Today

Comments on Paper Prototypes

- Golden Path Prototype is Definitely Appropriate
- Heuristic Evaluation Ignores Missing Nodes
- Be Concerned if Participants Veer From Path
- Fix it between tests, remember your talk aloud

Comments on Project Status

Comments on Presentations

Testing, Patterns, and Anti-Patterns
Introduce Yourself

DisTrack
Refocus yourself

Graeme Britz - Project Manager
Max Suffel - Writer/User Researcher
Angela Suhardi - Writer/Designer
Jackie Chui - Writer/Designer
Bryan Djunaedi - Writer/Designer
Koala

The recurring subscription management tool that lets you finally take control of your recurring services and payments.

Jen Kang • Vivian Yu • Si Liu • Brendan Lee
Koala

The recurring subscription management tool that let’s you finally take control of your recurring services and payments.

Jen Kang • Vivian Yu • Si Liu • Brendan Lee
Finding

- Reimbursement is a burden...
  - More people, more difficult

- Compiling shopping list
  - mental note, notepad, or phone

- Brand and price conscious
Task

1. Making list & budgeting
2. Choosing a store & transportation
3. Shopping
4. Purchasing
5. Storing groceries
6. Managing $$$ & requesting reimbursement
Summary

- Iteration is key
- Understand how users think
- Better design ideas came from more out-of-the-box thinking
- Discretionary spending is easy but discretionary spending tracking is hard
- Users crave positive motivation
Things to Do (Tasks)

1. Ability to record running statistics such as distance run, speed, number of runs, etc.
2. Share statistics with friends
3. Create running events and invite friends
4. Send mass notifications to friends for a spontaneous run
5. Find a SmartMatch (based on various criteria) to run with
6. Write and search for reviews on the route/experience
Overall Problem: Joint Pain & Activity

- Target Audience: Athletes
  - Health conscious
  - Disciplined

- Problem: Overexertion and aggravation of injury among athletes
Parent Contextual Inquiry

Participants:
- Two parents whose children formerly had IEPs
- One parent with two children that currently have IEPs
- One guardian of a student with an IEP

The Process:
- “The lingo and paperwork are confusing, they come with 17 people and you are there by yourself.”

Communication:
- “right now I come in doing all the communications to get information”
Contextual Inquiry - Insights

Johnson (20, undergraduate, CSE 006 Lab)
- Perception ≠ Observation
- Distracted by people talking and noise
- More focused at CSE Labs than at home

Steve (25, graduate, Mercer Court)
- Motivated by seeing people working
- Distracted by people and social media
- Takes breaks often

George (25, graduate, Odegaard Library)
- Turns notifications off while studying

Group (4 undergraduates, Yunnie Bubble Tea)
- Distracted by each other and apps
- Use headphones (music) to focus
Our three inquiries showed us:

1. People valued the insights acquired from a mood journal.
2. People thought journaling was a hassle.
3. People were interested in what triggers their mood.
4. People want to share information with a mental health professional.
Design 1: Running separately
May add some motivation but does not provide the full experience of running with a companion

Design 2: Coordinating running events in advance
Tasks can be accomplished using Facebook events or other similar tools

Design 3: Spontaneous Running
Tasks are unique and they also address the concerns raised in our contextual inquiries. Our chosen design also provides us with an interesting opportunity to explore personal informatics
Summary

- Iteration is key
- Understand how users think
- Better design ideas came from more out-of-the-box thinking
- Discretionary spending is easy but discretionary spending tracking is hard
- Users crave positive motivation
Having Too Much Text

If you can read it
you probably will
we probably will

Be conversational, engaged
even when not talking

Notes are fine
but do not read them
Overall Problem: Joint Pain & Activity

- Target Audience: Athletes
  - Health conscious
  - Disciplined

- Problem: Overexertion and aggravation of injury among athletes
Contextual Inquiry

- Dancers
  - Use of entire body
  - Diverse Injuries
- Observation
  - Warmup
  - Preventative Habits
Contextual Inquiry

4 Locations
- Odegaard Library
- CSE Undergraduate Labs
- Mercer Court
- Yunnie Bubble Tea (Ave)

3+1 Approaches
- Observation + Interview (3x)
- Interview-only (2x)
- In-group Interview (1x4)
+ Online Survey (16x)
Contextual Inquiry

- People do not want to be interrupted or distracted
- Most people do not have a liquid intake plan
- People often reach for soda, coffee, or other beverages when they feel thirsty
Pictures are Good

Contextual Inquiry

Professional (20-40s)

Family

Undergrad Student
15% of Americans between the ages of 20 and 69 experience hearing loss that may have been caused by noise at work or during leisure activities.

Motivation of Participants

**Very noisy** work environment

**Some control** over exposure levels

**Moderately noisy** work environment

**Lacks control** of his noise exposure

Dartmouth student who is exposed to **noisy social environments** multiple days per week

**Has control** over exposure levels
We can help
Tasks

- Record mood reflections
- Discover triggers and warning signs
- Discover wellness strategies
- Planning for health
- Quick mood check-ins
- Aid your health professional
Tasks

1. Engage a work session.
2. Record digital and non-digital behavior.
3. Prompt for taking breaks.
4. Reflect on recorded data relative to time and location.
5. Find a productive work place.
6. Find and implement methods/strategies to stay focused.
Tasks

Facebook, please! I am trying to study!

