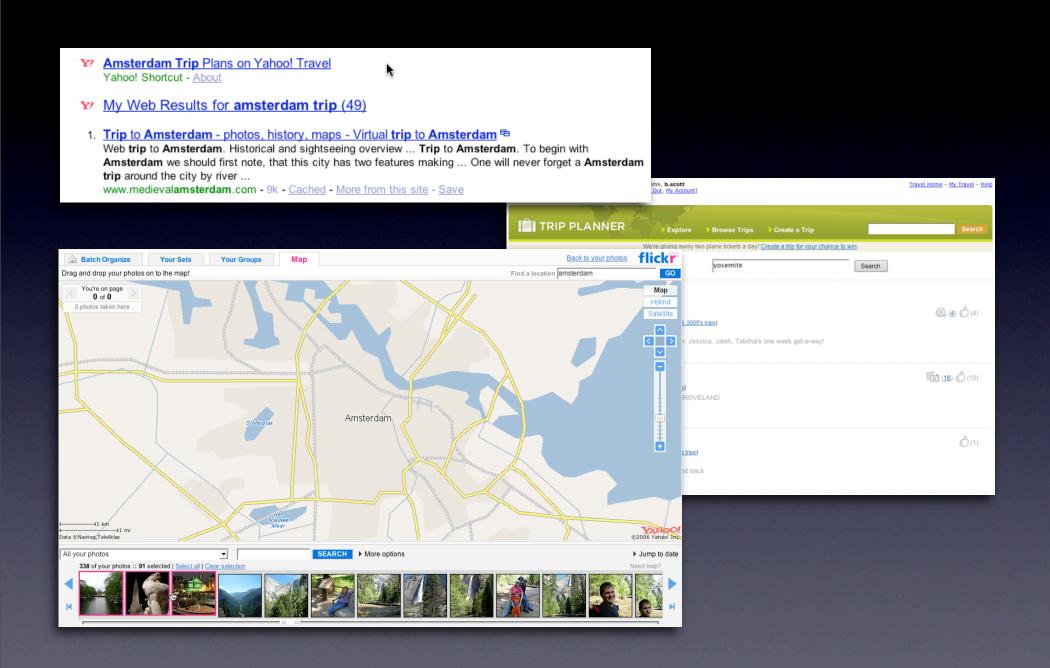


# principle. think in objects.



pattern. shareable object.

#### think in objects



# principle. tie information to interactivity.



pattern. multi-variate views.

#### tie information to interactivity

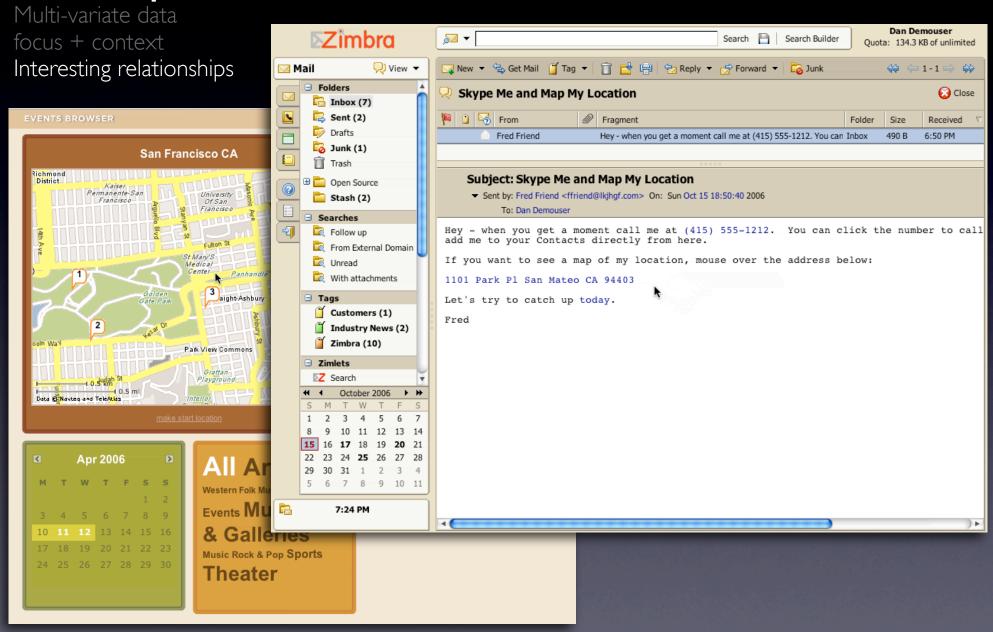
#### Think "deeper interaction"

Multi-variate data



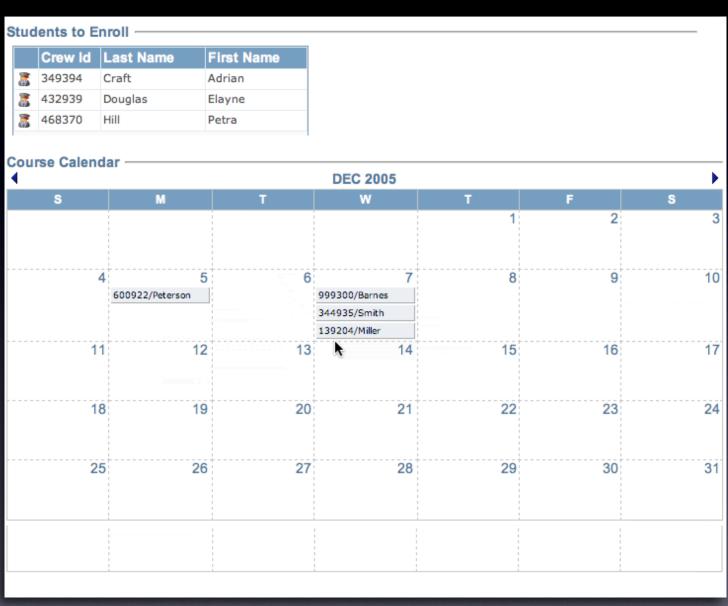
#### tie information to interactivity

#### Think "deeper interaction"



#### Think "deeper interaction"

Multi-variate data focus + context Interesting relationships Just-in-time information



# Think in objects, tie information to interactivity

## key principles for richness



Prefer direct, lightweight, in-page interactions



Provide invitations beforehand, transitions during and feedback after interaction

Info

Think in objects and tie information to interactivity

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