UI Patterns for iOS, Android, and More

Mobile Design Pattern Gallery

Theresa Neil

Foreword by Jenifer Tidwell

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Mobile Design Pattern Gallery

When you're under pressure to produce a well designed, easy-to-navigate mobile app, there's no time to reinvent the wheel. This concise book provides a handy reference to 70 mobile app design patterns, illustrated by more than 400 screenshots from current iOS, Android, BlackBerry, WebOS, Windows Mobile, and Symbian apps.

User experience professional Theresa Neil (*Designing Web Interfaces*) walks you through design patterns in 10 separate categories, including anti-patterns. Whether you're designing a simple iPhone application or one that's meant to work for every popular mobile OS on the market, these patterns provide solutions to common design challenges.

Pattern categories include:

- **Navigation:** get patterns for primary and secondary navigation
- **Forms:** break the industry-wide habits of bad form design
- **Tables and lists:** display only the most important information
- **Search, sort, and filter:** make these functions easy to use
- **Tools:** create the illusion of direct interaction
- **Charts:** learn best practices for basic chart design
- **Invitations:** invite users to get started and discover features
- **Controls and feedback:** help users perform actions, and provide them with timely feedback
- **Help:** integrate help pages into a smaller form factor

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Praise for *Mobile Design Pattern Gallery*

"It's a super handy catalog that I can flip to for ideas."

—Bill Scott, Senior Director of Web Development at PayPal

"Looks fantastic."

—Erin Malone, Partner at Tangible UX

"Just a quick thanks to express my sheer gratitude for this pub, it has been a guide for me reworking a design for an app already in production!"

—Agatha June, UX designer

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Theresa Neil

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by Theresa Neil

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Foreword

To name something is to begin to understand it.

My five-year-old son, like many children, enjoys looking at clouds. A few weeks ago, he clued into the fact that different kinds of clouds had different names. And so, being of good geek stock, he proceeded to memorize them—cirrus, cumulus, stratus, cirrostratus, cumulonimbus, altostratus, lenticular; all of the ones I knew, and then some. I'd certainly never heard of "cumulus congestus" before.

Now, when he looks at the sky, he can tell me which clouds are which. More than that, he notices more than he did before, and with greater nuance. He has learned to visually discriminate among cloud types based on texture, color, height, movement, and who knows what else. (They're not always easy to tell apart, of course, but that doesn't bother him.) He can predict, with some accuracy, which ones might drop rain on us and which won't.

And in his limited preschooler's fashion, he uses his cloud knowledge to analyze the big picture. "Cirrostratus clouds might mean a warm front," he points out. Or, "Cumulus congestus might turn into cumulonimbus! Then we could get a storm."

Above all, he enjoys knowing these names. Little kids seem to get a kick out of naming the things they love, whether they're clouds, dinosaurs, bugs, cars, dolls, or movie characters. Certainly their imaginations aren't limited by that left-brain knowledge, despite our grownup romantic biases—my son still sees palaces and ducks and cauliflowers in the clouds, even as he names them "cumulus."

So it is with us grownups. That brings us to the topic at hand: by recognizing and naming patterns in interfaces, we "see" those interfaces better. We notice more details, because our brains are more attuned to what we should look for. We can start to predict the workings of the software we use, because we know how certain interface patterns should behave. Then we can tell other people what we see via an expressive new vocabulary.

And how do we learn these patterns?

When my son learned about clouds, the best tool he had were pictures. Lots of pictures. After looking at some of these "catalogs" in books and websites, he learned to see rather subtle differences between cloud types, some of which are hard to describe verbally.

Likewise, the best way to learn interface patterns is to see visual examples. Now, I'm a writer, so I love words. When not restrained by courtesy, I would happily go on endlessly about what patterns are, how to choose them, and the differences between them! But it's clear to me that anyone who simply wants to design interfaces—that is, anyone who needs to know patterns as one component of their craft knowledge—won't really need all those words. For a given pattern, they need just enough explanation to "get it," and then they need to see a range of well-chosen real life examples to solidify and internalize that knowledge.

In this book, Theresa Neil has pulled together a spectacular collection of pictures of patterns. I can't imagine the work that went into this, having tried it myself—it's no small feat to review this many mobile apps, see what works best in them, and gather up all these carefully catalogued screenshots.

For mobile interface designers, this book is a treasure. Read it straight through if you'd like, but more than that, use its examples to improve your own designs.

- Use your own judgment about what works well in these examples, and figure out what may work best in the context of whatever you're designing.
- Use it as a sourcebook for design inspiration. I found myself admiring these screenshots for design aspects that had nothing to do with the patterns themselves, such as icon design and color usage.
- Use it to expand your knowledge of how existing apps work, without laboriously downloading and using them all (and on several devices, don't forget).

You might even go out and find your own pattern examples in the mobile apps you use daily. In fact, I'd bet that once you learn these pattern names, you won't be able to avoid doing so. Having had my son point out "cumulus congestus" in the wild a few times, I know it well, and, gosh—I don't know how I ever lived without that knowledge.

Enjoy!

—Jenifer Tidwell

Preface

Introduction

We recently had a new mobile project starting and all of our experienced mobile designers were booked. This gave me less than a week to impart my mobile experiences to a new designer. So I made a quick tutorial with lots and lots of screenshots, illustrating good design and not so good design. Gradually a set of patterns for mobile application design emerged.

Even as I was cataloging these patterns, I knew that the real value wasn't only the pattern identification, but in the hundreds of examples I'd captured. So instead of a tome of abstract patterns only an author can love, this book is a showcase, or gallery, of mobile application design. This book includes 400+ current screenshots from iOS, Android, BlackBerry, WebOS, Symbian and Windows applications, organized by pattern type. And the accompanying site: www.mobiledesignpatterngallery, and Flickr photostream have even more examples.

Intended Audience for This Book

The Mobile Design Pattern Gallery is for product managers, designers and developers who are creating mobile applications. As companies are defining and refining their mobile strategy, it can be a challenge to find examples of design best practices, especially for multiple operating systems. Whether you have been tasked with designing a simple iPhone application, or designing for every popular operating system on the market, these patterns will provide solutions to common design challenges.

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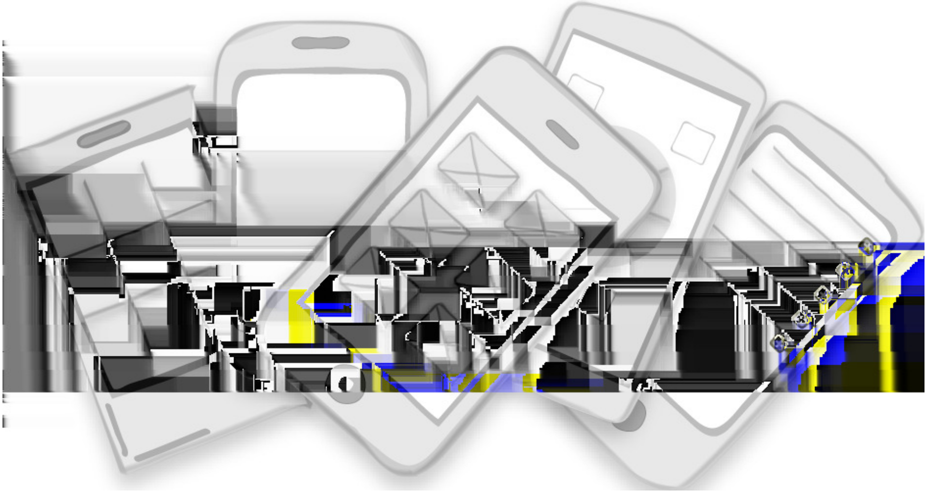
CHAPTER 1
Navigation



Primary Navigation Patterns: Springboard, List Menu, Tab Menu, Gallery, Dashboard, Metaphor, Mega Menu

Secondary Navigation Patterns: PageCarousel, Image Carousel, Expanding List

I like to read reviews in mobile marketplaces to better understand how people are using the apps. The marketplace rating system is an incredibly valuable feedback tool that doesn't exist for web and desktop applications. It provides a rich source of information about customers' preferences and expectations.

In general, most 4 and 5 star reviews aren't very specific. They often sound a lot like this: “What a great app, it looks good and works well”. The 1 and 2 star reviews are much more telling; they extensively outline the problems with the application. The most common complaints seem to revolve around:

- Crashing

- Lack of key features (syncing, filtering, account linking...)
- Poor navigation (can't go back, can't find things...)
- Confusing interface design

The first two issues can't be fixed with design patterns, but the third and fourth most common complaints can be. Following common design patterns for navigation will ensure that people can find and use the valuable features in your application.

Primary Navigation Patterns

Good navigation, like good design, is invisible. Applications with good navigation just feel intuitive and make it easy to accomplish any task, from browsing friends to applying for a car loan. While there may be many options for navigating content within an app, I want to focus on six patterns for primary navigation, i.e., patterns for the main menu:

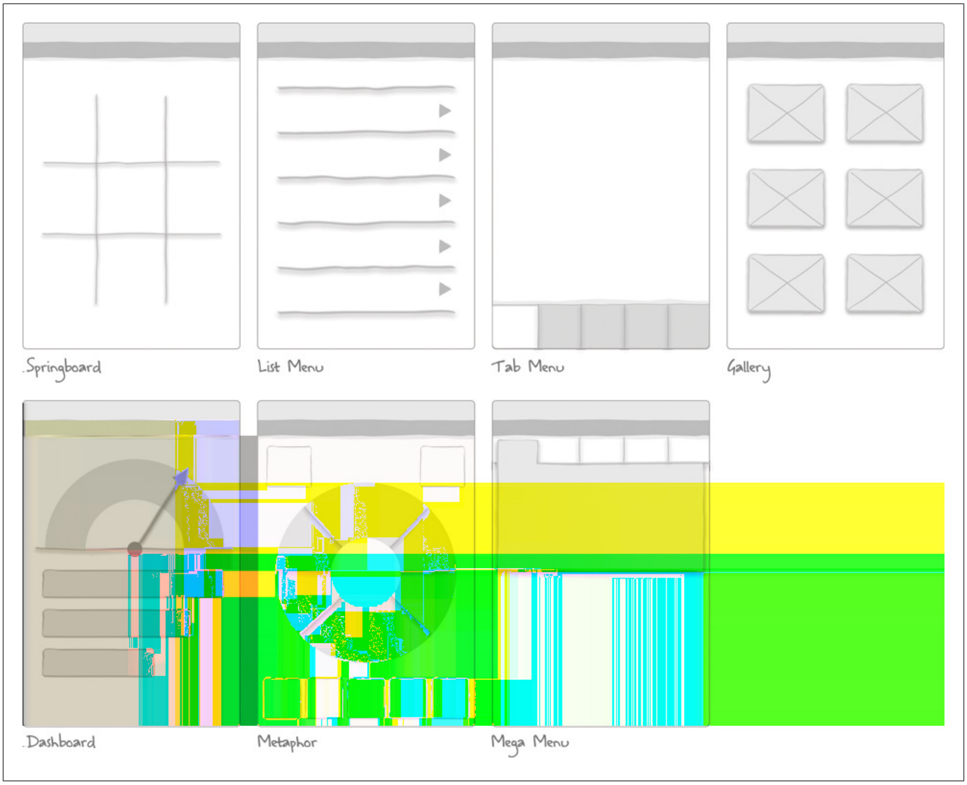


Figure 1-1. Primary Navigation Patterns

Springboard

The Springboard pattern is OS neutral, working equally well across devices. It is also sometimes referred to as a Launchpad. The Springboard is characterized by a landing page of menu options that act as a jumping off point into the application. Facebook followed the Springboard design of the iOS home screen, and they were quickly emulated by other applications.

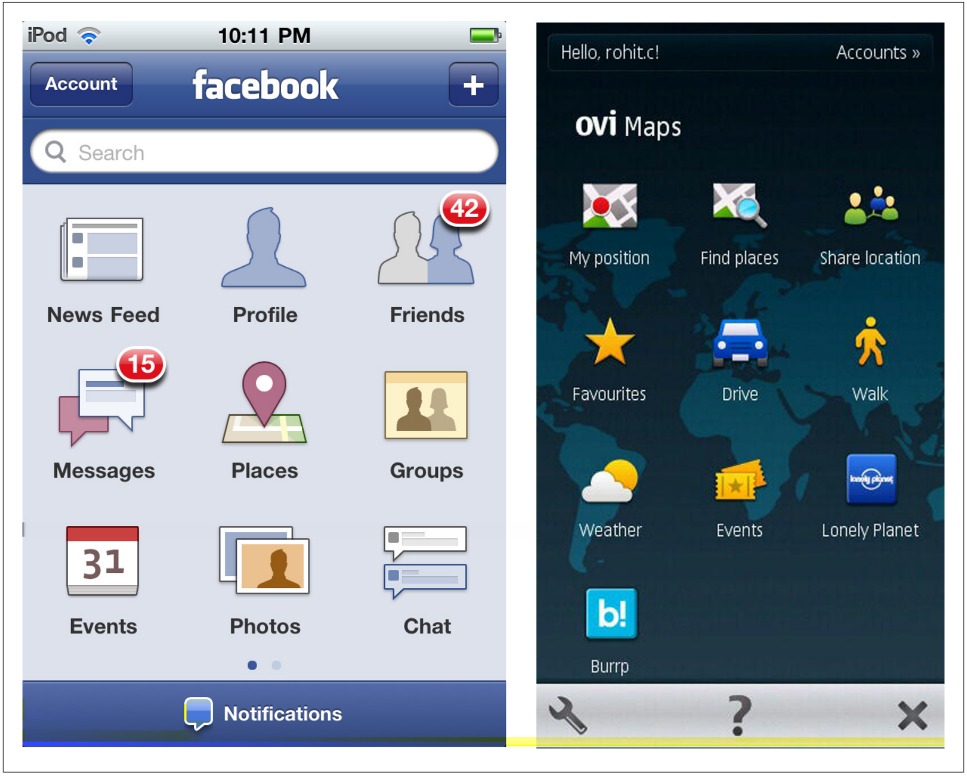


Figure 1-2. Facebook Springboard and Ovi Maps

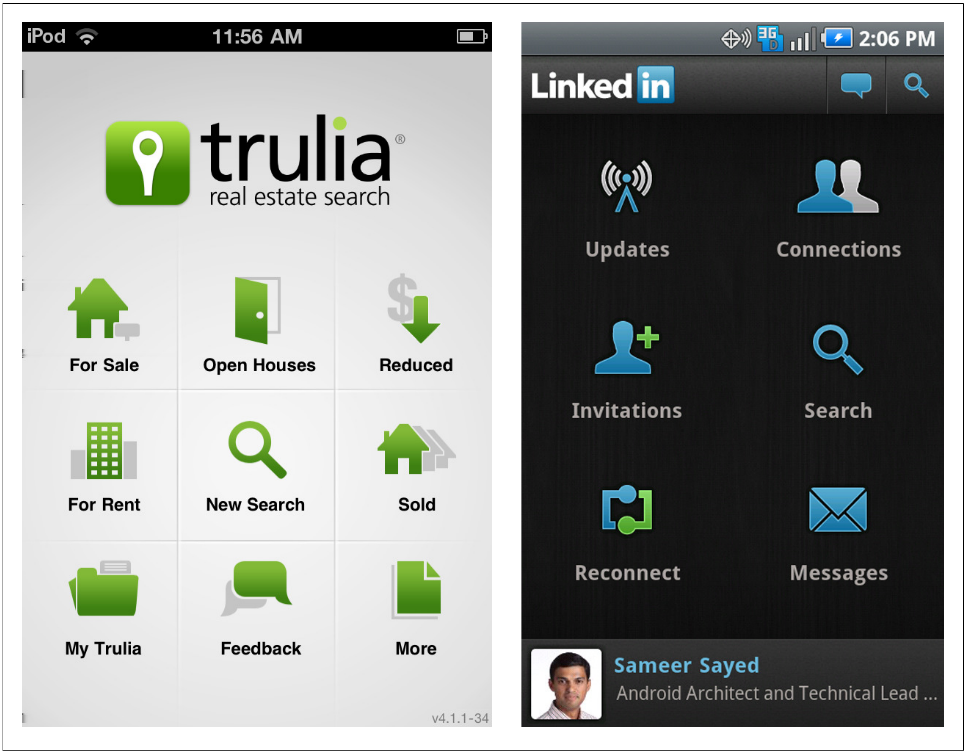


Figure 1-3. Trulia and LinkedIn

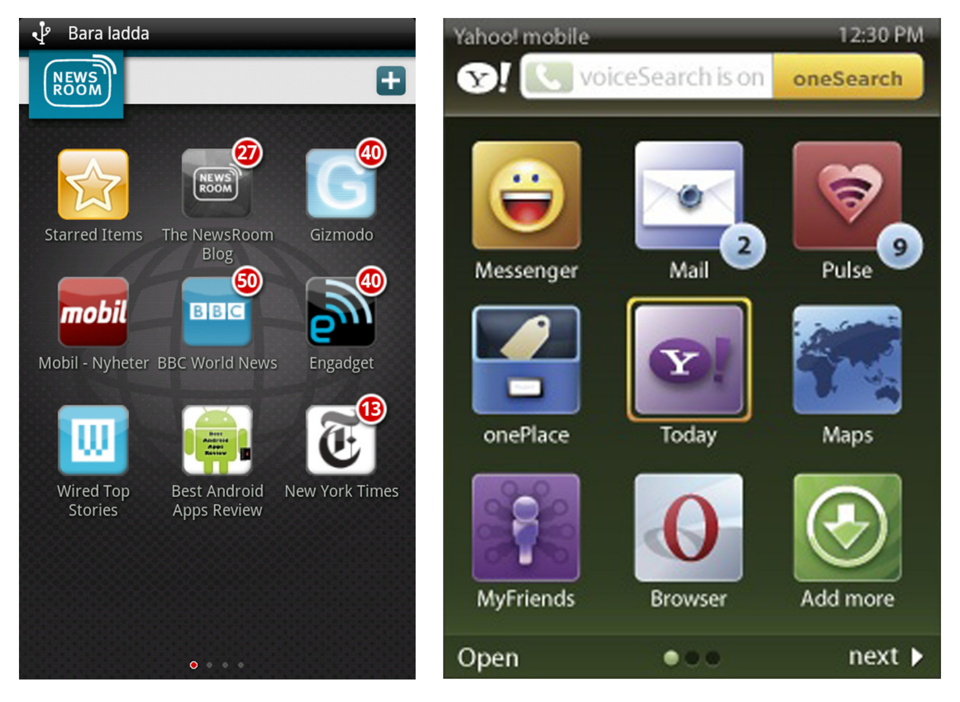
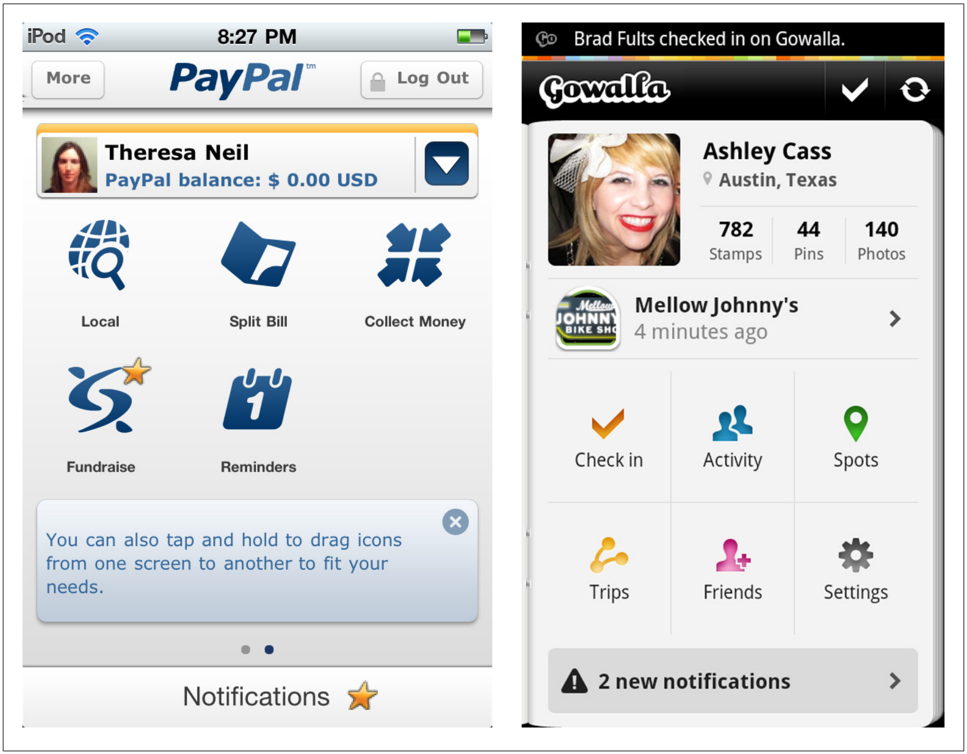


Figure 1-4. NewsRoom on Palm and Yahoo! on Nokia

Personalized Springboards can be used to display personal profile information inline with the menu options. Typically a customization feature is available for changing the Springboard layout.