Check me!
Check meeceee!

Facebook

Our relationship entered its decline at this point.
That's when you started graphing everything.
Coincidence!

break
Speaking of Distractions

Whether correct or not, many things distract

Plural possessive

a posteriori

Anything that might be sensitive
Original Tasks

Current Tasks:
- Aggregate and collect all IEP information for continuity and stakeholder accessibility.
- Encourage communication between stakeholders.
- Connect with other parents who have children with similar disabilities.

New Tasks:
- Access mini lessons to support the developmental master of IEP tasks.
- Motivational rewards system to encourage students to be active in their IEP.
- IEP videos for parents to understand how to best advocate for their child.
Initial Tasks

1. Tracking liquid intake over time (*Easy*)
2. Education on hydration (*Easy*)
3. Convenient reminders to drink water (*Medium*)
4. Smart beverage suggestions (*Medium*)
5. Finding motivation for drinking water (*Hard*)
6. Accurate dehydration detection (*Hard*)
Adjust budget between different categories.
Designate spending as discretionary.
Review spending **progress** compared to goals.

Account for **future** spending.

Prevent **unwanted** habitual spending.

Check if a potential purchase **fits the budget**.
Many people make **general** budgeting goals.

**Large** items are monitored.

Small items cumulative impact **not considered**.

**Challenging** setting up budgets.

Complicated input leads to **less use**.
Task: **Reflect** on recorded data relative to time and location
Task: Find and implement methods/strategies to reduce distractions and increase focus
Design 1

Pre-shopping

EA Groupshop
Hi there!
Honey Nut Cheerios on sale! Get it now?
Sale ends Oct 31st
Add to shopping list
Dismiss

SELECT LIST:
PETER's list
Household's list

Q search

Household

P: Honey Nut Cheerios
  1.49 added in Oct 30th

G: Chocolate
  2.99 public
  added in Oct 25th

A: Orange Juice
  5.99 public

+ Add an item
  Done
Design 1
Sensor Ball with Mobile App

- Tracking Liquid Intake
- Smart Beverage Suggestions
- Convenient Reminders
- Education on Hydration

Naming Designs
Sketch 3

Main Focus:
- Student Motivation

Key Features:
- Mini lessons accessible for the student and parent to work on
- Points awarded for completion of task on the website
- Spending points for various rewards
Design 1

Legibility of Sketches
Updated Sketch

Two Tasks
- Recurring subscription management
- Insight and informed decisions
Problem

A lack of awareness about the long-term implications of noise exposure
Task: **Reflect** on recorded data relative to time and location
KACHING
Remote Usability Testing

Conferencing-based testing

Use tools like video conferencing, instant messaging, and screencasting to test with a remote participant

Semi-automated remote testing

Automatic logging and some analysis of usage

Controlled online A/B experiments

Carefully measure results of showing different versions to different sets of live customers
Semi-Automated Remote Usability

Move usability testing online

- Participants access the “lab” via web
- Answer questions & complete tasks in “survey”
- Records actions or screens for playback
- Can test many people completing many tasks

Analyze data individually or in aggregate

- Playback individual sessions
- Find general problem areas
- If needed, look more closely with traditional methods
Semi-Automated Remote Usability

Please refer to the website below for the following...

(1) Find a flat panel monitor that costs less than $1200. Please try to accomplish this task without using the search function.
- I was able to complete the task.
- I was not able to complete the task.
- I think that I was able to complete the task, but I'm not sure.

ACME Computers

LCD Flat Panel Displays

- Mitsubishi 18IN LCD PANEL: $3,460.00
- Compaq 18IN TFT 28MM 1280X1024: $3,839.00
- IBM 18IN/18.0V ANALOG TFT: $4,099.00
1. Find a flat panel monitor that costs less than $1200. Please try to accomplish this task without using the search function.

<table>
<thead>
<tr>
<th>Task</th>
<th>Response(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I was able to complete the task</td>
<td>90%</td>
</tr>
<tr>
<td>I was not able to complete the task</td>
<td>10%</td>
</tr>
<tr>
<td>I think that I was able to complete the task, but I’m not sure</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Response Times**
- Fastest: 00:00:28
- Median: 00:00:41
- Average: 00:00:48.4
- Slowest: 00:01:14

2. What is the price of the monitor you just found?

**Short Freeform**

$1129
Semi-Automated Remote Usability
WebQuilt: Visual Analysis

Goals

- link page elements to actions
- identify behavior/navigation patterns
- highlight potential problems areas

Interactive graph based on web content

- designers can indicate expected paths
- color code common usability interests
- filtering to show only target participants
- use zooming for analyzing data at varying granularity
Controlled A/B Experiments

Many names for concept

A/B tests or Control/Treatment
Randomized Experimental Design
Controlled experiments
Split testing
Parallel flights

(this section mostly due Ronny Kohavi)
Controlled A/B Experiments

Example: Amazon Shopping Cart Recommendations

Add an item to your shopping cart
Most sites show the cart

At Amazon, Greg Linden had idea to show recommendations based on cart items

Controlled A/B Experiments

Evaluation

Pro: cross-sell more items
Con: distract people from checking out

Highest Paid Person’s Opinion:
Stop the project

Simple experiment run:
Wildly successful

Marketplace: Solitaire v Poker

Experiment run in Windows Marketplace / Game Downloads

Which image has the higher clickthrough? By how much?

A: Solitaire game

B: Poker game

A is 61% better
OUR COMPUTERS ARE DOWN, SO WE HAVE TO DO EVERYTHING MANUALLY...
Checkout Page

*Conversion rate* is percentage of visits that include purchase

Which version has a higher conversion rate?

Coupon code decreases by factor of 10

Example from Bryan Eisenberg’s article on clickz.com
Office Online Feedback

Feedback A puts everything together, whereas feedback B is two-stage: question follows rating.

Feedback A just has 5 stars, whereas B annotates the stars with “Not helpful” to “Very helpful” and makes them brighter.

Which one has a higher response rate? By how much?

B gets more than double the response rate.
Another Feedback Variant

Call this variant C. Like B, also two stage.

Which one has a higher response rate, B or C?

C outperforms B by a factor of 3.5!
MSN US Home Page

Proposal: New Offers module below Shopping

Control

Treatment
Experiment Results

Ran A/B test for 12 days on 5% of MSN US visitors

Clickthrough decreased 0.49% \( (p<0.0001) \)

Page views per user-day decreased 0.35% \( (p<0.0001) \)

Value of click from home page: \( X \) cents

\[
Net = Expected \ Revenue - direct \ lost \ clicks - lost \ clicks \ due \ to \ decreased \ page \ views
\]

Net was negative (in millions of dollars), offers module did not launch
Data Driven Methods Not Just Online

1999
Made from cardboard, the first Netflix mailer weighs more than an ounce. But with only 100,000 customers, reducing material and shipping costs is not yet a priority for the company.

2000
Thick paper replaces cardboard. DVDs are inserted and removed from the top rather than the side.

2000
Full-color printing is introduced. Top-loading is abandoned in favor of side-loading, which is judged more convenient.
Data Driven Methods Not Just Online

2000
Customers are asked to peel off a sticker to reveal Netflix's return address. The design is eventually deemed too complex.

2000
Made from plastic instead of paper, this mailer is cheaper, but it sometimes inflates when transported on airplanes.

2001
An airhole (the black dot on the left side of the mailer) is added to prevent the package from inflating.

2001
Netflix returns to paper because it's easier to recycle. Foam padding is added to reduce breakage.
Data Driven Methods Not Just Online

2001
Foam padding is dropped because the benefits don’t justify the cost. The company gives top-loading another try.

2001
Marking a return to side-loading, this mailer is a direct ancestor of the one the company uses today.

2003
Instead of sealing the entire top and bottom, Netflix introduces a circular sticker, affixed only on the top.

2004
A window shows the disc bar code. Speculation is that this enables storing discs in mailers prior to shipping.
Limitations

Drives hill-climbing, but not overall design
   A design may be better, but is it good?

Impossible for new designs to compete

Can be difficult to scale to many features
   How about we step through a larger example
Red Hot Price for the Chili Peppers' New CD: $11.88!
Evolving after the popularity of California, the Chili Peppers release a new album featuring the hit song "By the Way".

In-Stock Now!

<table>
<thead>
<tr>
<th>Album</th>
<th>Our Price</th>
<th>List Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weezer</td>
<td>$6.99</td>
<td>$18.97</td>
</tr>
<tr>
<td>Buttons Are Round</td>
<td>$9.00</td>
<td>$18.98</td>
</tr>
<tr>
<td>The Slim Shady LP</td>
<td>$2.98</td>
<td>$18.97</td>
</tr>
<tr>
<td>Echoes</td>
<td>$11.54</td>
<td>$24.97</td>
</tr>
<tr>
<td>18</td>
<td>$10.99</td>
<td>$18.98</td>
</tr>
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</table>

Just Released: The Royal Tenenbaums for $10.45
West Anderson (Rushmore) directs a motley crew of talented actors in this hysterical comedy about the rise and fall of an eccentric family.

In-Stock Now!

<table>
<thead>
<tr>
<th>Title</th>
<th>Our Price</th>
<th>List Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monster's Ball (DVD)</td>
<td>$11.25</td>
<td>$24.99</td>
</tr>
</tbody>
</table>
**Weezer (2001)**

*Weezer*

Our best price: **$6.99**

List Price: $18.97 (Save: $11.98)

---

### Product Highlights

<table>
<thead>
<tr>
<th>CD</th>
<th>Year</th>
<th>List Price</th>
<th>UPC</th>
<th>Catalog</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>May 2001</td>
<td>$18.97</td>
<td>606949-30452-2</td>
<td>493 045</td>
</tr>
</tbody>
</table>

Standard shipping (USPS Media Mail) for this item is $2.30.