You can also tap and hold to drag icons from one screen to another to fit your needs.

Brad Fults checked in on Gowalla.

Figure 1-5. PayPal personalized springboard and early Gowalla

Grids for 3x3, 2x3, 2x2, and 1x2 are the most common layouts. But a Springboard doesn't have to follow a grid layout. Some options can be proportionately larger to convey greater importance, like the video option in the Masters iPhone app is two to three times larger than the other menu items.

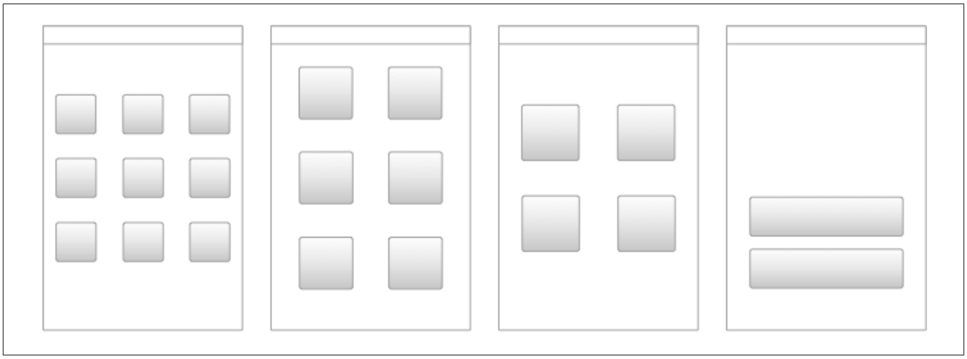


Figure 1-6. Grid layouts for springboards

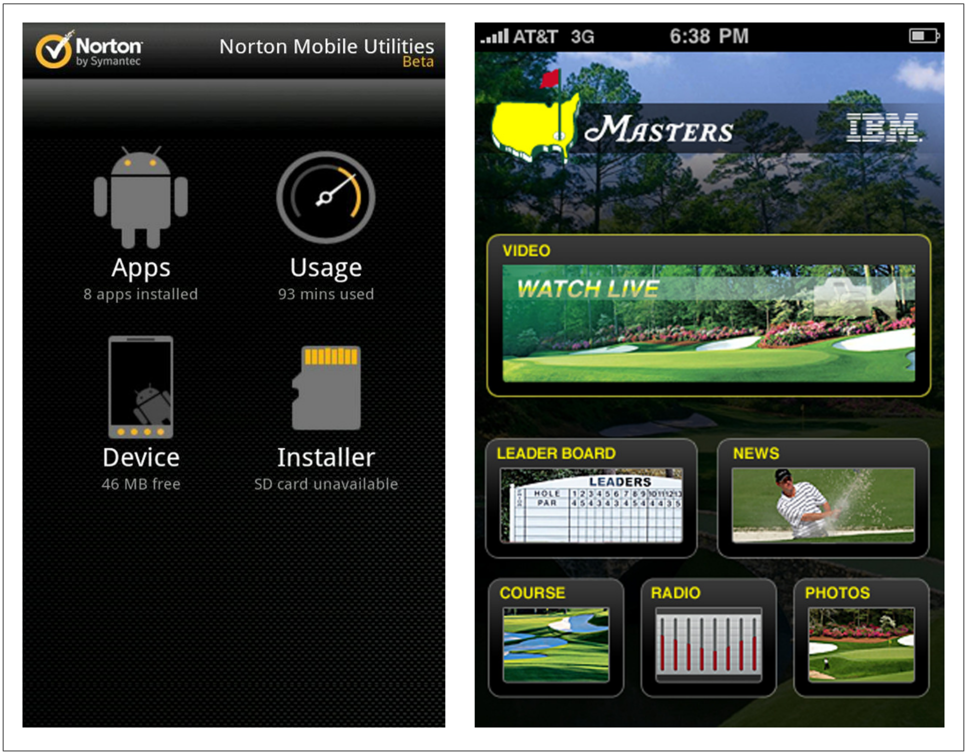


Figure 1-7. 2x2 grid layout, Norton Mobile; irregular layout, Masters

Use a grid layout for items of equal importance, or an irregular layout to emphasize some items more than others. Consider personalization and customization options.

List Menu

The List Menu is similar to that Springboard in that each is a jumping off point into the application. There are numerous variations of this pattern including personalized list menus, grouped lists, and enhanced lists. Enhanced lists are simple List Menus with additional features for searching, browsing or filtering.

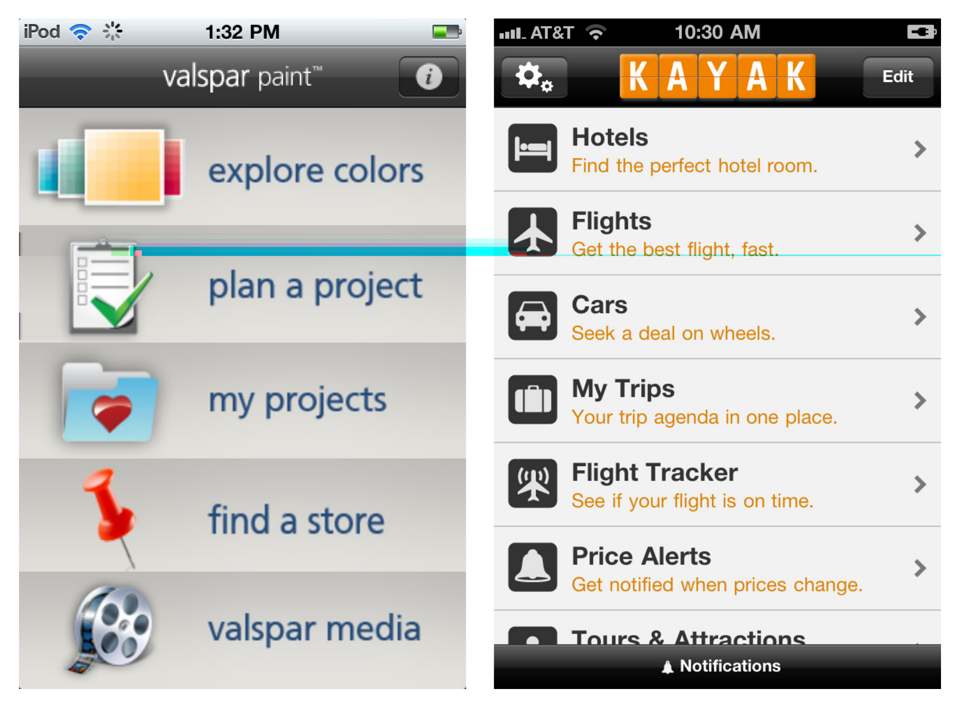


Figure 1-8. List menus: Valspar Paint and Kayak

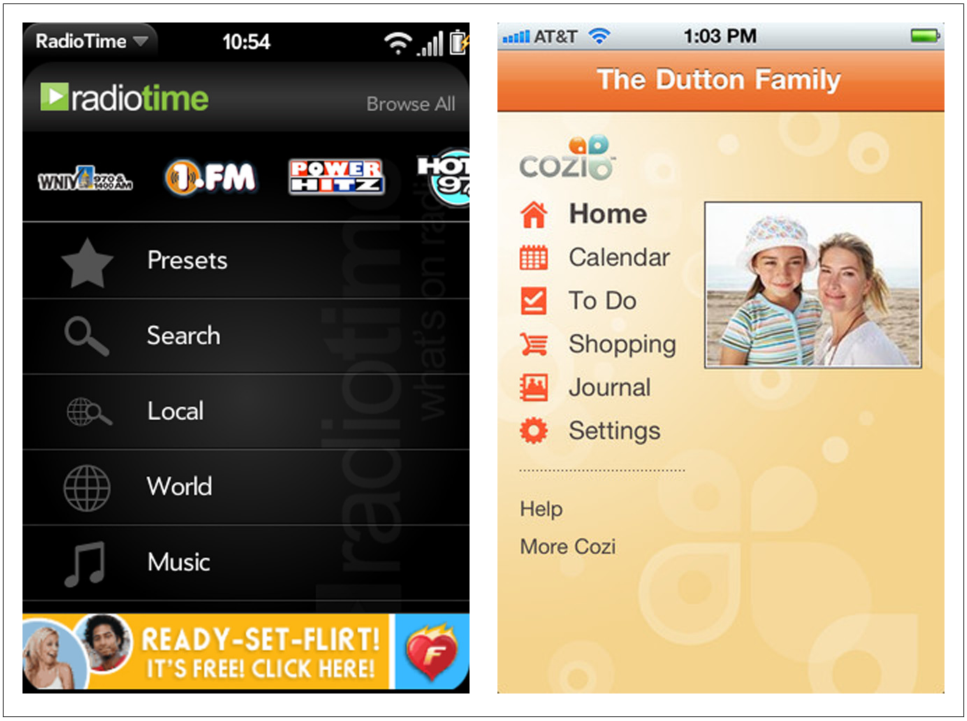


Figure 1-9. List menus: radiotime Palm and Cozi

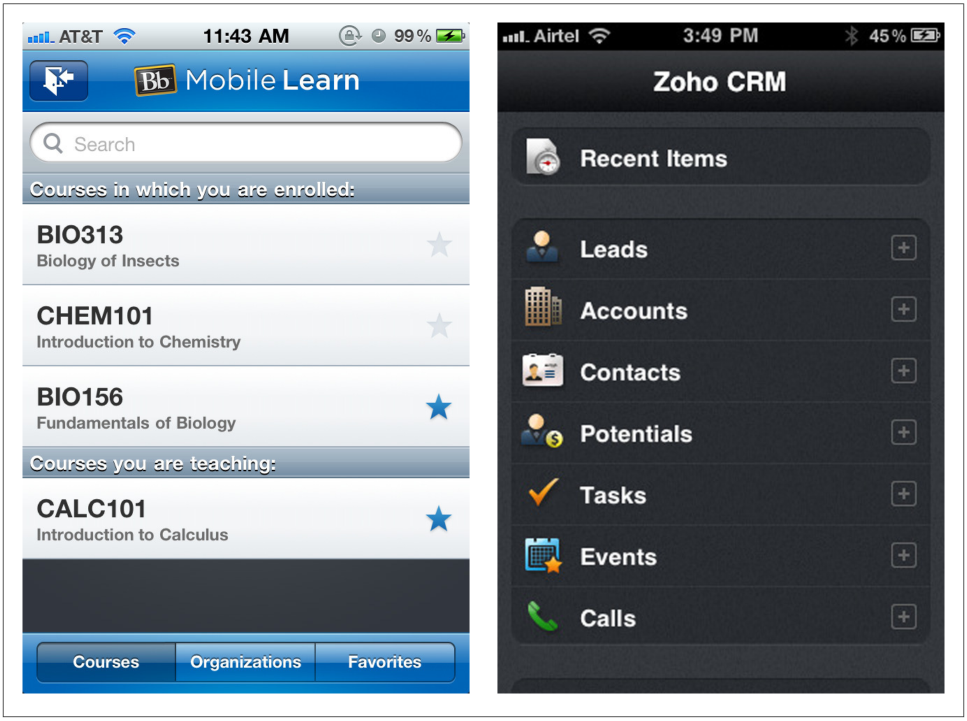


Figure 1-10. Personalized lists: Blackboard and Zoho CRM

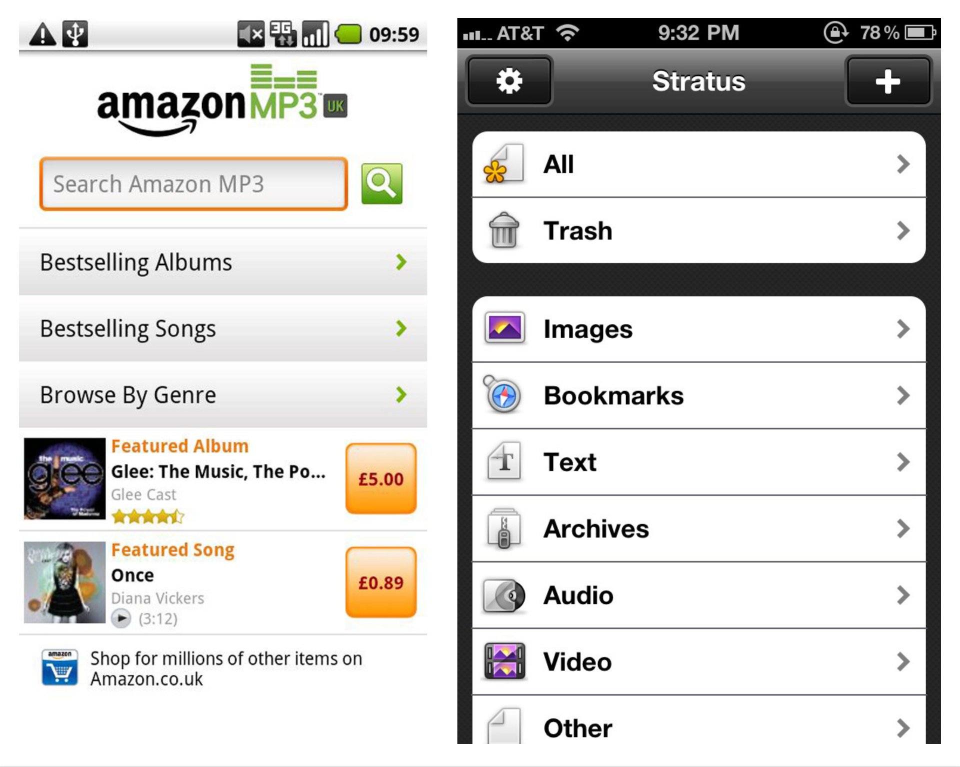


Figure 1-11. Enhanced list, Amazon MP3; grouped list, Stratus

List Menus work well for long titles or those that require sub text. Applications using List Menus should offer an option on all internal screens for returning to the List Menu, usually a button in the title bar with a list icon or the word "menu."

Tabs

Tab navigation is not OS neutral since each OS has their own guidelines for tab location and design. When choosing this pattern for your application, be prepared to customize the tab location for the different OSs.

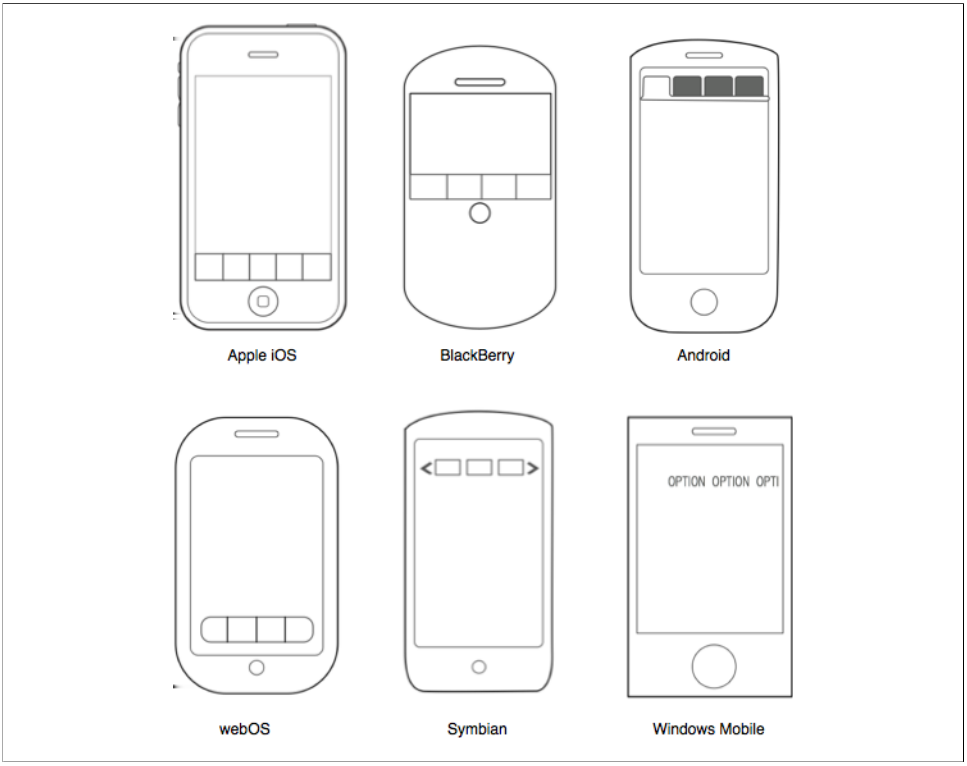


Figure 1-12. Tab orientation for various OSs

Bottom tabs, favored by iOS, WebOS, and BlackBerry, are the most thumb friendly option.

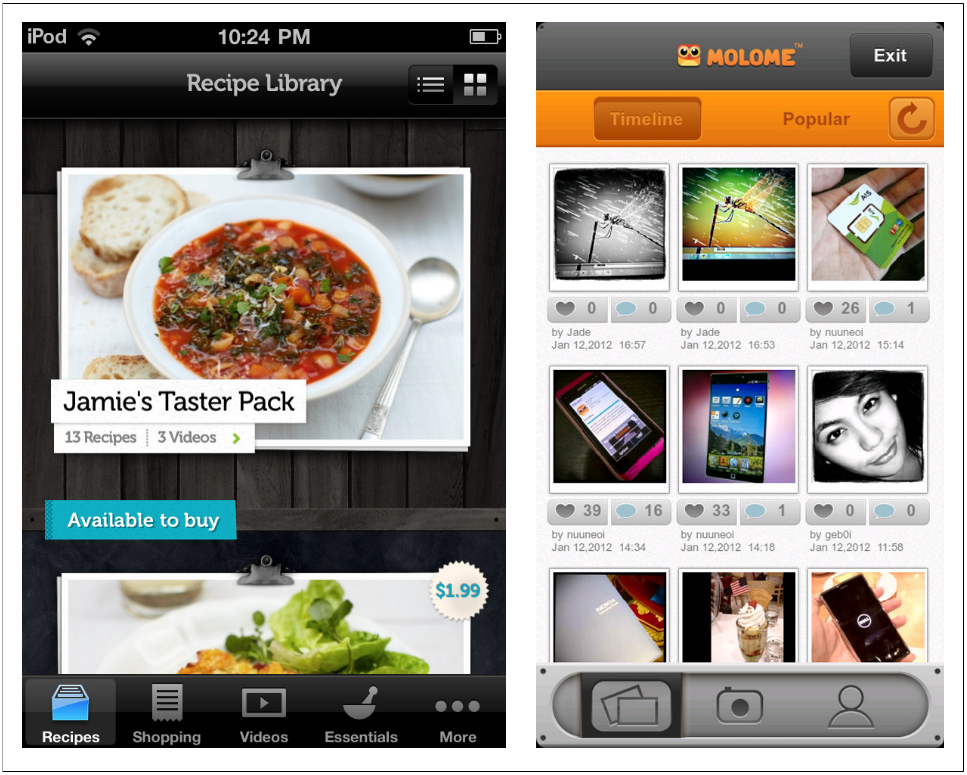


Figure 1-13. Jamie Oliver Recipes and Molome, bottom tabs

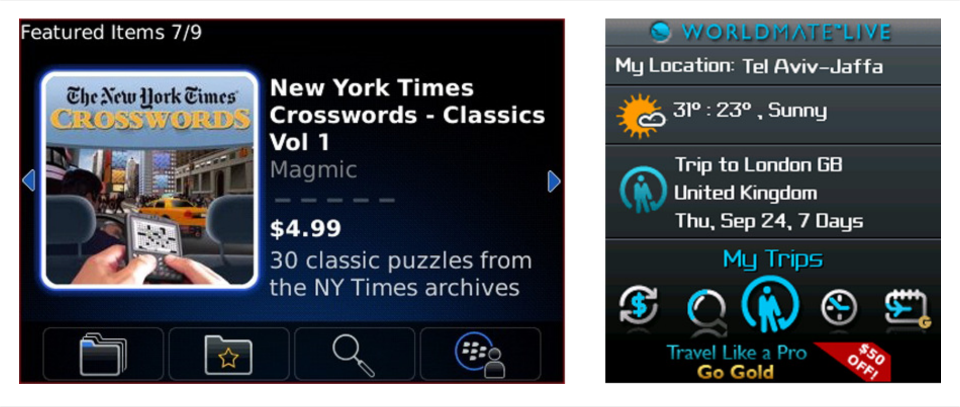


Figure 1-14. BlackBerry App World and WorldMate, bottom tabs

Horizontally scrolling bottom tabs, as shown in the Starbucks and Blue Mobile apps, provide a useful mechanism for offering more options without having to open up a More...screen.

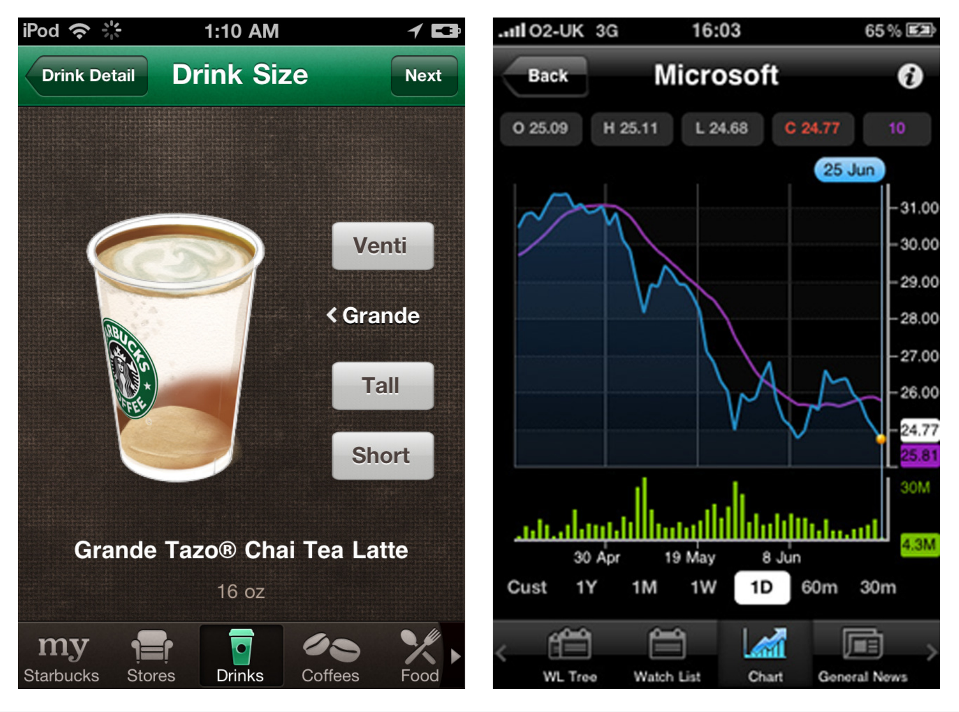
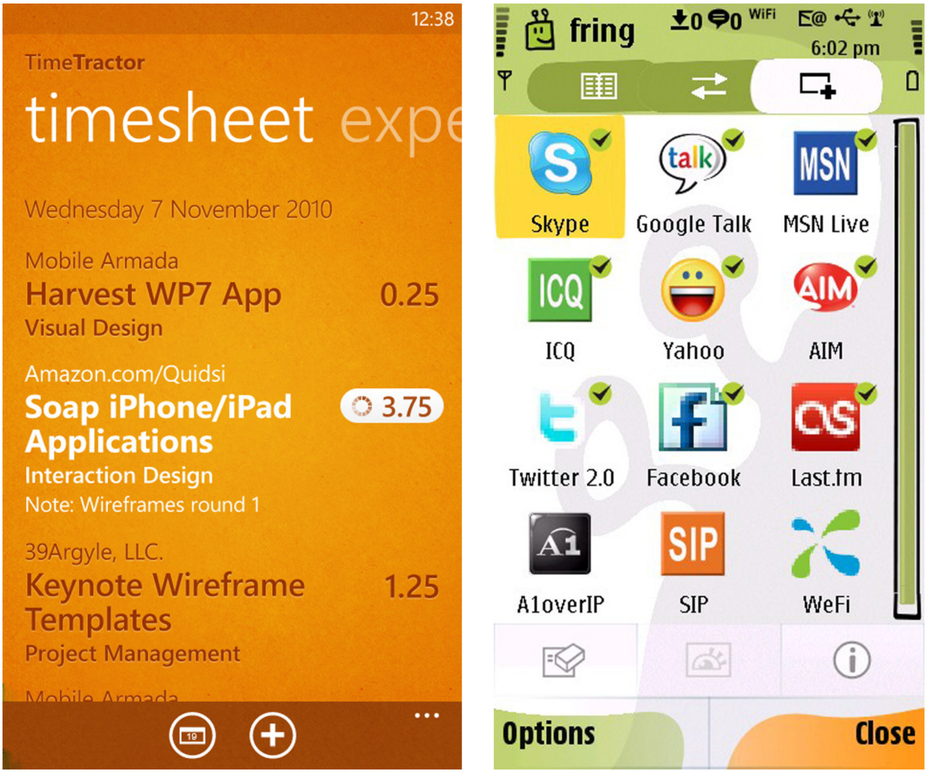


Figure 1-15. Starbucks and Blue Mobile, scrolling bottom tabs

Top tabs, favored by Android, Symbian, and Windows, look familiar since they are modeled after standard website navigation patterns. Nokia and Windows both use scrolling top tabs that you can flick to reveal more menu options.



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TimeTractor

timesheet expe

Wednesday 7 November 2010

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Soap iPhone/iPad Applications 3.75
Interaction Design
Note: Wireframes round 1

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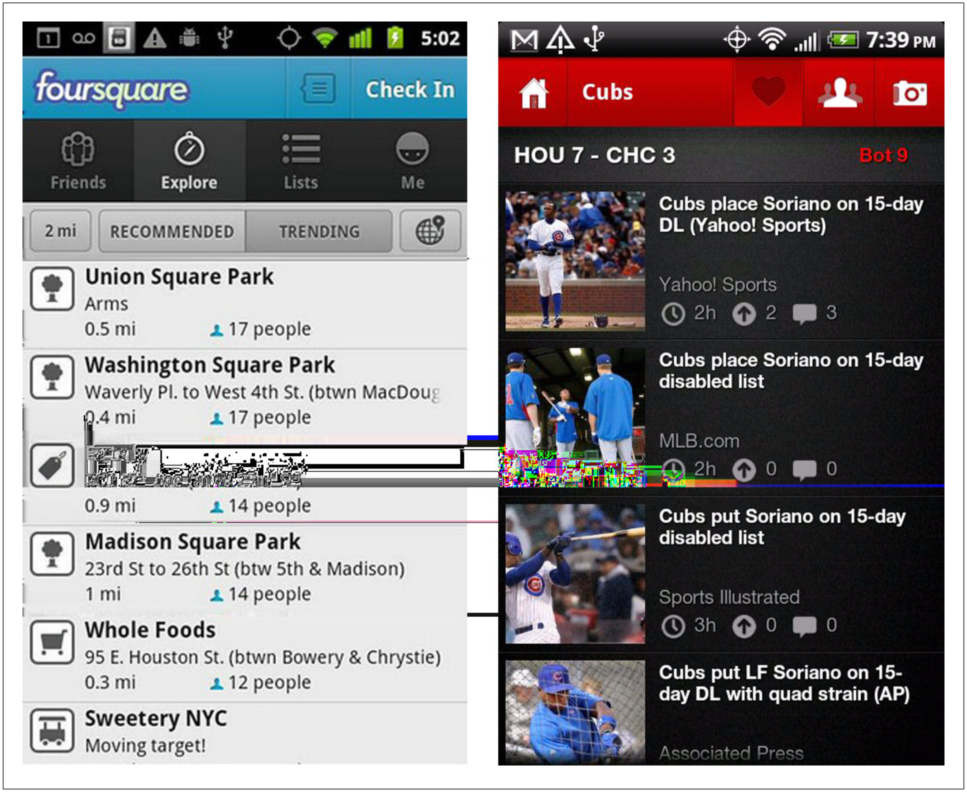
Figure 1-16. Harvest TimeTractor and Fring on Nokia, scrolling top tabs



Union Square Park
Arms
0.5 mi 17 people

Washington Square Park
Waverly Pl. to West 4th St. (btwn MacDoug
0.4 mi 17 people

0.9 mi 14 people

Madison Square Park
23rd St to 26th St (btw 5th & Madison)
1 mi 14 people

Whole Foods
95 E. Houston St. (btwn Bowery & Chrystie)
0.3 mi 12 people

Sweetery NYC
Moving target!

Cubs place Soriano on 15-day DL (Yahoo! Sports)
Yahoo! Sports
2h 2 3

Cubs place Soriano on 15-day disabled list
MLB.com
2h 0 0

Cubs put Soriano on 15-day disabled list
Sports Illustrated
3h 0 0

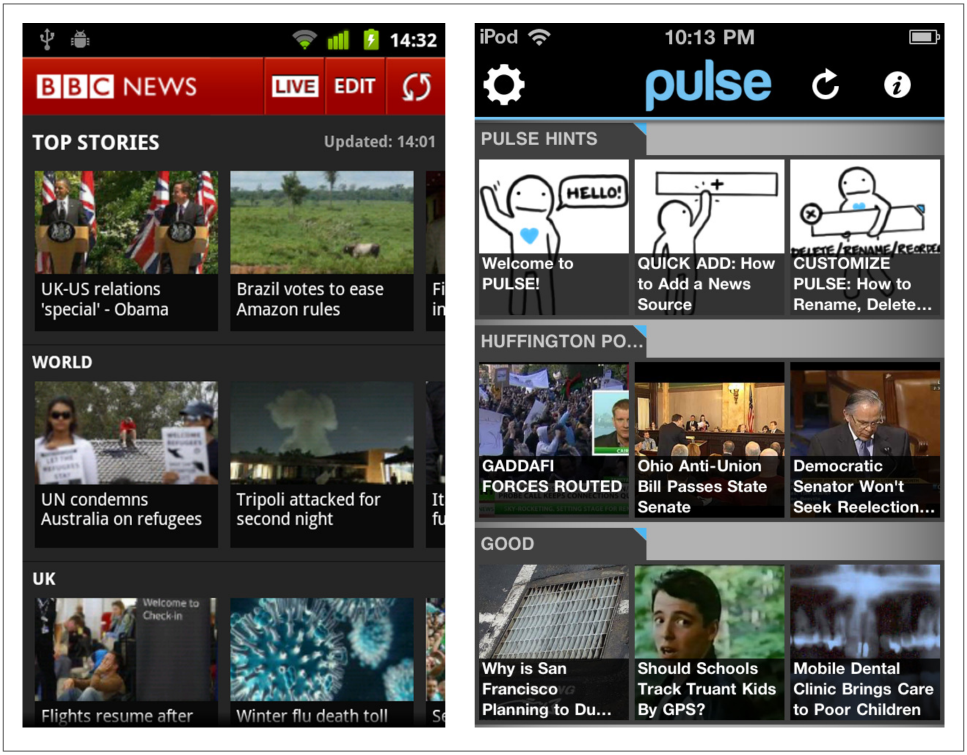
Cubs put LF Soriano on 15-day DL with quad strain (AP)
Associated Press

Figure 1-17. Foursquare and HitPost, top tabs

Clearly indicate the selected menu item by visually differentiating the selected tab from the others. Use easy to recognize icons or icons with labels.

Gallery

The Gallery pattern surfaces individual pieces of content for navigation. Content is usually individual articles, recipes, photos, or products and can be arranged in a carousel, grid, or slideshow.



UK-US relations 'special' - Obama

Brazil votes to ease Amazon rules

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Tripoli attacked for second night

Flights resume after

Winter flu death toll

Welcome to PULSE!

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GADDAFI FORCES ROUTED

Ohio Anti-Union Bill Passes State Senate

Democratic Senator Won't Seek Reelection…

Why is San Francisco Planning to Du…

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Mobile Dental Clinic Brings Care to Poor Children

Figure 1-18. BBC and PULSE

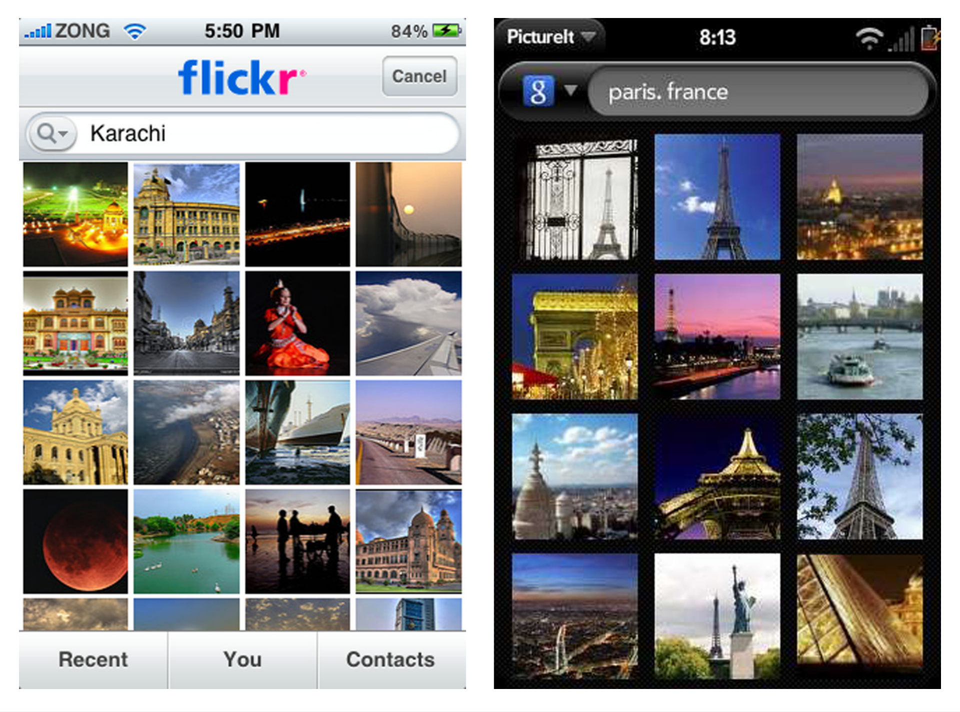


Figure 1-19. Flickr and PictureIt Palm

Sometimes the content will be easier to browse if it is grouped. Dwell use side tabs to organize gallery content into manageable chunks.

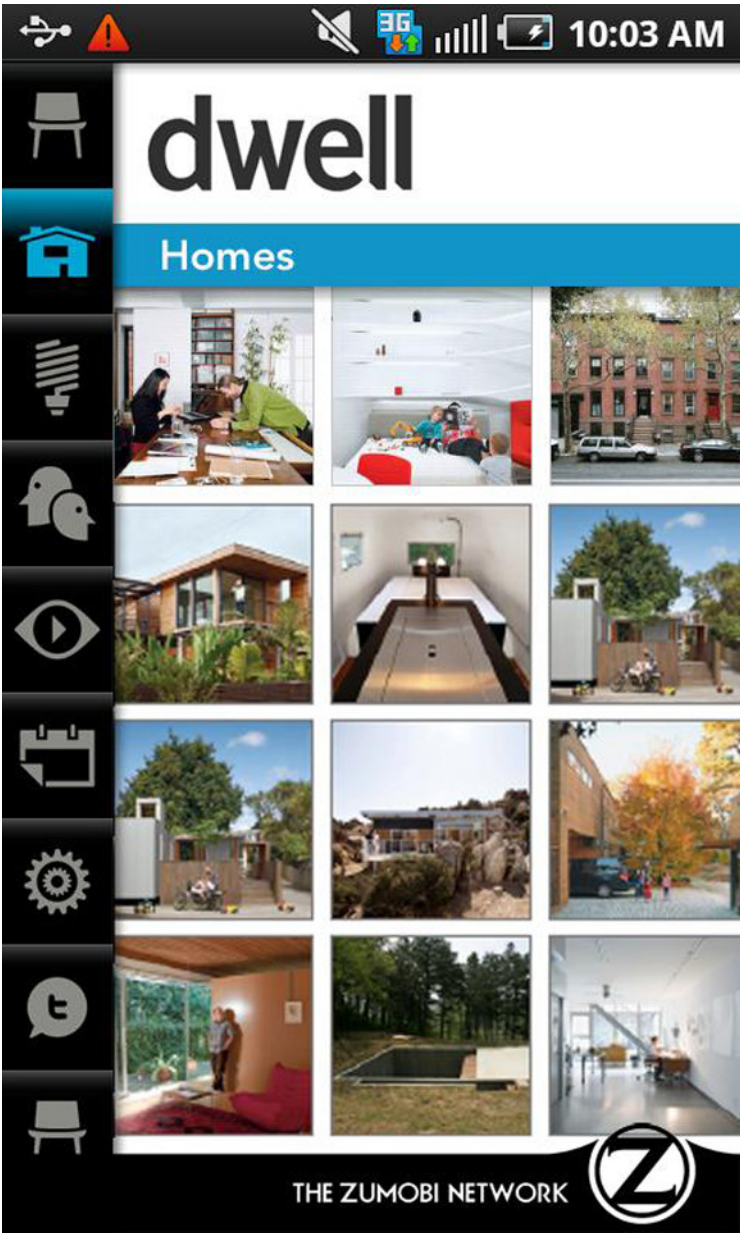
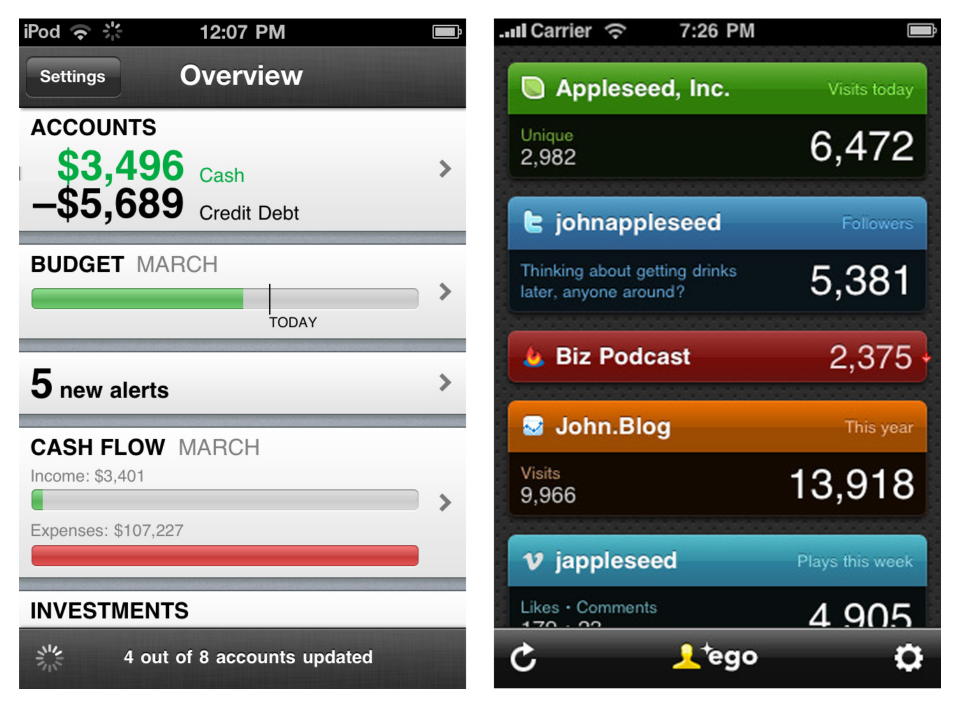


Figure 1-20. Dwell

The Gallery pattern works best for frequently updated content that people want to browse.