---

### Like New Sorted by Price

<table>
<thead>
<tr>
<th>Price</th>
<th>Total Price</th>
<th>Seller</th>
<th>Seller Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>$7.75</td>
<td>$10.20</td>
<td>custodian46 (149)</td>
<td>best buy</td>
</tr>
<tr>
<td>$8.00</td>
<td>$10.45</td>
<td>stargaze13 (3)</td>
<td>Disk, case, and liner all in excellent con... more...</td>
</tr>
<tr>
<td>$8.25</td>
<td>$10.70</td>
<td>dazzyliz (1205)</td>
<td>SEALED NEW BMG</td>
</tr>
<tr>
<td>$8.35</td>
<td>$10.75</td>
<td><a href="mailto:naojia@hotmail.com">naojia@hotmail.com</a> (35)</td>
<td>Perfect condition</td>
</tr>
</tbody>
</table>

---

### Very Good Sorted by Price

<table>
<thead>
<tr>
<th>Price</th>
<th>Total Price</th>
<th>Seller</th>
<th>Seller Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>$8.00</td>
<td>$10.45</td>
<td>lucidsky (14)</td>
<td>perfect</td>
</tr>
<tr>
<td>$8.84</td>
<td>$11.29</td>
<td>steveeq1 (82)</td>
<td></td>
</tr>
<tr>
<td>$9.00</td>
<td>$11.45</td>
<td>saint.timothy (18)</td>
<td>Great shape...first class ship</td>
</tr>
</tbody>
</table>

---

**About the Album:**
- [Song List](#)
- [Album Credits](#)
- [Album Notes](#)
- [Editorial](#)
- [Customer Reviews](#)

**About the Artist:**
- [Other Works](#)

**Spread the Word:**
- [Write a Review](#)
- [Email a Friend](#)
 Redeeming a Gift Certificate or Coupon?

**Shopping Cart**

**Weezer (2001)** Weezer, Weezer (Music)  
CD, Release Year: 2001  
Seller: naolia@hotmail.com (35)  
Condition: Like New • Notes: Perfect condition

Item: $8.30  
Media Mail: $2.45  
(Change Shipping Method)

Move to WishList • Remove from Cart • Find another one

TOTAL: $10.75

**Gift Certificates and Coupons**

Redeeming your Half.com Gift Certificate or Coupon is easy. Just enter your Claim Code in the box to the right and click "Redeem".

**Proceed to Checkout**
Checkout

Enter your User ID and Password.

Are you a half.com user having trouble signing in? Get help now.

eBay User ID

You can also use your registered email.

eBay Password

Forgot your password?
Learn how to protect your account

Secure Sign In or Register Now

Keep me signed in on this computer unless I sign out. Learn more.

Having problems signing in? Get help now.

For more information about sign in, visit sign in help.
Step 1 - Choose Shipping Address

Ship my order to:

Jason Hong  
387 Soda Hall Computer Science UC Berkeley Berkeley, CA 94720  

[Use This Address]

OR

Enter a new shipping address:

Name  
Street address  
City  
State  
ZIP code  
Country

[Save Changes]
A larger example

OK, SO THE STRATEGY BEHIND THIS REDesign IS-
WAIT, DID YOU INCREASE THE BORDER SIZE??
HOLY CRAP! WE BETTER ISOLATE AND RE-TEST!

BUT... THAT CHANGE IS JUST PART OF A LARGER DESIGN...
CALM DOWN, PIXEL-BOY. WE'VE GOT SCIENTIFIC WAYS TO HANDLE THIS.

3 MONTHS LATER...
SEE? THAT BORDER WOULD HAVE COST US 0.012%. THANK GOODNESS I STOPPED YOUR SLOppy "REDesign."

ABSOLUTELY, ONCE AGAIN OUR BUSINESS IS SAFE.
**New CD Releases!**

only $11.88

**Red Hot Price for the Chili Peppers' New CD: $11.88!**

Evolving after the popularity of *Californication*, the Chili Peppers release a new album featuring the hit song "By the Way."

**In-Stock Now!**

<table>
<thead>
<tr>
<th>Music</th>
<th>Our Price</th>
<th>List Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weezer</strong>, Weezer</td>
<td>$6.99</td>
<td>$18.97</td>
</tr>
<tr>
<td><strong>Gutterflower</strong>, Goo Goo Dolls</td>
<td>$9.00</td>
<td>$18.98</td>
</tr>
<tr>
<td><strong>The Slim Shady LP</strong>, Eminem</td>
<td>$2.98</td>
<td>$18.97</td>
</tr>
<tr>
<td><strong>Echoes</strong>, Pink Floyd</td>
<td>$11.54</td>
<td>$24.97</td>
</tr>
<tr>
<td><strong>18</strong>, Moby</td>
<td>$10.99</td>
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</tr>
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**Just Released: The Royal Tenenbaums for $18.45**

Wes Anderson (*Rushmore*) directs a motley crew of talented actors in this hysterical comedy about the rise and fall of an eccentric family.