Dashboard

Dashboards provide a roll-up of key performance indicators, KPIs. Each metric can be drilled into for additional information. This primary navigation pattern is useful for financial applications, analytics tools and sales and marketing applications.



ACCOUNTS
$3,496 Cash
–$5,689 Credit Debt

BUDGET MARCH
TODAY

5 new alerts

CASH FLOW MARCH
Income: $3,401
Expenses: $107,227

INVESTMENTS

4 out of 8 accounts updated

Appleseed, Inc. Visits today
Unique 2,982 6,472

johnappleseed Followers
Thinking about getting drinks later, anyone around? 5,381

Biz Podcast 2,375

John.Blog This year
Visits 9,966 13,918

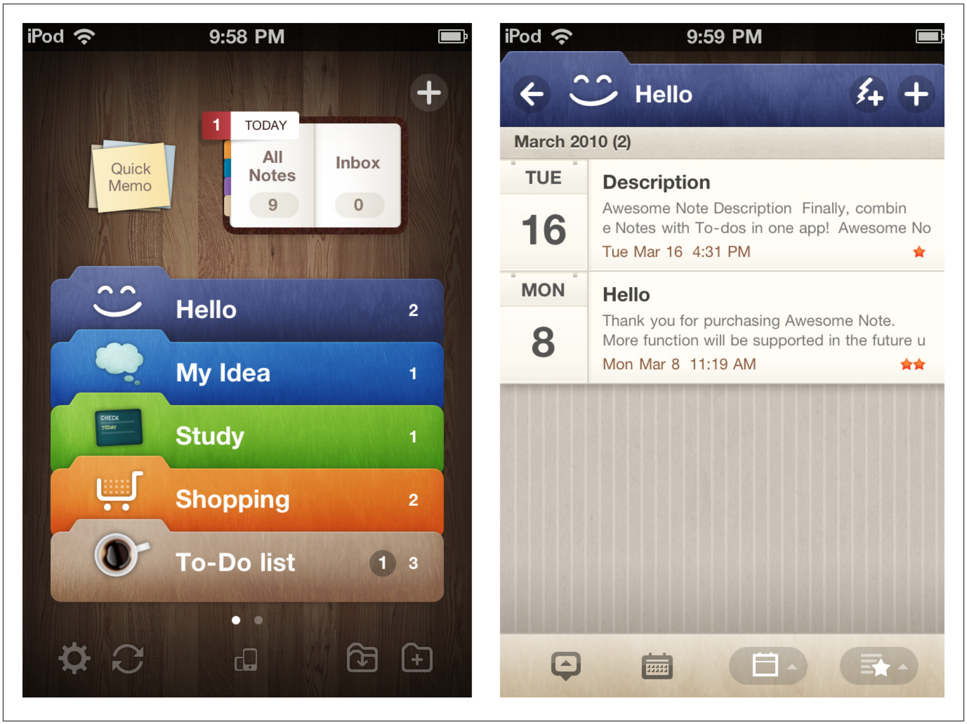
jappleseed Plays this week
Likes · Comments 4,905

Figure 1-21. Mint and ego dashoards

Don't overload the dashboard; conduct research to determine the key metrics to include.

Metaphor

This pattern is characterized by a landing page modeled to reflect the application's metaphor. This is used primarily in games, but can also be seen in applications that help people catalog and categorize items, like notes, books, wine, etc.



Description
Awesome Note Description Finally, combin e Notes with To-dos in one app! Awesome No
Tue Mar 16 4:31 PM

Hello
Thank you for purchasing Awesome Note. More function will be supported in the future u
Mon Mar 8 11:19 AM

Figure 1-22. Awesome Note

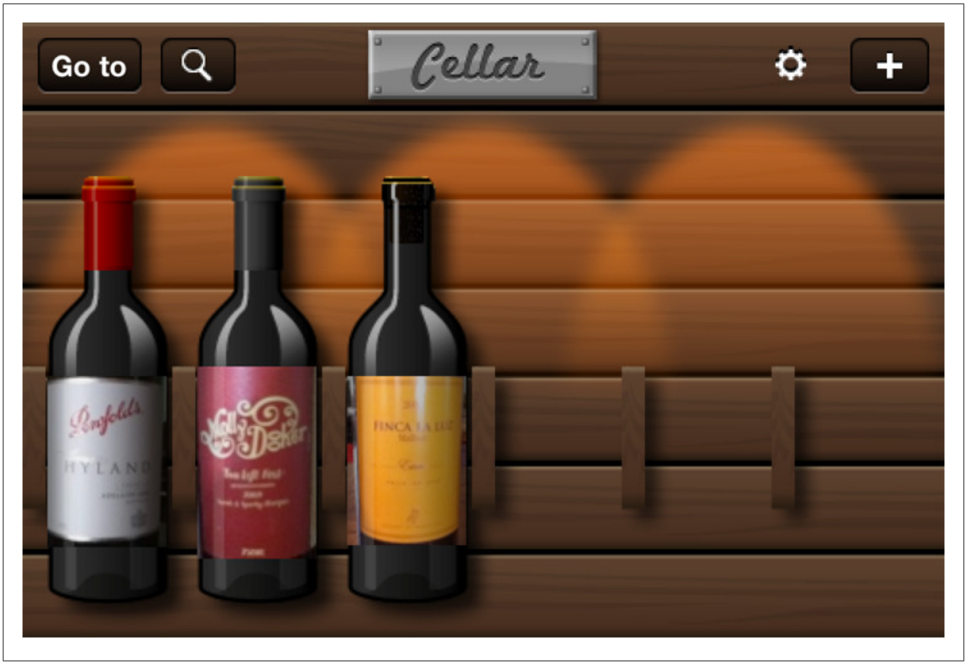
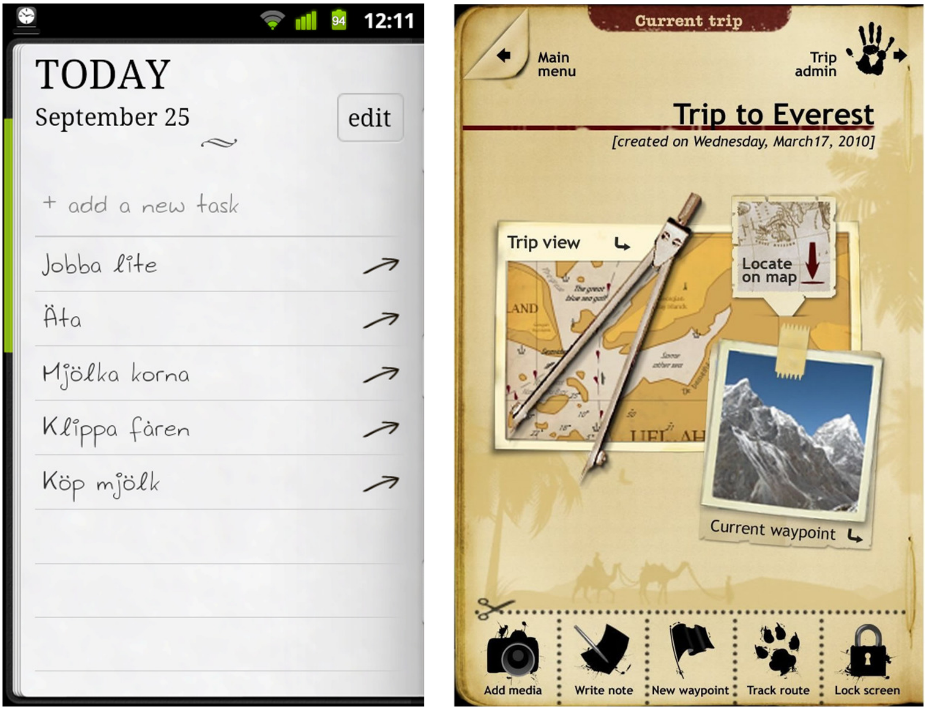


Figure 1-23. Cellar



Jobba lite

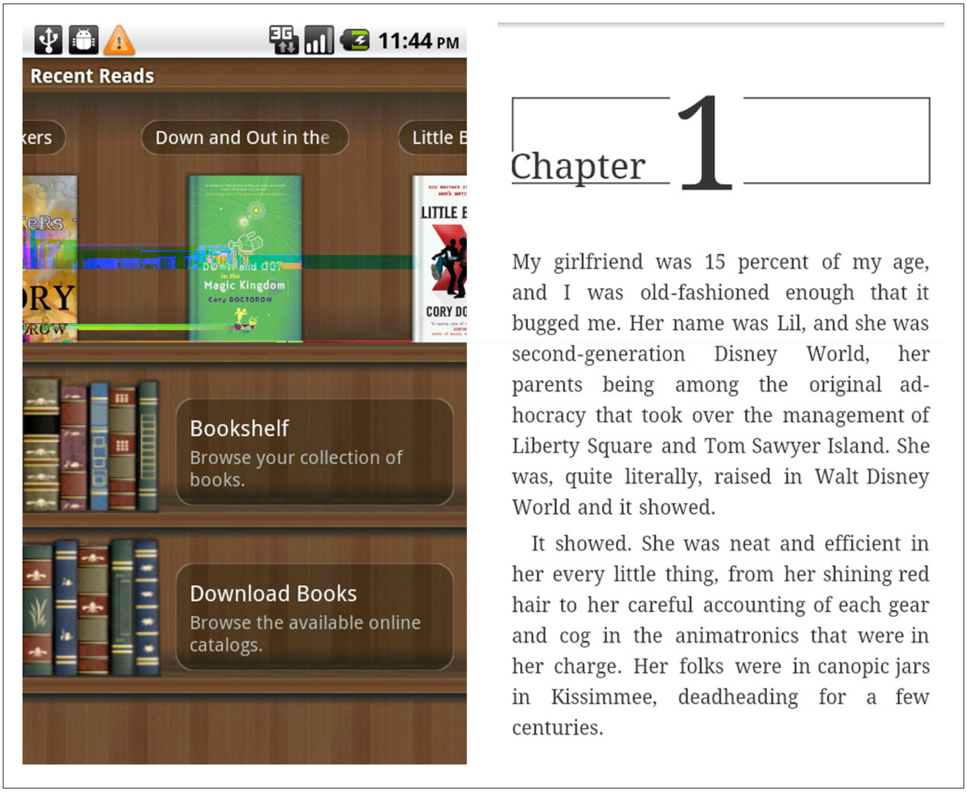
Äta

Mjölka korna

Klippa fåren

Köp mjölk

Figure 1-24. DoItTomorrow and TripJournal



My girlfriend was 15 percent of my age, and I was old-fashioned enough that it bugged me. Her name was Lil, and she was second-generation Disney World, her parents being among the original adhocracy that took over the management of Liberty Square and Tom Sawyer Island. She was, quite literally, raised in Walt Disney World and it showed.

It showed. She was neat and efficient in her every little thing, from her shining red hair to her careful accounting of each gear and cog in the animatronics that were in her charge. Her folks were in canopic jars in Kissimmee, deadheading for a few centuries.

Figure 1-25. Aldiko Book Reader

Use the Metaphor pattern judiciously, as a poorly implemented metaphor can look a lot like the Novel Notion anti-pattern in Chapter 9.

Mega Menu

A mobile Mega Menu is like the web Mega Menu, a big overlay panel with custom formatting and grouping of the menu options. The RipCurl website uses a mega menu for navigating into sub categories of clothing.

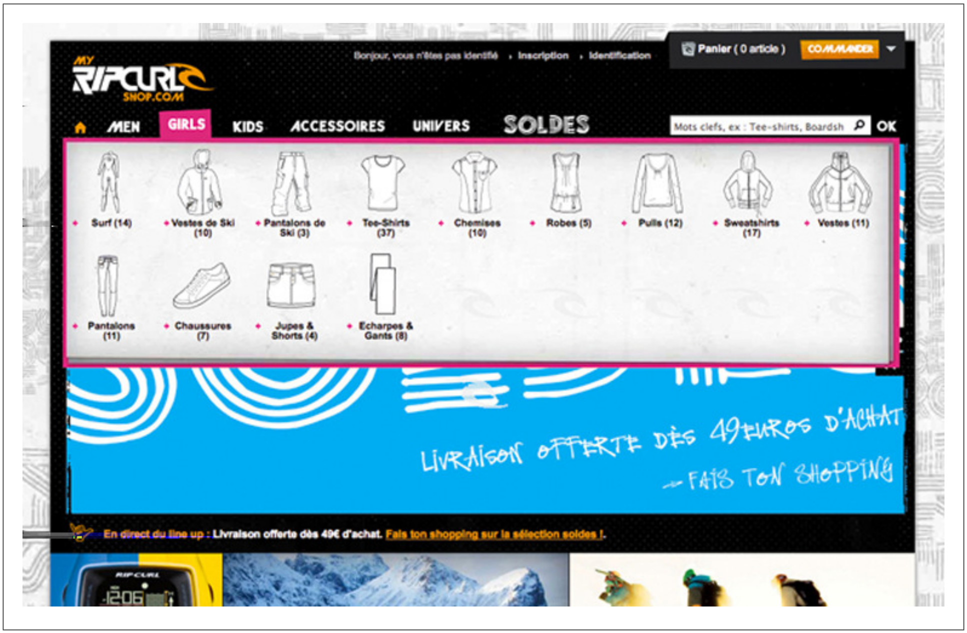
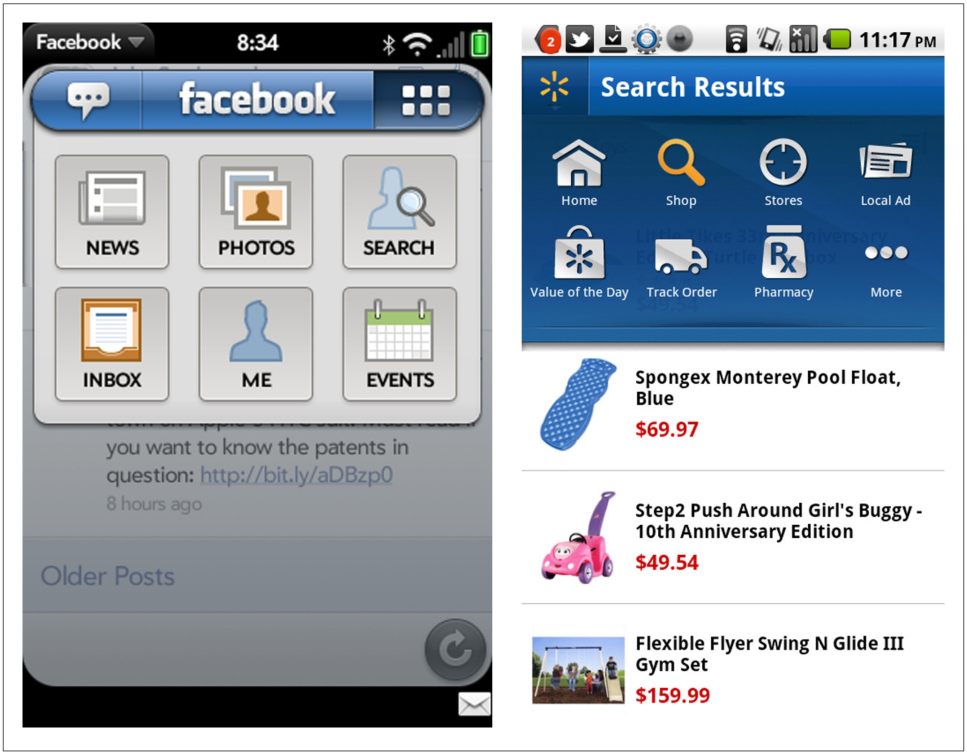


Figure 1-26. RipCurlShop.com

The webOS version of Facebook uses a megamenu for streamlined navigation, avoiding the extra navigation found in a Springboard pattern. Walmart uses this same pattern in their Android app.



you want to know the patents in question: http://bit.ly/aDBzp0
8 hours ago

Older Posts

Spongex Monterey Pool Float, Blue
$69.97

Step2 Push Around Girl's Buggy - 10th Anniversary Edition
$49.54

Flexible Flyer Swing N Glide III Gym Set
$159.99

Figure 1-27. Facebook webOS and Walmart Android

Determine your information architecture before choosing the navigation pattern. Choose a more appropriate pattern, like Tabs, if there are only a few major sections in the app.

Secondary Navigation

This chapter didn't feel complete with only menu patterns, so I broadened it to include secondary navigation. By secondary navigation, I mean the navigation within a page or module. For example, the Springboard in the ANZ application is secondary to the primary Tab navigation. Similarly in Jamie Oliver's Recipes, the List is secondary to the primary Tab navigation.

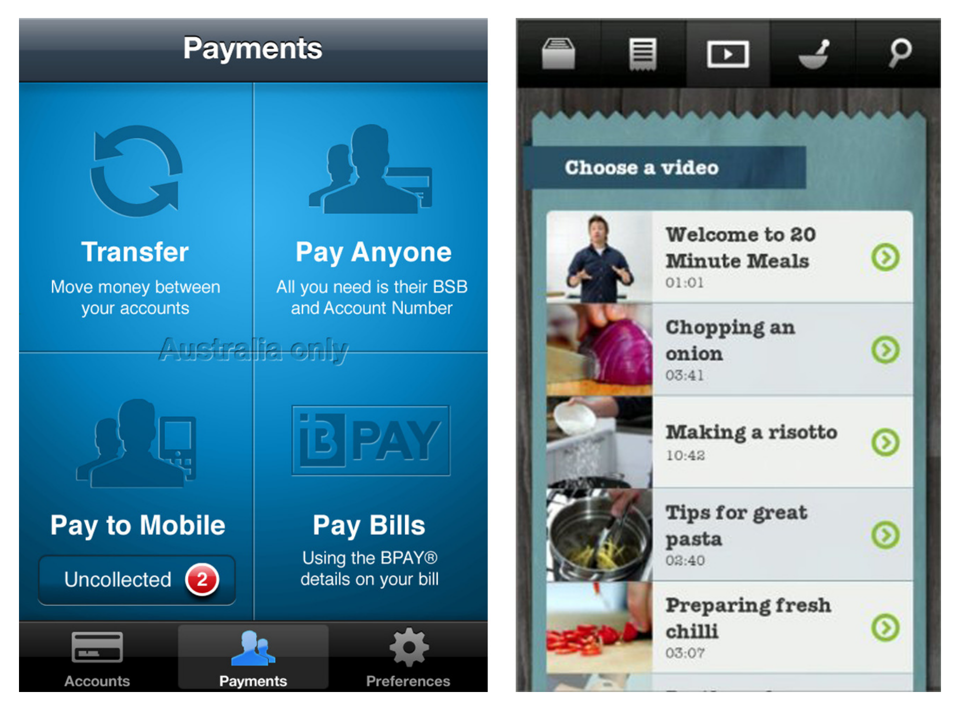


Figure 1-28. (Left) Primary, tabs; secondary, springboard. (Right) Primary, tabs; secondary, list.

Any of the primary navigation patterns can be reused as secondary navigation patterns. It is common to see Tabs with Tabs, Tabs with Lists, Tabs and Dashboard, Springboard and Gallery, etc.

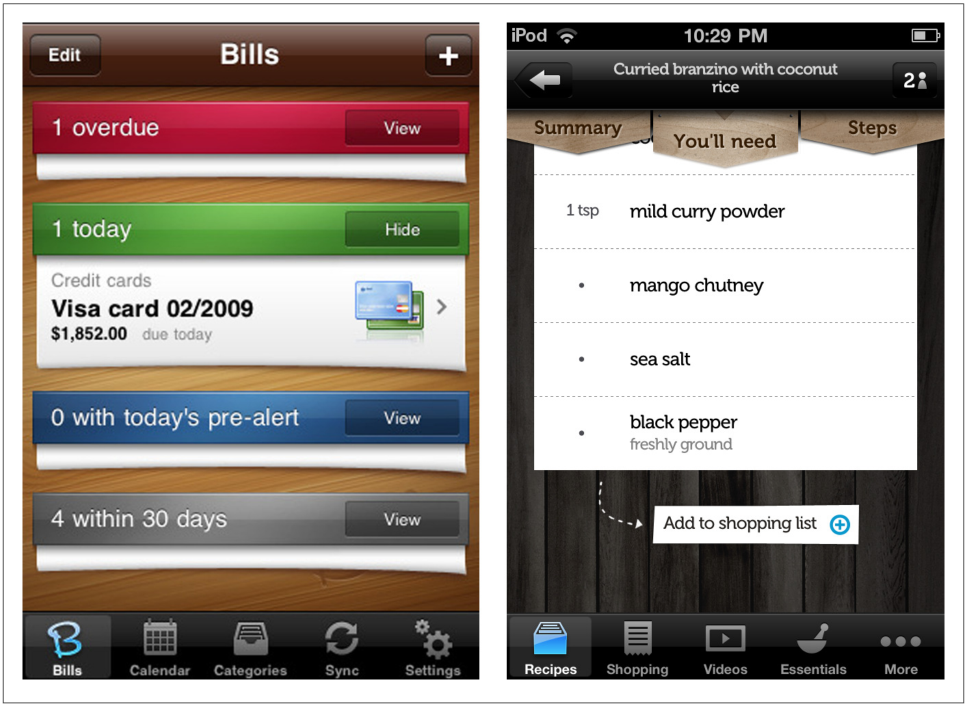


Figure 1-29. (Left) Primary, tabs; secondary, dashboard. (Right) Primary, tabs; secondary, tabs.

There are some additional patterns that work well for secondary navigation, but probably aren't ideal for primary navigation:

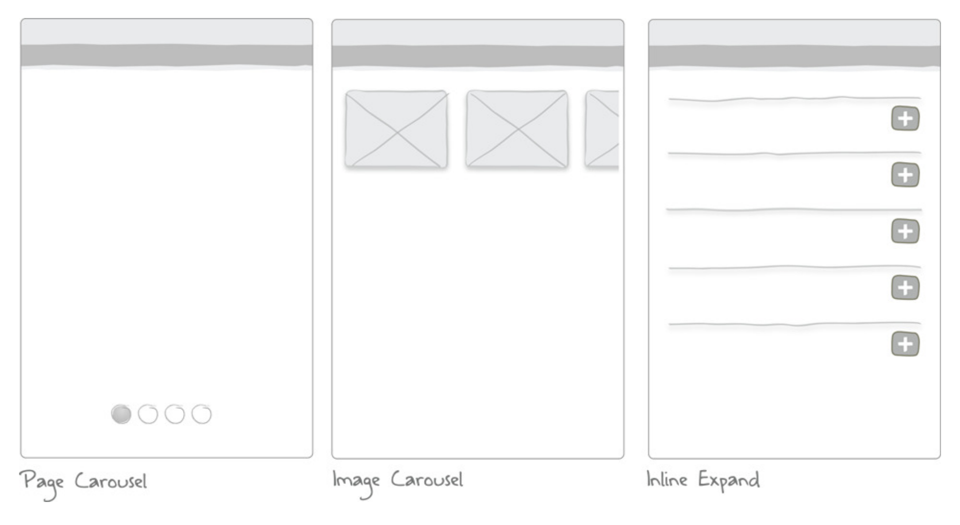


Figure 1-30. Secondary navigations patterns

Page Carousel

This pattern can be used to quickly navigate a discreet set of pages using the flick gesture. The page indicator (the iOS term for the little dots) displays how many pages are in the carousel; flicking displays the next page. All four examples below use the page carousel within a selected tab.

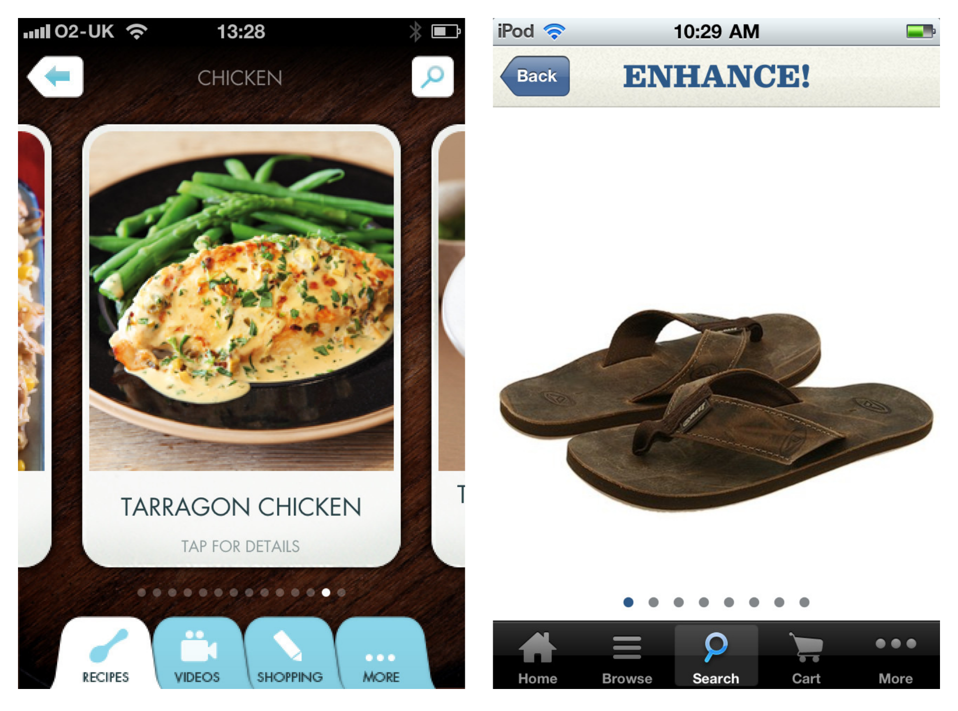
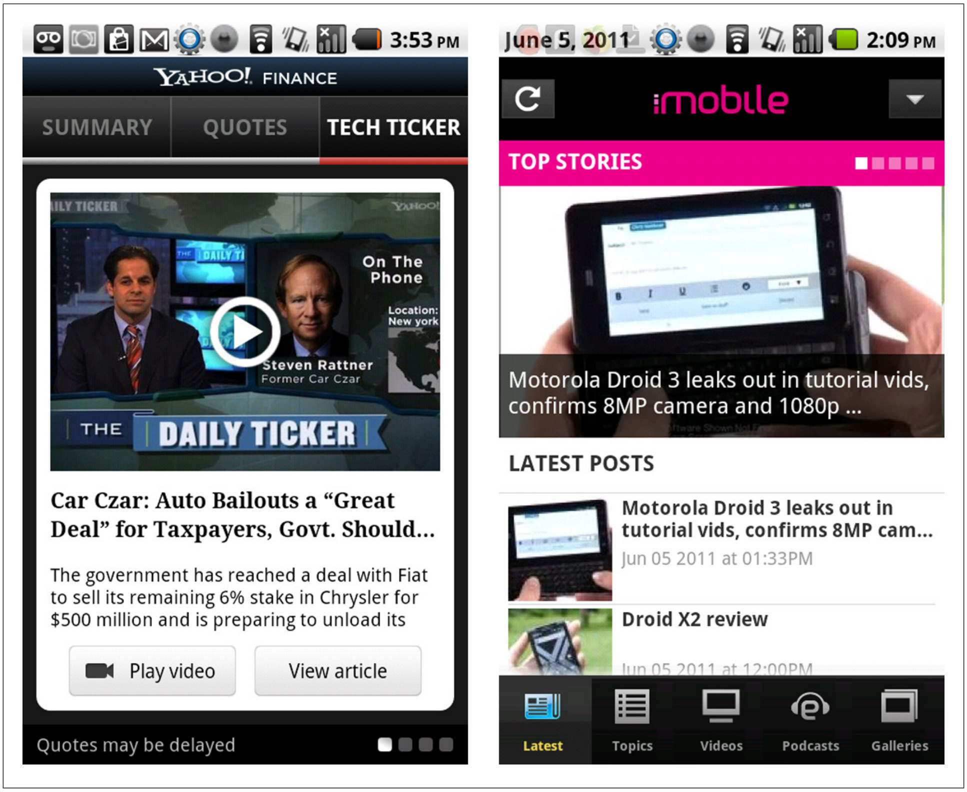


Figure 1-31. Nigella Quick Collection and Zappos



Car Czar: Auto Bailouts a “Great Deal” for Taxpayers, Govt. Should...

The government has reached a deal with Fiat to sell its remaining 6% stake in Chrysler for $500 million and is preparing to unload its

Quotes may be delayed

Motorola Droid 3 leaks out in tutorial vids, confirms 8MP camera and 1080p ...

Motorola Droid 3 leaks out in tutorial vids, confirms 8MP cam...

Jun 05 2011 at 01:33PM

Droid X2 review

Jun 05 2011 at 12:00PM

Figure 1-32. Yahoo! Finance and iMobile

The page carousel pattern has its limits. Consider using a list for navigating more than eight pages.

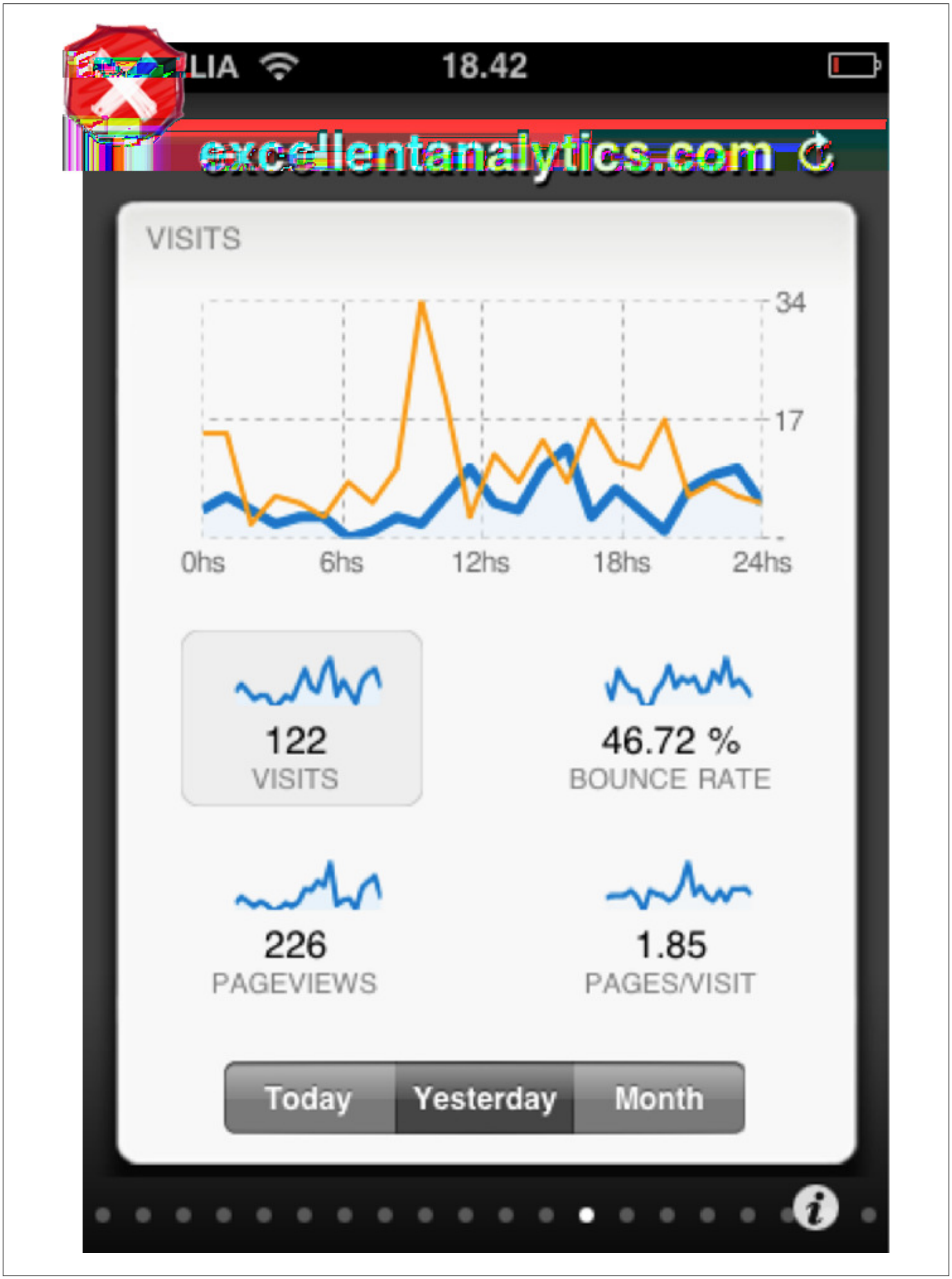


Figure 1-33. ExcellentAnalytics—Too many pages

The page carousel works best for navigating a small number of pages. Use a visual indicator to reflect the number of screens, and current screen. Flick is the common gesture to navigate the carousel.

Image Carousel

The image carousel may be a 2D carousel or more like the iTunes coverflow. IMDB uses the image carousel to surface the most viewed movies. We used it to display featured products in the retail application we designed for the Adobe Flex Showcase.

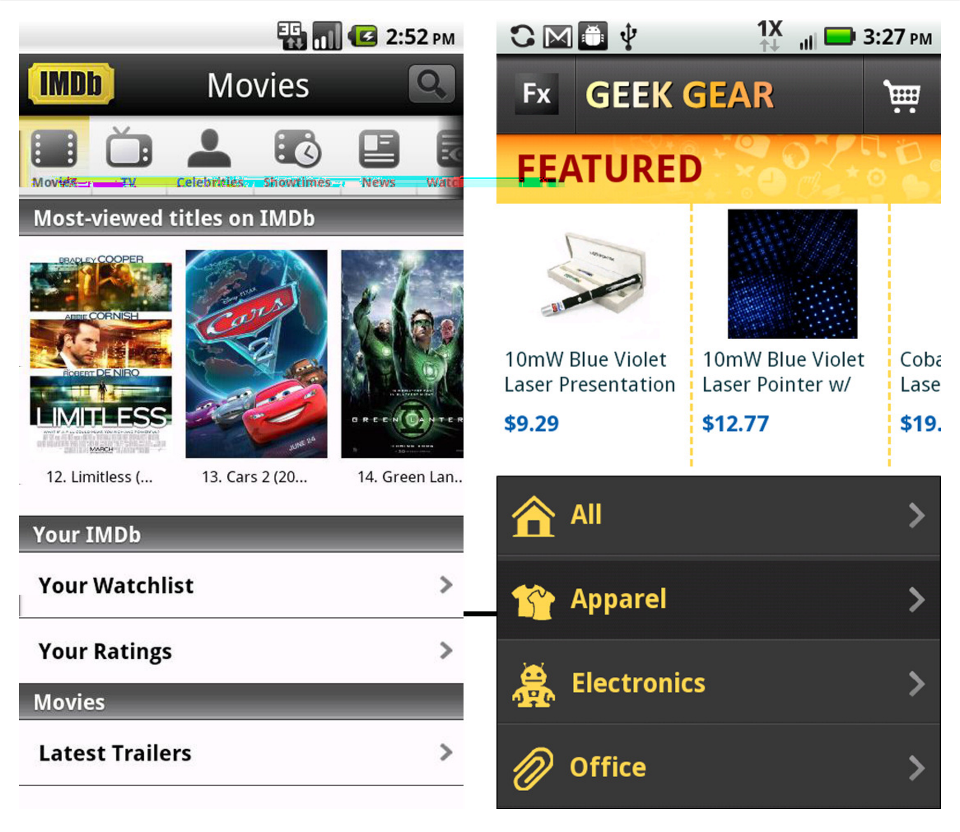


Figure 1-34. IMDB and Adobe Flex 4.5 Showcase App

The Photo Cookbook is another example of the Image Carousel; however, the images are grouped in columns by recipe type.