**In-Stock Now!**

<table>
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<th>Movies</th>
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<td>$11.25</td>
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</tr>
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</table>

**Advance Orders**

- **The Simpsons: Complete 2nd Season (DVD) $34.97** Save 30%
- **The Sopranos: Complete 3rd Season (DVD) $67.99** Save 32%
- **Tom Clancy: Red Rabbit** (Hardcover) **$19.40** Save 33%

**In Computers**

- **Gateway Desktop Under $400!** $399.00
  - Includes an 800MHz Intel Celeron processor, 256MB RAM, 20GB hard drive, DVD-ROM drive, and more!
  - **Save Over $100 on Dell Latitude CPx!** $639.00
    - Get the best quality at the best price with the Dell Latitude CPx featuring an Intel Pentium III@ 500 MHz processor, 256 MB RAM and 12 GB hard drive.
- **Gateway Desktop Under $500** $499.00
  - Includes a 1GHz Intel Pentium III processor, 256MB RAM, 20GB hard drive, CD-RW drive, 250MB ZIP Drive, and more!

More great deals...
What site is this?
- Logo in top-left corner denotes the site
- Another logo at top-right to reinforce
- examples of SITE BRANDING
• What kind of site is this?
  – Shopping cart icon
  – Tab row content & categories on left
  – Prices in content area
  – UP-FRONT VALUE PROPOSITION
  – example of PERSONAL E-COMMERCE
What can I do here?

- Welcome for new visitors
- Tab row / Search on top
- “Categories”
- Prices
- Examples of OBVIOUS LINKS
- Most important info visible without scrolling
- ABOVE THE FOLD
• What site am I at?
  – Logo in upper-left reinforces brand, can click to go to home
  – Same font, layout, color scheme also reinforces
  – examples of SITE BRANDING (E1)
• Where am I in the site?
  – “Home > Music” are LOCATION BREAD CRUMBS
  – TAB ROW says “Music”
  – Album cover, “Product Highlights”, and CD cover
• Can I trust these sellers?
  – Who am I buying from?
  – Are they reputable?
  – What about shipping?
The Fold

- Hmm, what’s below here?
• Impulse buy
  • PERSONALIZED RECOMMENDATIONS
• About this album
• Lots of unused space
• Still more info below…
Album Notes
Weezer: Rivers Cuomo (vocals, guitar); Brian Bell (guitar); Matt Sharp (bass); Patrick Wilson (drums). Recorded at Cello Studios, Los Angeles, California in December 2000. In 1994 Weezer burst onto the music scene, reaching platinum status with their debut, and in the process proving that there was still room in an airbrushed MTV world for unrepentant power pop played by decidedly non-airbrushed guys. Following a brief sojourn into semi-deconstructionism, 1997's PINKERTON, the four men who make up Weezer serve up a third offering, WEEZER 2001, returning to the sound and producer of their successful debut. Nowhere does producer Ric Ocasek define his trademark refined power pop style more than with Weezer. Unlike the immediate, obvious pop hooks of the string of singles on the first album, though, the songs on WEEZER 2001 may take a few listens to settle in. However, once the subtle-yet-undeniable refrains of such tracks as "Crab," "Don't Let Go," and first single "Hash Pipe" make their way into your skull, they're there to stay, as furious, fuzzy, layered guitars compliment Rivers Cuomo's raw, vulnerable vocals. While this disc clocks in at less than a half-hour long, it packs more hooky wallop than many double live albums.

Product Reviews

Editorial Reviews
Spin (01/01/2002)
Ranked #9 in Spin's Albums of the Year 2001
Ranked #13 in AP's 25 Best Albums of 2001

Excellent tunes in less than half an hour of Rivers Cuomo's shrink another hot tub...Q's observed power pop of their '94 debut, a

Customer Reviews
Rated 4.3 out of 5.0 by 29 raters.

- Editorial reviews
- Customer reviews
- RECOMMENDATION
COMMUNITY
Redeeming a Gift Certificate or Coupon?

Shopping Cart

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TOTAL: $10.75

Gift Certificates and Coupons

Redeeming your Half.com Gift Certificate or Coupon is easy. Just enter your Claim Code in the box to the right and click "Redeem".
- What site am I at?
  - Logo in upper-left
  - Colors, layout, font
  - examples of SITE BRANDING
• Where am I in the site?
  – Last link clicked was “Buy!”
  – “Shopping Cart” and “Proceed to Checkout” reinforce that this is “the right page”
  – SHOPPING CART
• Cross-selling
  – Possibly a pleasant surprise
  – Impulse buy
  – CROSS-SELLING & UP-SELLING
• What am I going to buy?
  – Easy to remove
  – Easy to move to wishlist

• How much will it cost?
  – Shipping costs there, no nasty surprises

• SHOPPING CART
• What can I do?
  – “Proceed to Checkout”
    HIGH VISIBILITY ACTION BUTTON
    – Visually distinct
    – 3D, looks clickable
    – Repeated above and below fold
Checkout

Enter your User ID and Password.

Are you a half.com user having trouble signing in? Get help now.

eBay User ID

You can also use your registered email.

eBay Password

Forgot your password?
Learn how to protect your account

Secure Sign In or Register Now

Keep me signed in on this computer unless I sign out. Learn more.

Having problems signing in? Get help now.