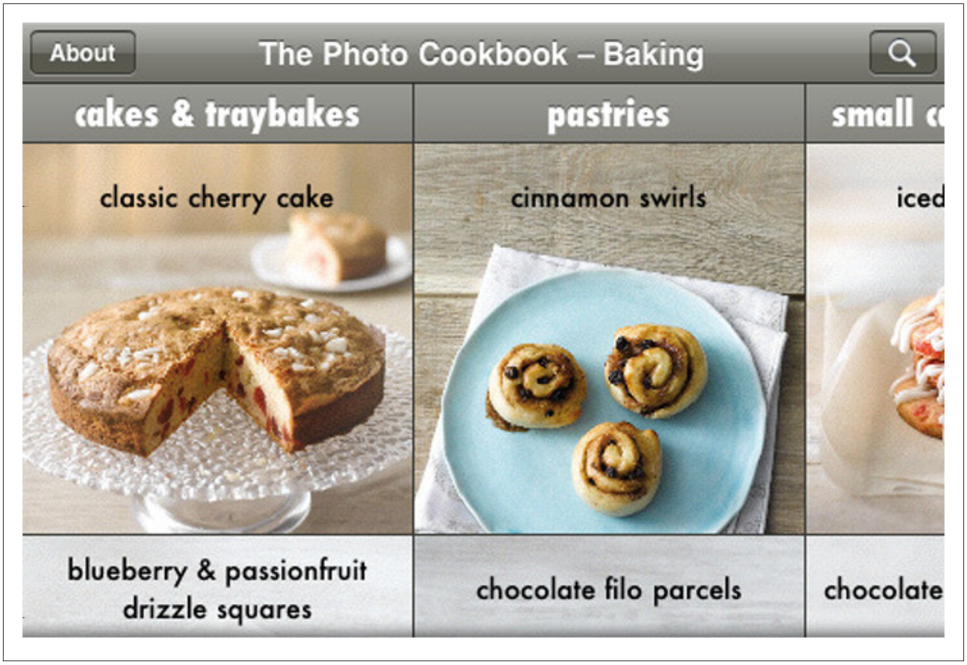
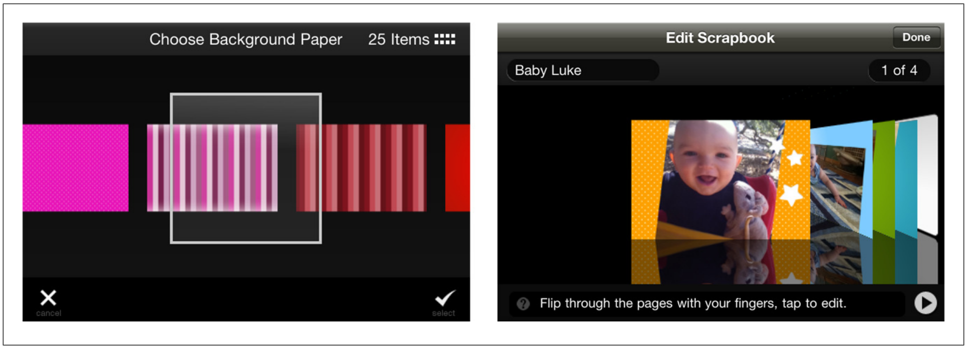


Figure 1-35. The Photo Cookbook

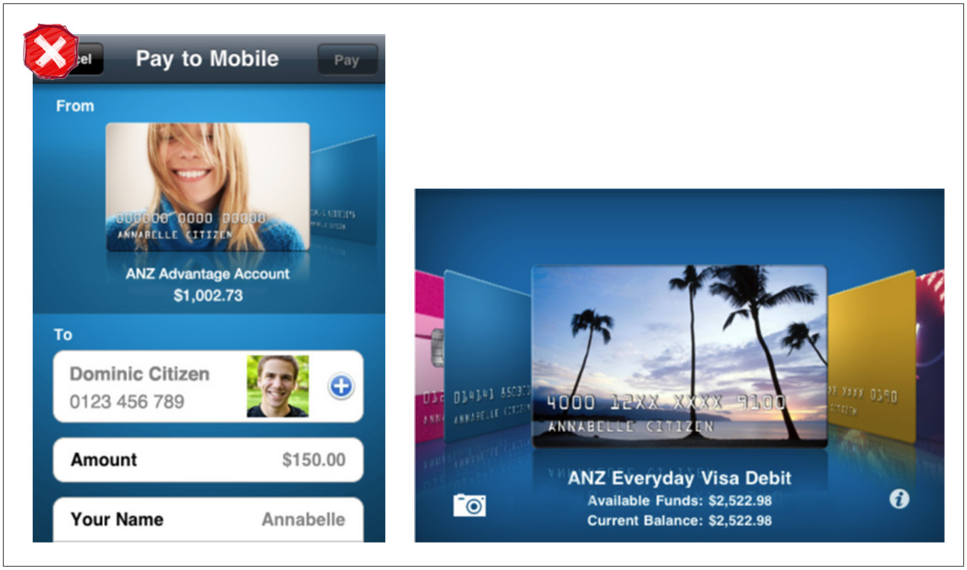
Tap'n'Scrap has good examples of both styles. They use a 2D carousel for background and frame selection, and the coverflow style scrapbook viewing.



Flip through the pages with your fingers, tap to edit.

Figure 1-36. Tap'n'Scrap

ANZ's banking app displays account information payment sources in a coverflow. While this is attractive and probably demos well, the excitement of flicking through cards to make a payment probably wears thin after the first few uses.



ANZ Advantage Account
$1,002.73

Dominic Citizen
0123 456 789

Amount $150.00

Your Name Annabelle

ANZ Everyday Visa Debit
Available Funds: $2,522.98
Current Balance: $2,522.98

Figure 1-37. Image Carousel in ANZ for payment selection demos well, but gets old fast

The Image Carousel works best for displaying fresh visual content, like articles, products, and photos. Provide visual affordance, either with arrows, partial images or page indicators (dots) that more content can be accessed.

Expanding List

The Expanding List allows a single screen drill down to reveal more information. Android Gingerbread uses this pattern in the call log. All calls from the same number are collapsed into one row. Tapping the icon expands the list to show the individual instances.

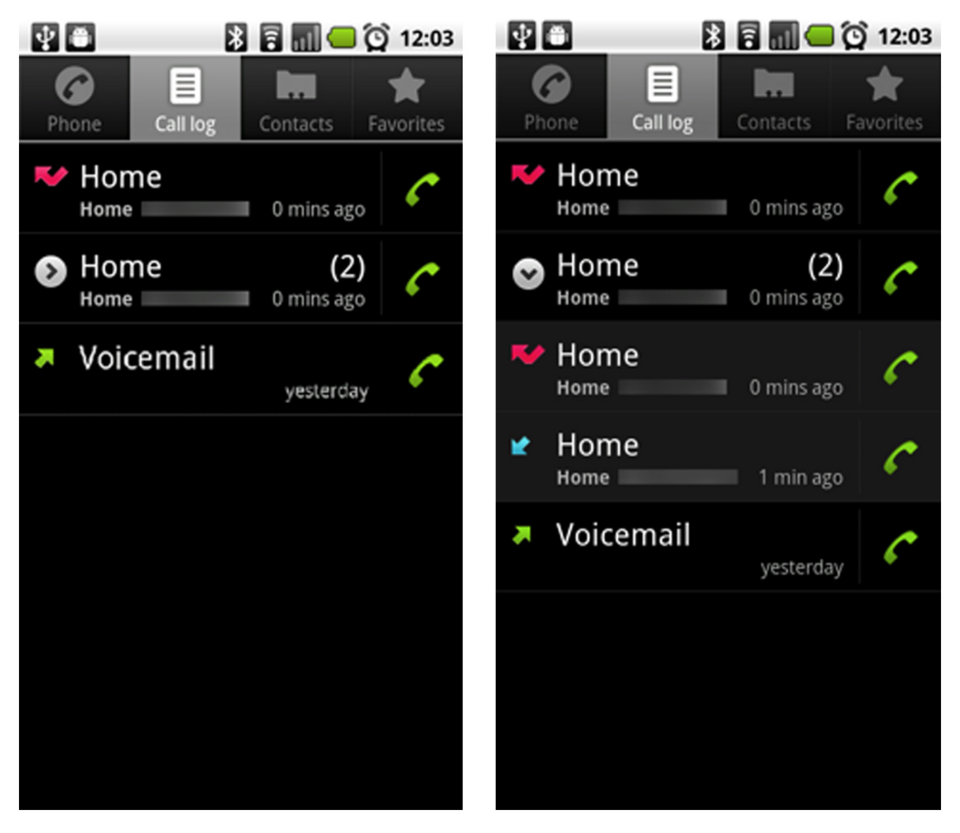


Figure 1-38. Android Call Log

This pattern is more common in mobile optimized websites than mobile applications, but can work well in both cases. Take for example the Gap.com mobile site. The Expanding List is used instead of a Cascading List to disclose all of the Women's clothing categories.

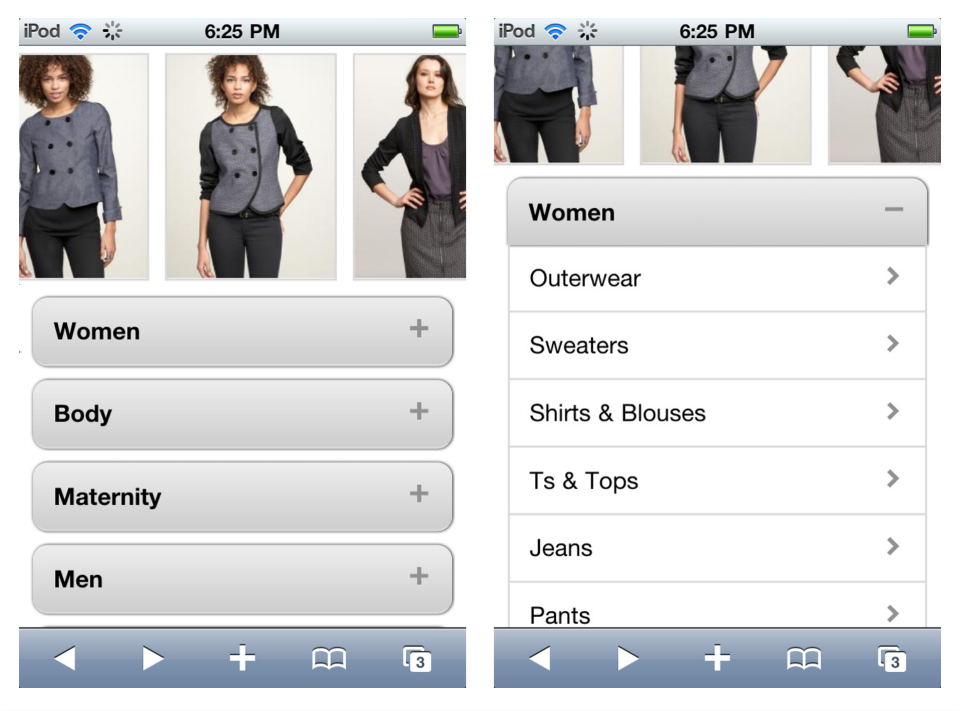
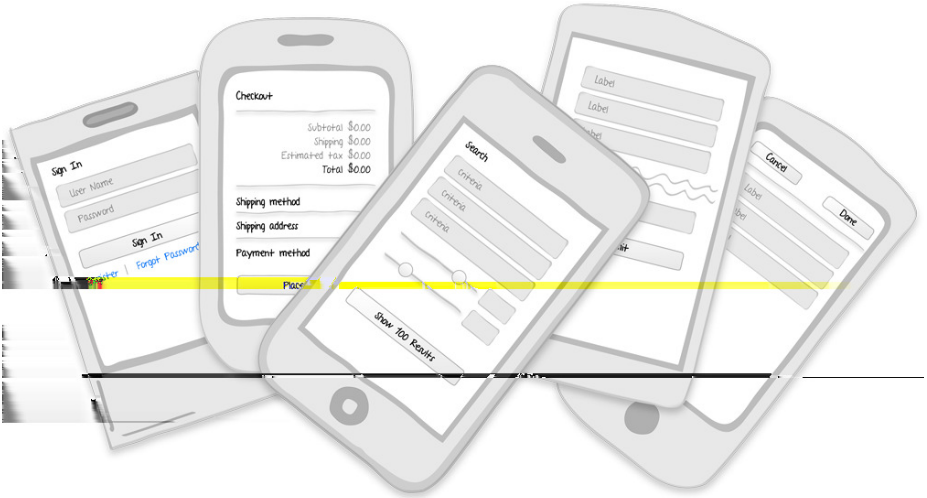


Figure 1-39. Gap Mobile Website

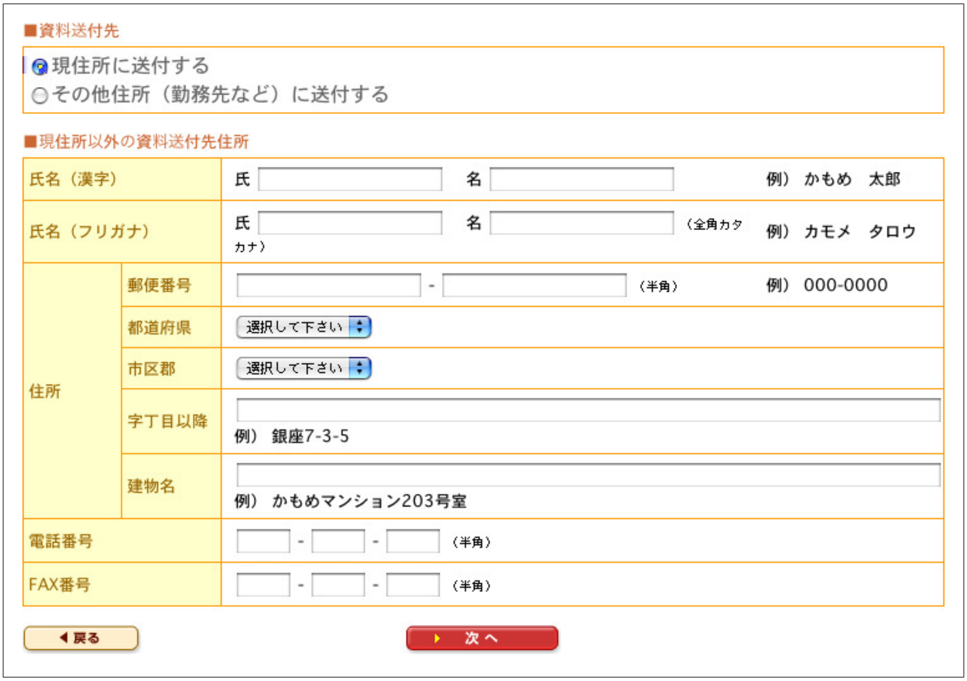
The Expanding List pattern works best for progressively disclosing more details or options for an object.

CHAPTER 2
Forms



Patterns: Sign In, Registration, Checkout, Calculate, Search Criteria, Multi-step, Long Form

Most web applications rely extensively on forms for data entry and configuration. And although we have compelling research and design strategies for basic form design, there are still horrible forms all over the Web. Since there is usually no alternative, we muddle through them to buy merchandise, submit applications, or answer surveys.



■資料送付先

● 現住所に送付する
○ その他住所（勤務先など）に送付する

■現住所以外の資料送付先住所

氏名（漢字）		氏 □ 名 □ 例） かもめ 太郎
氏名（フリガナ）		氏 □ 名 □ （全角カタカナ） 例） カモメ タロウ
住所	郵便番号	□ - □ （半角） 例） 000-0000
	都道府県	選択して下さい
	市区郡	選択して下さい
	字丁目以降	□ 例） 銀座7-3-5
	建物名	□ 例） かもめマンション203号室
電話番号		□ - □ - □ （半角）
FAX番号		□ - □ - □ （半角）

Figure 2-1. Many distinct visual elements on this form get in the way of seeing the questions the form is asking. Wroblewski, Luke. 2008. Web Form Design: Filling In the Blanks. New York: Rosenfeld Media.

Mobile forms, with reduced screen size and restricted input devices, have even less leeway for bad design. Before designing any forms, I highly recommend brushing up on the basics with:

Filling in the Blanks: Web Form Design, by Luke Wroblewski(Rosenthal Media)

Forms on Mobile Devices: Modern Solutions, by Luke Wroblewski(Smashing Magazine)

Mobile Form Design Strategies, by Chui Chui Tan (UX Booth)

The following form design patterns can supplement the information in these books and articles:

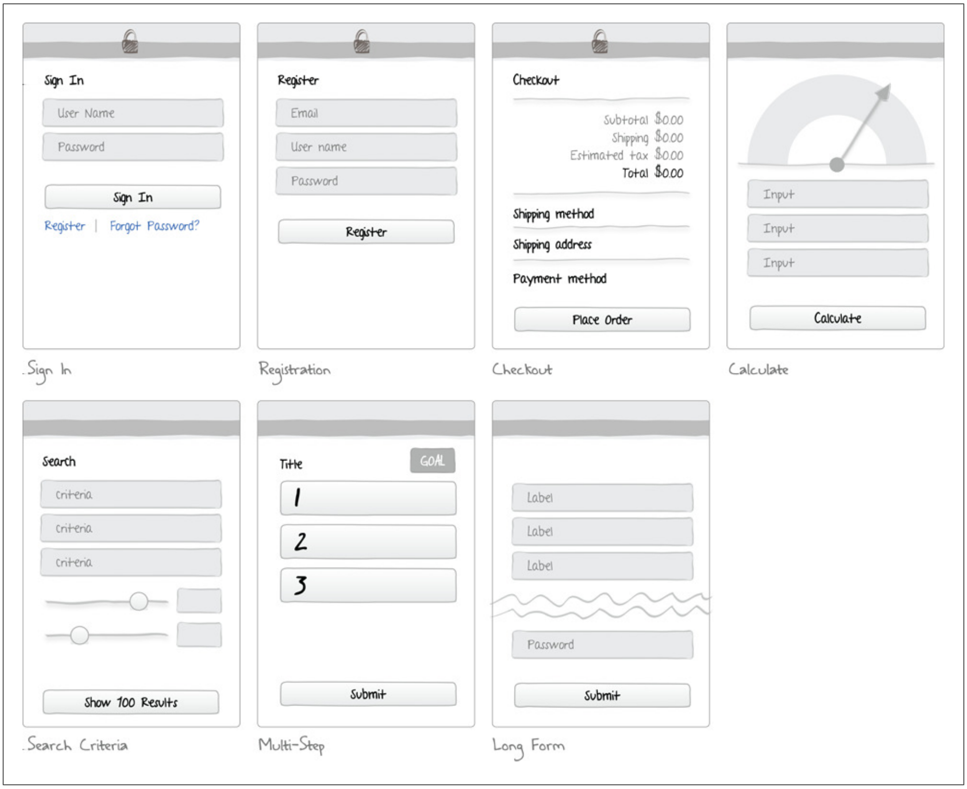
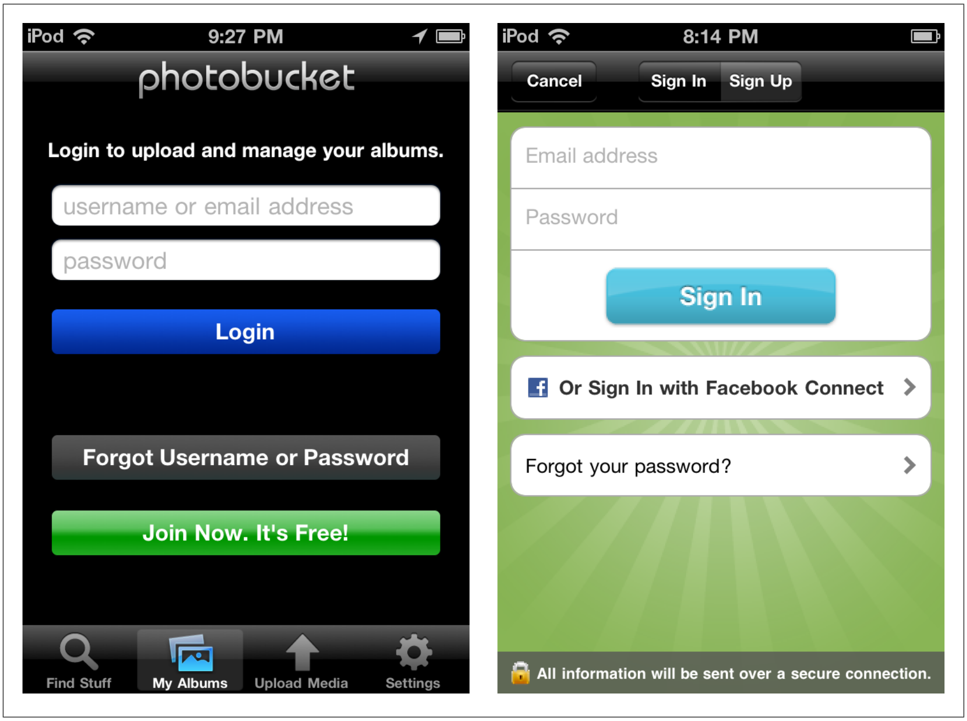


Figure 2-2. Form patterns

Sign In

Sign In forms should have a minimal amount of inputs: user name, password, action button, password help, option to register. Some applications do this in a single screen, like Photobucket and Groupon.