For more information about sign in, visit sign in help.
• What if I don’t have a User ID?
• What if I forgot my password?
• SIGN-IN/NEW ACCOUNT options
Step 1 - Choose Shipping Address

Ship my order to:

Jason Hong
387 Soda Hall Computer Science UC Berkeley
Berkeley, CA 94720

OR

Enter a new shipping address:

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street address:</td>
</tr>
<tr>
<td>City</td>
</tr>
<tr>
<td>State</td>
</tr>
</tbody>
</table>
  - If U.S. Military, enter APO/FPO for City
| ZIP code     |
| Country      |
  - USA

Use This Address

Save Changes
- **What site?**
  - Logo, layout, color, fonts

- **Where in site?**
  - Checkout, step 1 of 3
  - “Choose shipping address”
  - QUICK-FLOW CHECKOUT
• Note what’s different
  – No tab rows
  – No impulse buys
  – Only navigation on page takes you to next step

• This is a PROCESS FUNNEL
  – Extraneous info and links removed to focus customers
Quick Flow Checkouts

CSE440 - Autumn 2007
User Interface Design, Prototyping, and Evaluation

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- Last step of process
  - Step 3, “Place Order”
  - “Place my order” button

- Two HIGH-VISIBILITY ACTION BUTTONS for fold
• No nasty surprises
  – Can see order
  – Total price is same as shopping cart
  – ORDER SUMMARY

![Screen capture of online checkout process](image_url)

- Item: $8.30
- Media Mail: $2.45
- Subtotal: $10.75
- Total Merchandise: $8.30
- Total Shipping: $2.45
- TOTAL: $10.75
• Easy to change shipping and billing
• Easy to save this info
  – Easier to setup info in context of specific task
Design equals Solutions

Design is about finding solutions

Designers often reinvent

- Hard to know how things were done before
- Why things were done a certain way
- How to reuse solutions
Design Patterns

Design patterns communicate common design problems and solutions

First used in architecture [Alexander]

How to create a beer hall where people socialize?

Somewhere in the community at least one big place where a few hundred people can gather, with beer and wine, music, and perhaps a half-dozen activities, so that people are continuously criss-crossing from one to another.

activities

criss-cross paths

open alcoves
Somewhere in the community at least one big place where a few hundred people can gather, with beer and wine, music, and perhaps a half-dozen activities, so that people are continuously criss-crossing from one to another.
Using Design Patterns

Not too general and not too specific

use a solution “a million times over, without ever doing it the same way twice”

Design patterns are a shared language

for “building and planning towns, neighborhoods, houses, gardens, and rooms”

Beer hall is part of a center for public life
Beer hall needs spaces for groups to be alone ALCOVES
A Web of Design Patterns

(8) Mosaic of Subcultures

(31) Promenade

(33) Night Life

(90) Beer Hall

(95) Building Complex

(179) Alcoves

(181) The Fire

Cities & Towns

Local Gatherings

Interiors
Web Design Patterns

Communicate design problems & solutions

how to create navigation bars for finding relevant content

how to create a shopping cart that supports check out

how to make e-commerce sites where people return & buy
Problem: Customers need a structured, organized way of finding the most important parts of your Web site.
NAVIGATION BAR (K2)

Solution diagram

Captures essence on how to solve problem
Pattern Groups

Patterns organized by group

- Site genres
- Navigational framework
- Home page
- Content management
- Trust and credibility
- Basic ecommerce
- Advanced ecommerce
- Completing tasks
- Page layouts
- Search
- Page-level navigation
- Speed
- The mobile web
PROCESS FUNNEL (H1)

Problem:

Need a way to help people complete highly specific stepwise tasks

- Ex. Create a new account
- Ex. Fill out survey forms
- Ex. Check out
PROCESS FUNNEL (H1)
• What’s different?
  – No tab rows
  – No impulse buys
  – Only navigation on page takes you to next step

• What’s the same?
  – Logo, layout, color, fonts
PROCESS FUNNEL (H1)

Problem:

What if users need extra help?
PROCESS FUNNEL (H1)
CONTEXT-SENSITIVE HELP (H8)
FLOATING WINDOWS (H6)
FLOATING WINDOWS (H6)
PROCESS FUNNEL (H1)

Solution Diagram
Related Patterns

(A1) E-Commerce
(A10) Web Apps
(A11) Intranets

(H1) Process Funnel

(K2) Navigation Bars
(K3) Tab Rows
(K4) Action Buttons

(H8) Context-Sensitive Help
(I2) Above the Fold
(K5) High-Viz Action Buttons
(K12) Preventing Errors
(K13) Meaningful Error Messages
Patterns Support Creativity

Patterns come from successful examples

sites that are so successful that lots of people are familiar with their paradigms
interaction techniques/metaphors that work well across many sites (e.g., shopping carts)

Not too general and not too specific

you need to specialize to your needs

Patterns let you focus on the hard, unique problems of your design situation
Principles, Guidelines, Templates

Patterns help design without over-constraining

unlike principles, patterns are not too general

unlike guidelines, patterns discuss tradeoffs, show good examples, and tie to other patterns

unlike style guides, patterns not too specific, can be specialized to a design

unlike templates, patterns illustrate flows and relationships among different pages
Format of Web Design Patterns

Pattern Name and Number
Exemplar
Background
Problem
Forces
Solution
Solution Diagram
Related Patterns
**Pattern Name and Number**

H1 PROCESS FUNNEL

**Exemplar**

Figure H1.1

Dell uses a process funnel consisting of several logical steps that guide customers to quickly configure and purchase a personal computer. Information in a pop-up window shows additional details but keeps customers in the funnel so that they can continue to completion.

**Background**

All Web applications that lead visitors through stepped tasks—personal e-commerce (A1), self-service government (A4), web apps that work (A10), and enabling intranets (A11)—need ways to help people succeed at completing the tasks.

**Problem Statement**

Customers often need to complete highly specific tasks on Web sites, but pages with tangential links and many questions can prevent them from carrying out these tasks successfully.

People enjoy completing the tasks they start. Yet all kinds of distractions—including links that lead off the critical path, extra steps, and extra content—can inadvertently lead them away from accomplishing their goals. These diversions can have legitimate purposes, however, such as providing continuity, giving visitors opportunities to explore, providing instructions, or providing extra details. Striking a balance between these various forces and the task at hand can be challenging.

**Forces & Solution**

To minimize the number of steps required to complete a task, customers are to be kept on track and made aware of how much farther they have to go to complete the task. It is often not worth your time to press forward but clickable because doing so benefits the customer.

Remove Unnecessary Links and Content While Reinforcing the Brand • Removing links and content unrelated to the task at hand will reduce the clutter, making it more likely that your customers will complete their task. Remove all navigation bars (K2), tabbed panels and crumbs (K6), and embedded links (K7), leaving buttons (K4) that help visitors reach their goals. Take out any content that is superfluous to the task.

Reinforce the Web site brand to minimize any disorientation customers might feel from sudden changes in navigation options. Use the same colors, font, and logo throughout the Web site so that no one is ever lost or confused. Make sure that people know they’re still on the same site.
Use Pop-Up Windows to Provide Extra Information, without Leading Visitors Out of the Process Funnel • Sometimes customers need additional information that you have not provided on a page, such as extra help or product details. Provide a link to a pop-up window (H6) containing clean product details (F2) (see Figure H1.1), context-sensitive help (H8), or information from the frequently asked questions (H7) page, to make the extra information less intrusive. Your challenge is to implement this extra content without detracting from the main purpose.

Make Sure the Back Button Always Works • Customers often use the Back button on browsers to modify answers they have typed in on previous pages. However, if the Web site is not implemented correctly, the information they have already entered may be lost when they hit the Back button, forcing them to type everything again. In the worst case, people get a cryptic error message saying that the posted information was lost. You can address this annoying problem by temporarily storing the information they type in on each page, redisplaying this information if customers hit the Back button, and then overriding the temporarily stored information on the page if it is changed.

Always Make It Clear How to Proceed to the Next Step • Some Web pages are longer than can be displayed on a customer’s Web browser. The problem is that people sometimes get lost if the critical action button (K4), the one that takes them to the next step, is hidden below the fold. Place high-visibility action buttons (K5) both high and low on the page, ensuring that at least one of the critical action buttons is visible without scrolling.

Prevent Errors Where Possible, and Provide Clear Error Messages and Guidance • People will always make mistakes, so your Web design must accommodate them. You can provide good customer service by providing clear and sample input to help prevent errors, and meaningful error messages (K1) that explain what went wrong.

**SOLUTION**

Minimize the number of steps required to complete a task, keeping them between two and eight. Remove unnecessary and potentially confusing links and content from each page, while reinforcing the brand to maintain a sense of place. Use pop-up windows to provide extra information, without leading people out of the process funnel. Make sure the Back button always works so that customers can correct errors. Make it clear how to proceed to the next step.

**Solution Summary**

**Bus Stops**

A process funnel lets people complete their goals by breaking down complicated tasks into a small number of steps, using pop-up windows for detailed information, and reducing the number of links to only the critical ones, so that people are never distracted.

**Related Patterns**

Many kinds of Web sites use process funnels, including sites for personal e-commerce (A1), self-service government (A4), web apps that work (A10), and enabling intranets (A11). Customers use process funnels when they finalize purchases through quick-flow checkout (F1), when they create new accounts through sign-in/new account (H2), and when they post new messages to a recommendation community (G4), to name some examples.

Remove navigation bars (K2), tab rows (K3), irrelevant action buttons (K4), location breadcrumbs (K6), and embedded links (K7) to ensure that customers stay on their paths. However, keep strong site branding (E1) so that customers still know where they are.

Design process funnels to prevent errors (K12), and provide meaningful error messages (K13) when errors do occur.

Track your customers through persistent customer sessions (H5) to avoid problems with the Back button, and to save customer-entered information.

Move extra content, such as context-sensitive help (H8) and frequently asked questions (H7), to pop-up windows (H6) to keep the main task page on the screen. Make the next action visible by keeping it above the fold (I1) and by using high-visibility action buttons (K5).
Pre-Patterns

Patterns require broad adoption and examples

- Many version of the same basic idea
- Shown successful in many contexts
- That is what makes them patterns

This is challenging in novel domains

Pre-patterns are based in weaker evidence

- Can help speed diffusion of techniques and results
- Can help see relationships among ideas
UbiComp Pre-Patterns

Literature review

Button-up card sorting of lessons from literature

Cut down based on critique by other researchers
Displaying people’s location • There are several different ways of displaying a person’s location. A straightforward approach is to simply show the location in text, for example “near corner of Euclid Ave and Hearst Ave” or “in Soda Hall”. Another approach is to show the data on a map, or possibly even an ACTIVE MAP (B1) that is constantly updated.