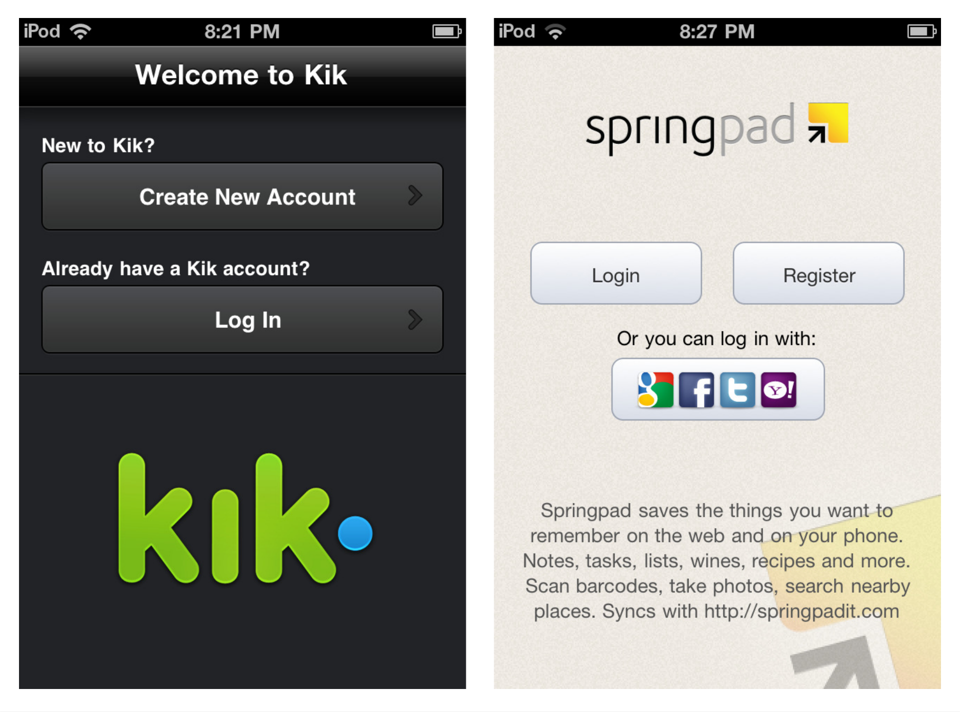


Login to upload and manage your albums.

All information will be sent over a secure connection.

Figure 2-3. Photobucket and Groupon

Other apps, like kik and springpad, present the option to Sign In or Register up front, then take the user to the appropriate form. Springpad and Groupon also offer the option to sign on with Facebook or other services.



Springpad saves the things you want to remember on the web and on your phone. Notes, tasks, lists, wines, recipes and more. Scan barcodes, take photos, search nearby places. Syncs with http://springpadit.com

Figure 2-4. kik and springpad

Another pattern is to forgo the user name field and just require a password. The user can be authenticated when the application is installed, and then only prompted for a password to access sensitive data. This is a popular option among financial apps, like PNCs Virtual Wallet, but could be used across industries. Offering a mobile PIN as a password fulfills the same purpose.

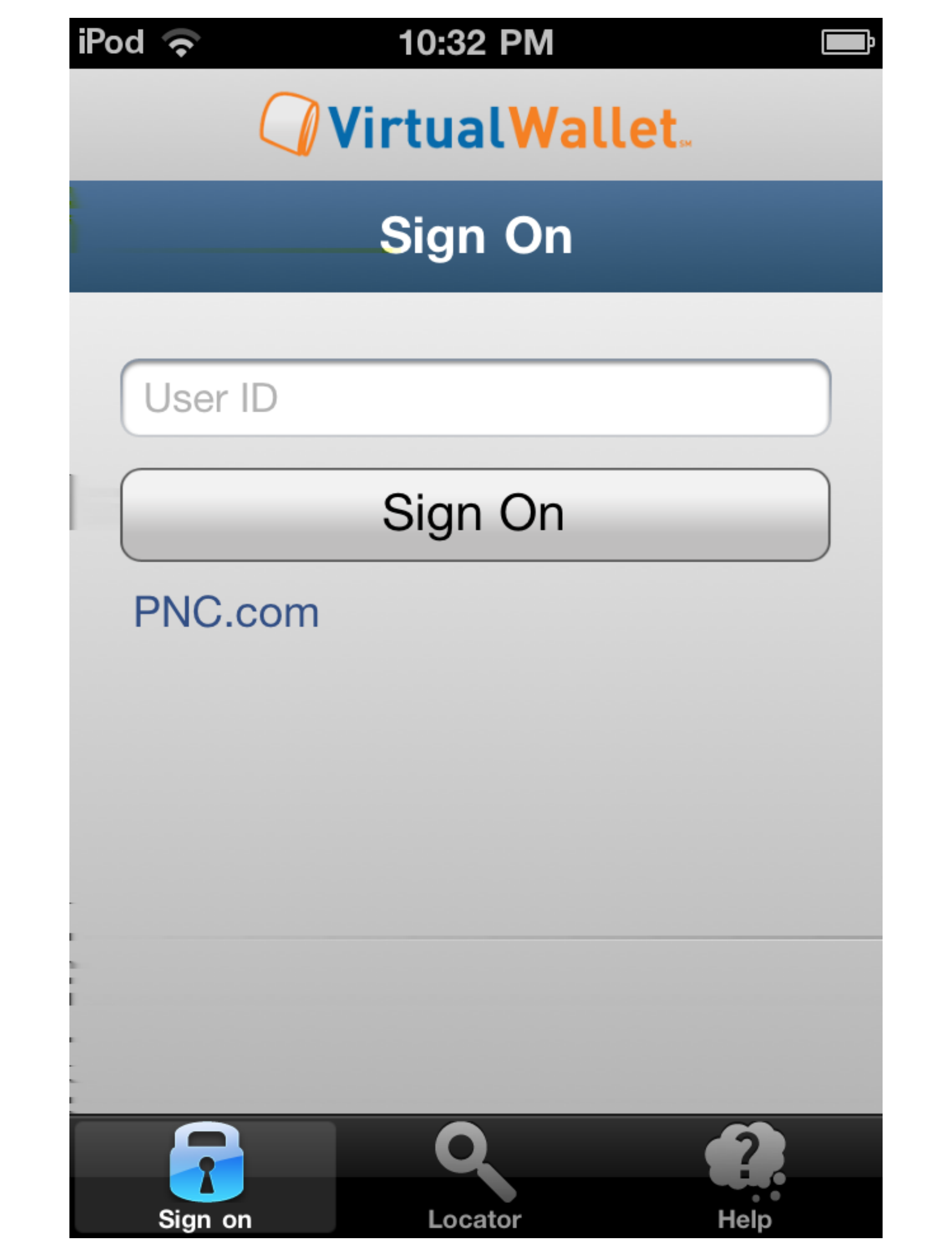
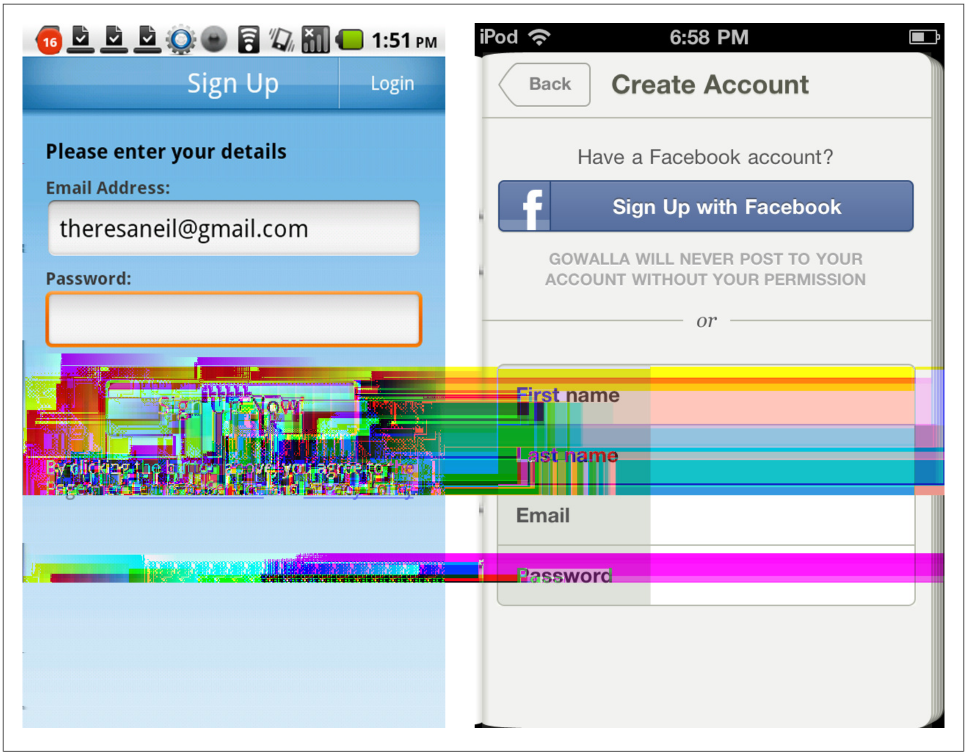


Figure 2-5. PNC's ViruralWallet

Don't innovate on the sign in screen, use common practices to make it easy for users to get signed in. Provide a way to retrieve a forgotten password.

Registration

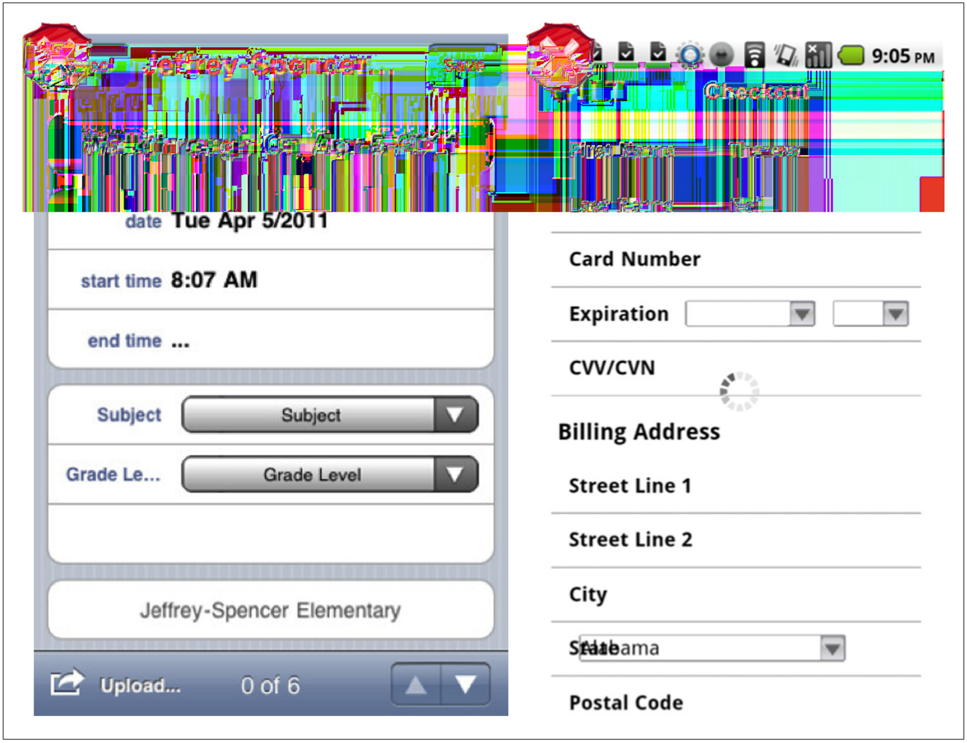
Registration, like Sign In, should have a minimal amount of inputs. Chui Chui Tan recommends ruthlessly editing “elements which do not carry important functions.” This might mean eliminating the redundant *confirm email* and *confirm password* fields.



Email Address: theresaneil@gmail.com

Figure 2-6. PageOnce and Gowalla

Since this may be the first form you design for your application, establish a labeling convention that is easy to read. Avoid horizontal labels and instead use vertical labels, like Evernote, or watermarked field labels, like Intuit.



date Tue Apr 5/2011

start time 8:07 AM

end time ...

Subject: Subject

Grade Le...: Grade Level

Jeffrey-Spencer Elementary

Card Number

Expiration

CVV/CVN

Billing Address

Street Line 1

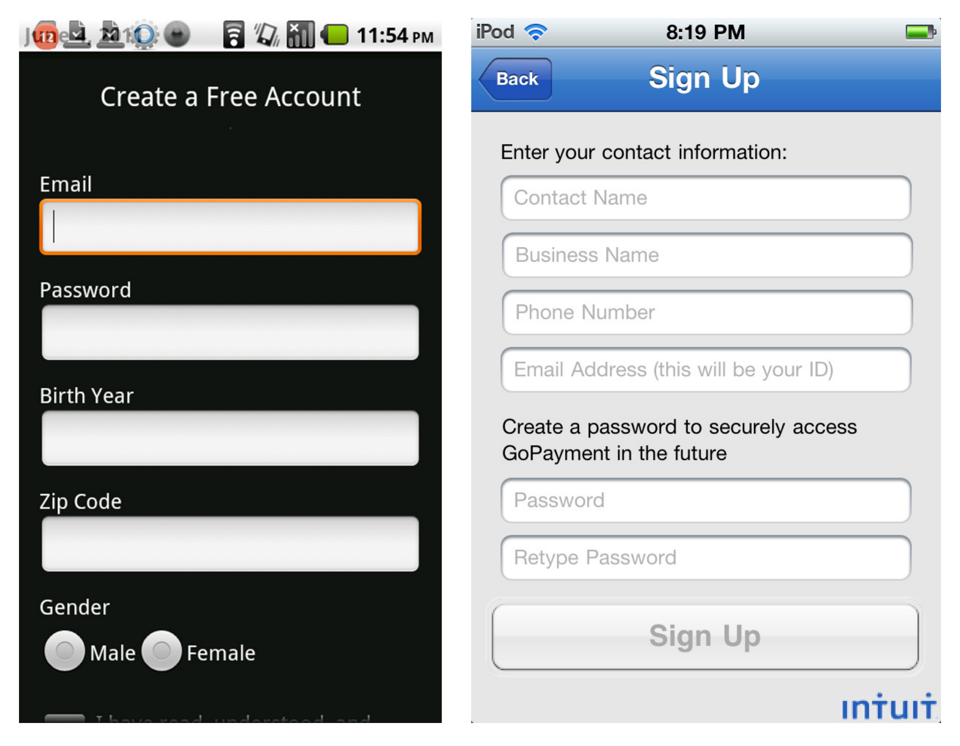
Street Line 2

City

State Alabama

Postal Code

Figure 2-7. Horizontal labels can end up truncated



11:54 PM

Create a Free Account

Email

Password

Birth Year

Zip Code

Gender

○ Male ○ Female

I have read, understood, and

iPod 8:19 PM

Back

Sign Up

Enter your contact information:

Contact Name

Business Name

Phone Number

Email Address (this will be your ID)

Create a password to securely access GoPayment in the future

Password

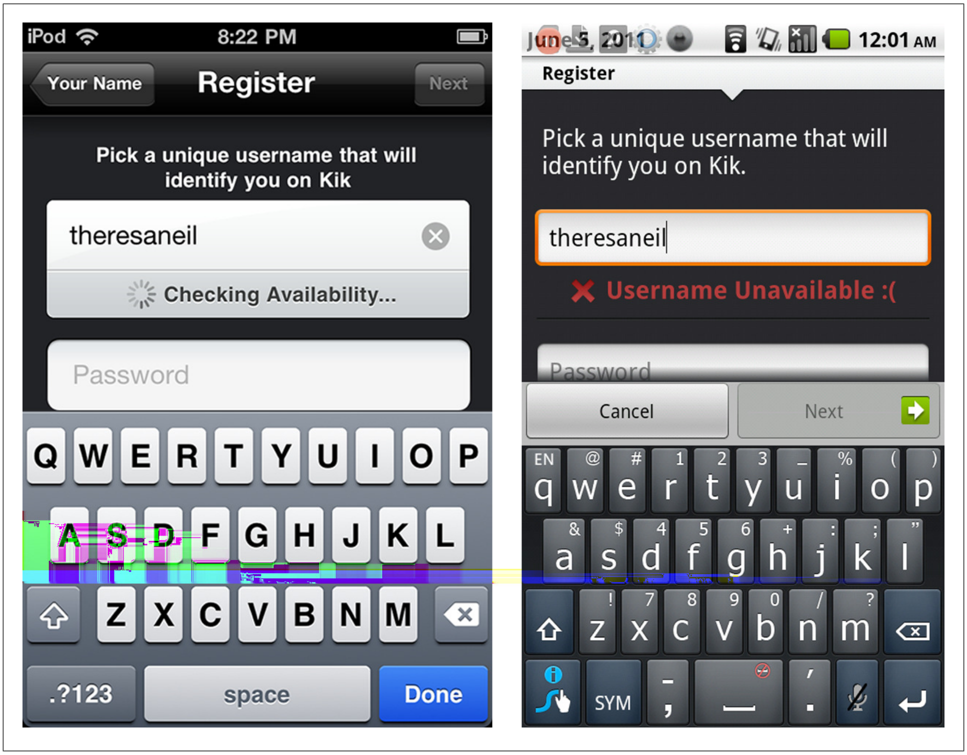
Retype Password

Sign Up

intuit

Figure 2-8. Vertical labels and watermark label

Offer inline feedback, when appropriate, like kik does for *User Name* availability. See Chapter 8, for more tips.



Pick a unique username that will identify you on Kik

theresaneil

Checking Availability...

Password

Pick a unique username that will identify you on Kik.

theresaneil

Username Unavailable :(

Password

Figure 2-9. Inline feedback for user name availability in kik

Keep it short, preferably one screen, with the Register button above the fold. Make it simple for an already registered use to sign in.

Checkout

At this point in time, mobile checkout is more common in mobile optimized websites than in applications, but the same rules apply to both:

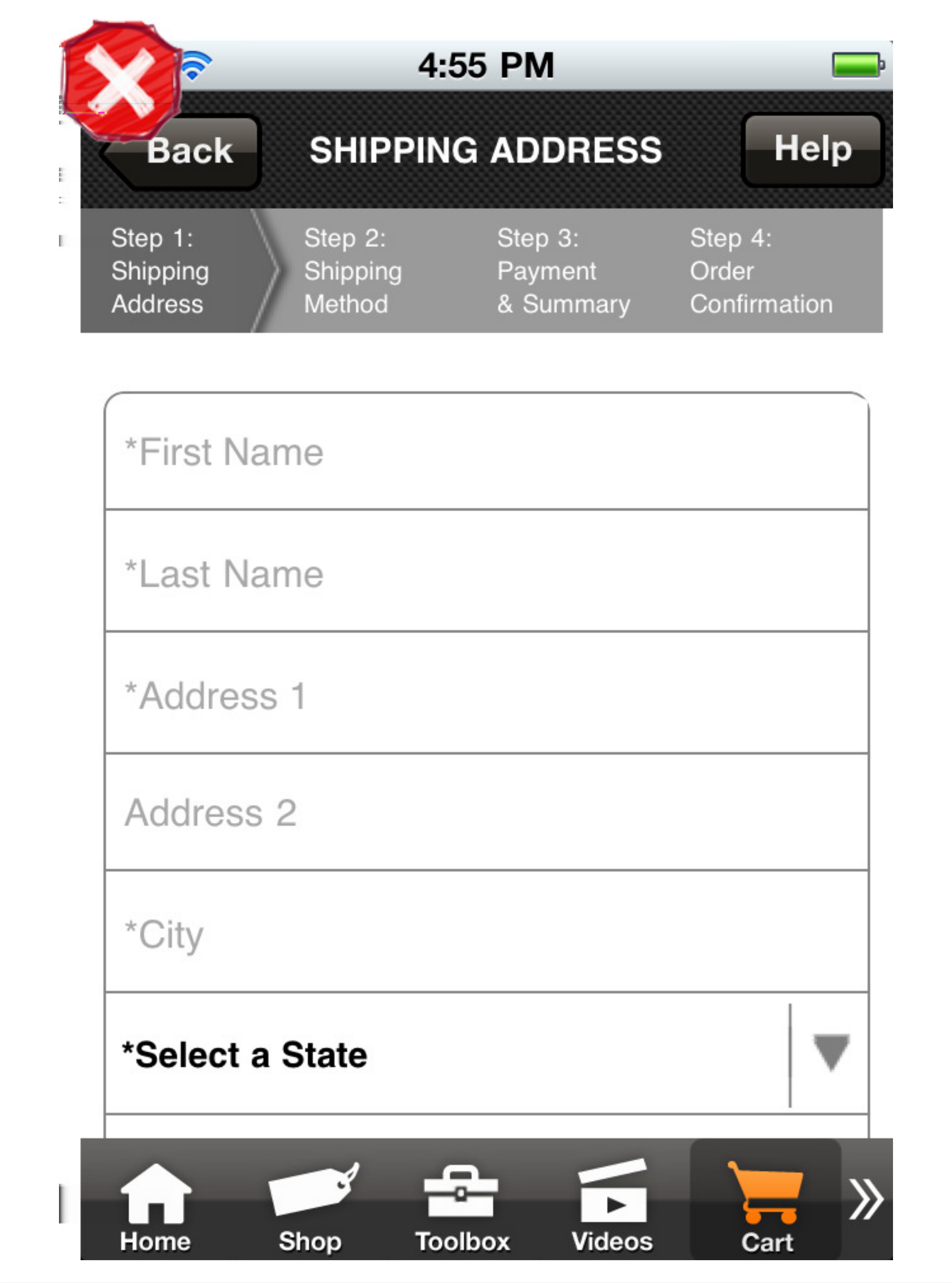
Use device standard controls in the checkout form.