Figure 1. AT&T Wireless’ mMode service allows customers to add friends to a friend list, find out who is nearby, and call or send messages to them. Users can make themselves invisible whenever they want.

Figure 2. UC San Diego’s ActiveCampus project shows your friends’ location in real time. While useful, this visualization raises many privacy concerns.

Managing privacy concerns • There are many privacy concerns about find-a-friend applications due to the potential for abuse. This is not just the fear of “Big Brother,” but also so-called “Little Brother” who can observe.

• BACKGROUND
This pattern discusses services that allow people to find where their friends are while allowing those friends some level of privacy. This pattern is useful for GUIDES FOR EXPLORATION AND NAVIGATION (A5).

• PROBLEM
People would like to know where their friends are, for impromptu communication and gatherings. At the same time, those people may not always want to be tracked.
# UbiComp Pre-Patterns

<table>
<thead>
<tr>
<th>A – Ubiquitous Computing Genres</th>
<th>B – Physical-Virtual Spaces</th>
<th>C – Developing Successful Privacy</th>
<th>D – Designing Fluid Interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describes broad classes of emerging applications, providing many examples and ideas</td>
<td>Associating physical objects and spaces with information and meaning; location-based services; helping users navigate such spaces</td>
<td>Policy, systems, and interaction issues in designing privacy-sensitive systems</td>
<td>How to design for interactions involving dozens or even hundreds of sensors and devices while making users feel like they are in control</td>
</tr>
</tbody>
</table>

### Upfront Value Proposition (A1)
- Personal Ubiquitous Computing (A2)
- Ubiquitous Computing for Groups (A3)
- Ubiquitous Computing for Places (A4)
- Guides for Exploration and Navigation (A5)
- Enhanced Emergency Response (A6)
- Personal Memory Aids (A7)
- Smart Homes (A8)
- Enhanced Educational Experiences (A9)
- Augmented Reality Games (A10)
- Streamlining Business Operations (A11)
- Enabling Mobile Commerce (A12)

<table>
<thead>
<tr>
<th>B – Physical-Virtual Spaces</th>
<th>C – Developing Successful Privacy</th>
<th>D – Designing Fluid Interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Map (B1)</td>
<td>Fair Information Practices (C1)</td>
<td>Scale of Interaction (D1)</td>
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<tr>
<td>Topical Information (B2)</td>
<td>Respecting Social Organizations (C2)</td>
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<tr>
<td>Successful Experience Capture (B3)</td>
<td>Building Trust and Credibility (C3)</td>
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<td>User-Created Content (B4)</td>
<td>Reasonable Level of Control (C4)</td>
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<tr>
<td>Find a Place (B5)</td>
<td>Appropriate Privacy Feedback (C5)</td>
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<tr>
<td>Find a Friend (B6)</td>
<td>Privacy-Sensitive Architectures (C6)</td>
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<td>Notifier (B7)</td>
<td>Partial Identification (C7)</td>
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<td></td>
<td>Physical Privacy Zones (C8)</td>
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<td></td>
<td>Blurred Personal Data (C9)</td>
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<td></td>
<td>Limited Access to Personal Data</td>
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<td></td>
<td>(C10)</td>
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<td></td>
<td>Invisible Mode (C11)</td>
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<td></td>
<td>Limited Data Retention (C12)</td>
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<td></td>
<td>Notification on Access of Personal Data (C13)</td>
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<tr>
<td></td>
<td>Privacy Mirrors (C14)</td>
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<tr>
<td></td>
<td>Keeping Personal Data on Personal Devices (C15)</td>
<td></td>
</tr>
</tbody>
</table>

### Scale of Interaction (D1)
- Sensemaking of Services and Devices (D2)
- Streamlining Repetitive Tasks (D3)
- Keeping Users in Control (D4)
- Serendipity in Exploration (D5)
- Context-Sensitive I/O (D6)
- Active Teaching (D7)
- Resolving Ambiguity (D8)
- Ambient Displays (D9)
- Follow-me Displays (D10)
- Pick and Drop (D11)
Patterns

When you see advice, consider its depth

- Result of an individual study
- Pre-pattern based on some meta-analysis
- Established pattern

Be aware of misapplying patterns
Touch and Microsoft Windows

2004

2012
Consistency vs. Specialization

Beware of simply copying a design language

Consistency is your friend until it is not your friend

Not limited to platform-level decisions

One “look” for your app

Or targeted at each device
CSE 440: Introduction to HCI
User Interface Design, Prototyping, and Evaluation

Lecture 12:
Testing, Patterns, Anti-Patterns

James Fogarty
Daniel Epstein
Brad Jacobson
King Xia

Tuesday/Thursday
10:30 to 11:50
MOR 234