Consider consolidating multiple screens into one checkout form. Retailers like Zappos and Apple present a short checkout form with sections that can be drilled into to complete. Other retailers like Target and Gilt simply use a long form.

Offer a mechanism for a faster checkout in the future, like saved card information, or sign in to checkout.

Display the security lock in the header to indicate a secure connection.

Checkout wizards, like Home Depot, may not be the fastest, most efficient design. See the Multi-Step pattern for better design options.



4:55 PM

Back

SHIPPING ADDRESS

Help

Step 1: Shipping Address

Step 2: Shipping Method

Step 3: Payment & Summary

Step 4: Order Confirmation

*First Name

*Last Name

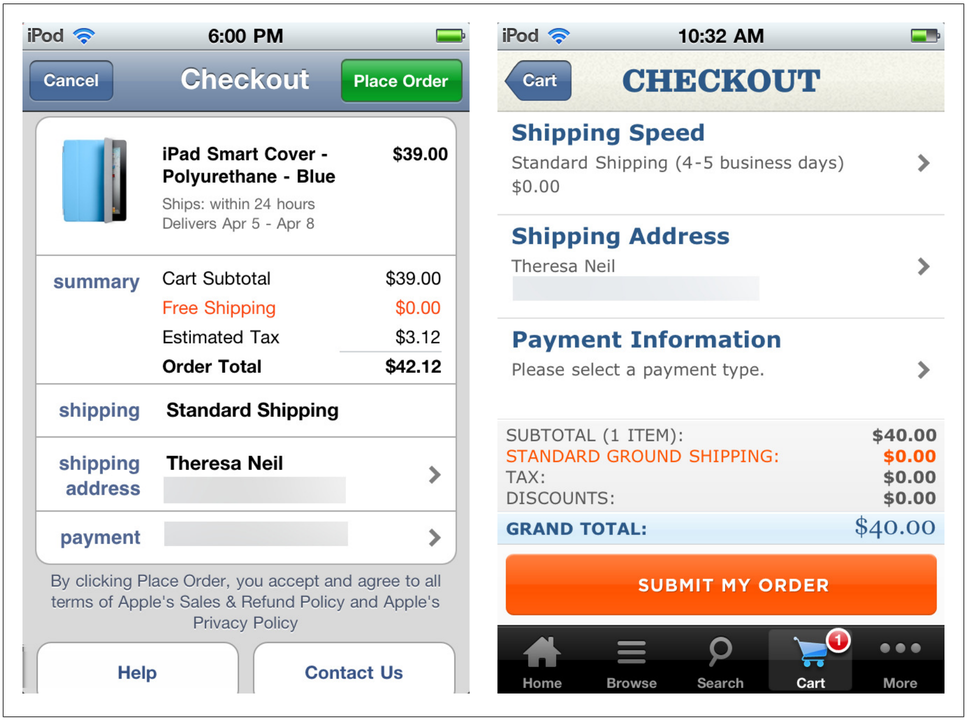
*Address 1

Address 2

*City

*Select a State

Figure 2-10. Home Depot's checkout wizard is suboptimal for a mobile application



iPad Smart Cover - Polyurethane - Blue $39.00
Ships: within 24 hours
Delivers Apr 5 - Apr 8

summary	Cart Subtotal	$39.00
	Free Shipping	$0.00
	Estimated Tax	$3.12
	Order Total	**$42.12**

shipping: **Standard Shipping**

shipping address: **Theresa Neil** [redacted]

payment: [redacted]

By clicking Place Order, you accept and agree to all terms of Apple's Sales & Refund Policy and Apple's Privacy Policy

Shipping Speed
Standard Shipping (4-5 business days)
$0.00

Shipping Address
Theresa Neil
[redacted]

Payment Information
Please select a payment type.

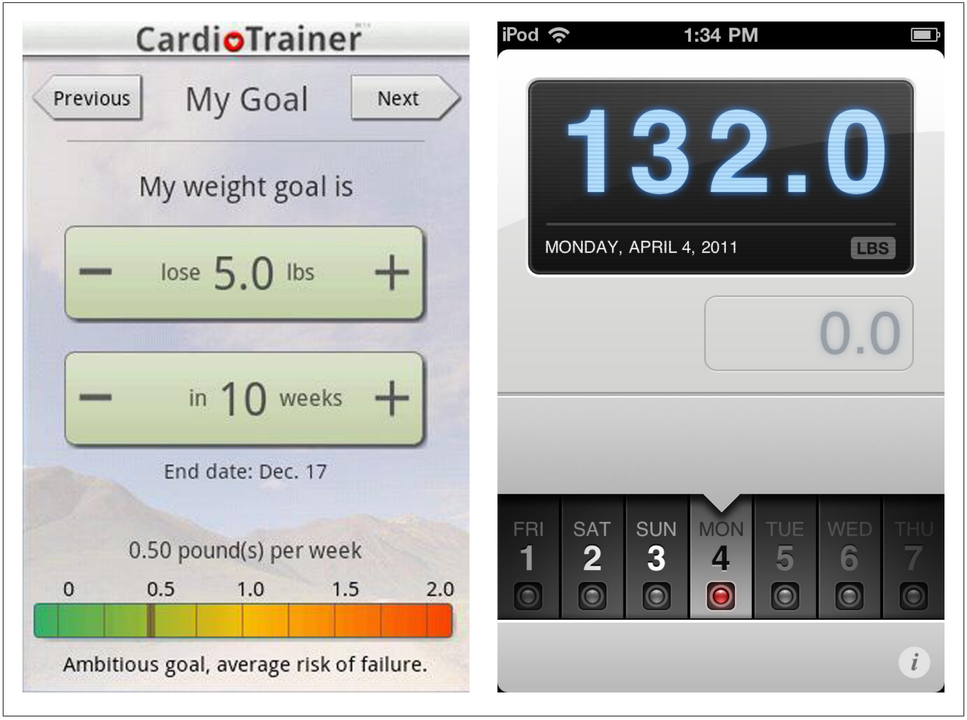
SUBTOTAL (1 ITEM):	$40.00
STANDARD GROUND SHIPPING:	$0.00
TAX:	$0.00
DISCOUNTS:	$0.00
GRAND TOTAL:	$40.00

Figure 2-11. Checkout: Apple and Zappos

Design for speed, efficiency, and reassurance. Eliminate unnecessary fields and minimize the number of pages and steps.

Calculate

Calculator style apps like weight trackers, tax estimators, and loan calculators all require input. And although these forms can use custom controls and layouts, it is still important to follow basic conventions concerning readability.



My weight goal is

lose 5.0 lbs

in 10 weeks

End date: Dec. 17

0.50 pound(s) per week

Ambitious goal, average risk of failure.

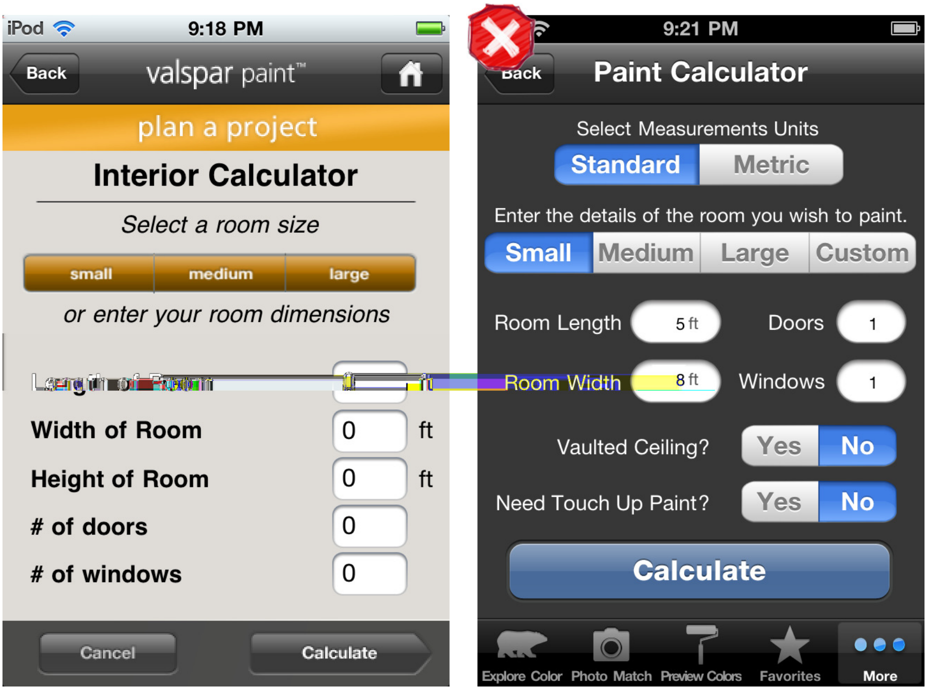
132.0

MONDAY, APRIL 4, 2011

0.0

Figure 2-12. Custom controls: CardioTrainer and WeightBot

Alignment, labels, fonts, button placement, contrast, and colors all affect the usability of mobile forms. For example, compare the readability of the Valspar Paint Calculator, well aligned fields and labels, with that of the Behr Paint Calculator.

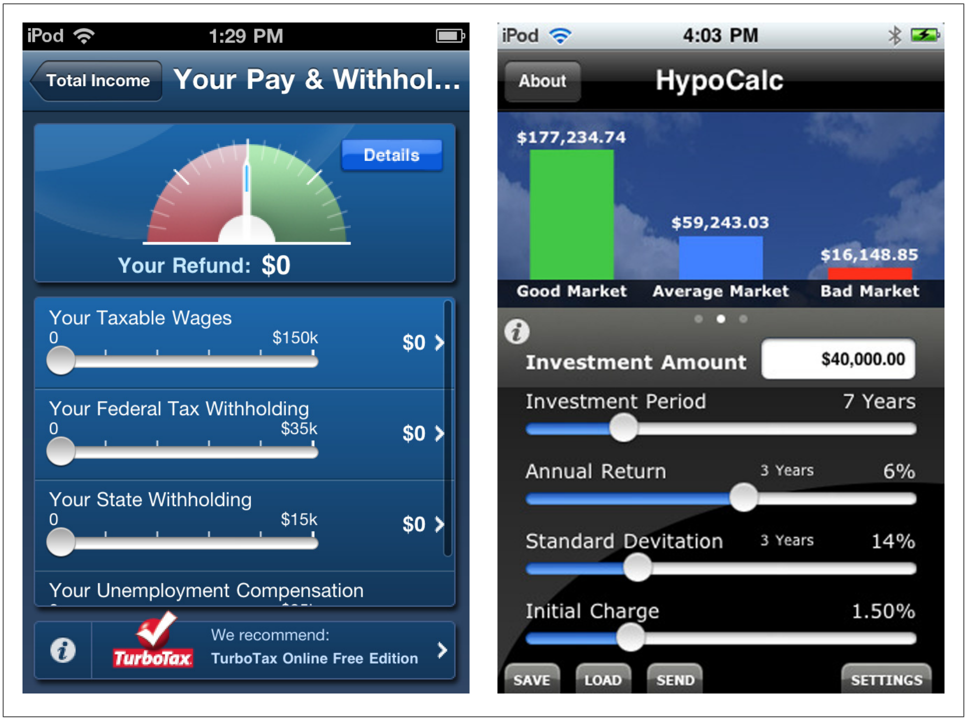


Length of Room ft
Width of Room 0 ft
Height of Room 0 ft
# of doors 0
# of windows 0

Room Length 5 ft
Doors 1
Room Width 8 ft
Windows 1
Vaulted Ceiling? Yes [✓ No]
Need Touch Up Paint? Yes [✓ No]

Figure 2-13. Valspar Paint, easy to read; Behr Paint, harder to read'

The best calculation apps tightly correlate the input with a visual result. TaxCaster uses a gauge to visualize taxes due or refund amount, and HypoCalc integrates a chart in the form.



Your Refund: $0

Your Taxable Wages 0 $150k $0

Your Federal Tax Withholding 0 $35k $0

Your State Withholding 0 $15k $0

Your Unemployment Compensation

Investment Amount $40,000.00

Investment Period 7 Years

Annual Return 3 Years 6%

Standard Devitation 3 Years 14%

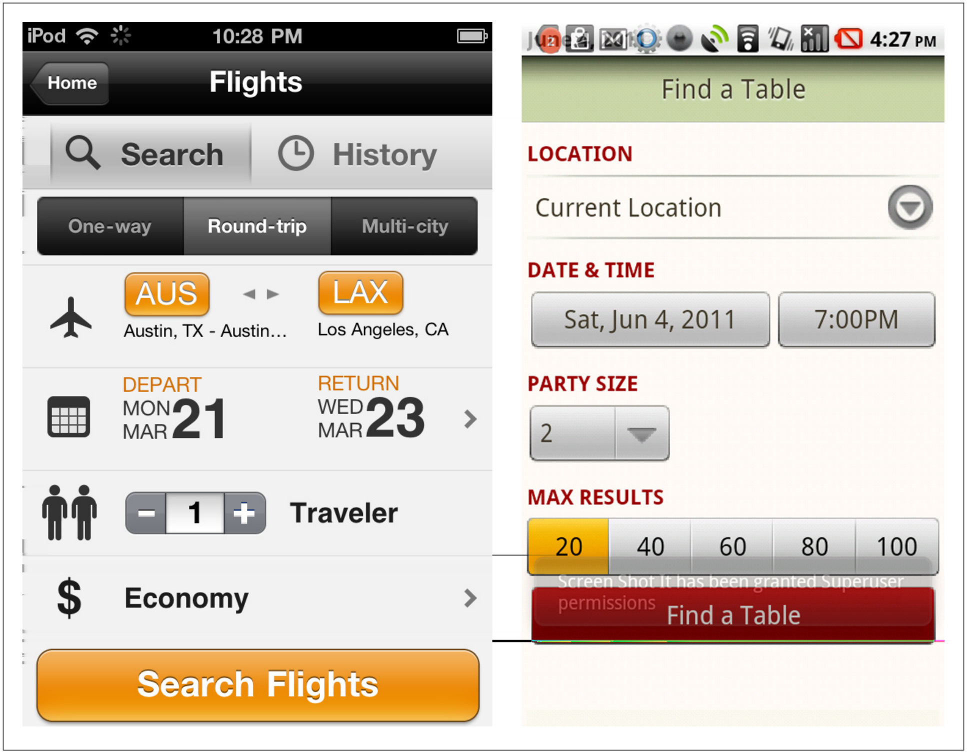
Initial Charge 1.50%

Figure 2-14. TaxCaster and HypoCalc

Use standard form conventions for design and layout. If possible, visualize the results in the same page.

Search Form

Some searches require multiple inputs, or criteria, to generate results. Like the other form patterns, search criteria should be limited to only the essential fields and provide sensible defaults. For example, Kayak's flight search form defaults to a round-trip ticket, for one person, economy class. They use a custom form layout to keep all the criteria and *search* button above the fold. OpenTable defaults to your current location, date, and upcoming time to search for restaurants you can get a reservation at.

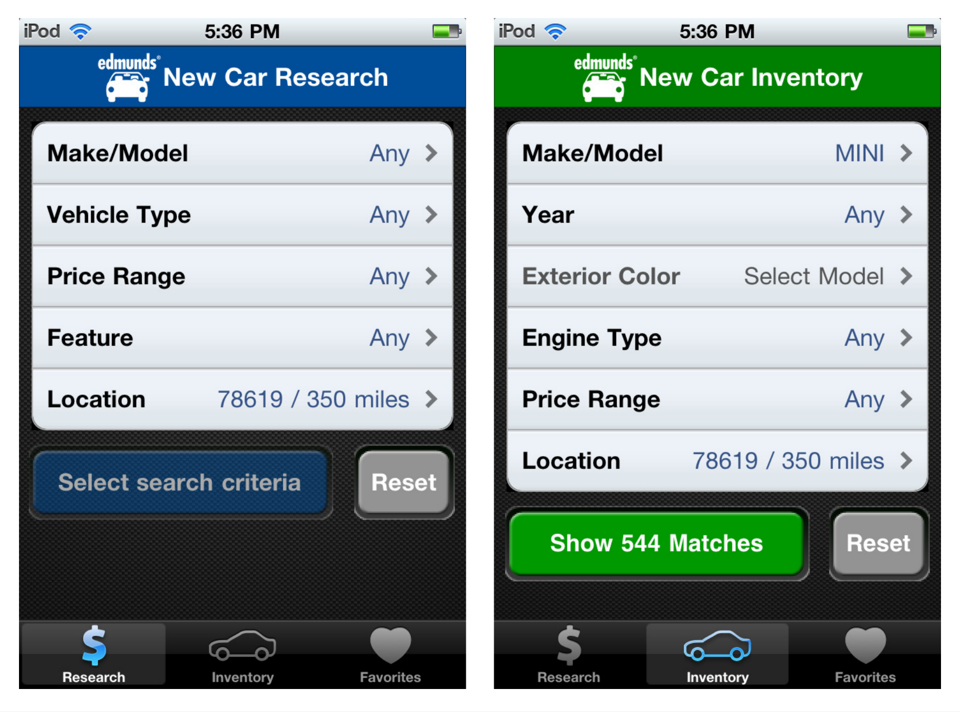


AUS Austin, TX - Austin...
LAX Los Angeles, CA
DEPART MON MAR 21
RETURN WED MAR 23
1 Traveler
Economy

LOCATION
Current Location
DATE & TIME
Sat, Jun 4, 2011
7:00PM
PARTY SIZE
2
MAX RESULTS
20 40 60 80 100

Figure 2-15. Kayak and Open Table

Edmunds' Car Research and New Car Inventory search are also single pages, and they implement a live preview displaying the number of matches before the full search is run.



Make/Model Any

Vehicle Type Any

Price Range Any

Feature Any

Location 78619 / 350 miles

Make/Model MINI

Year Any

Exterior Color Select Model

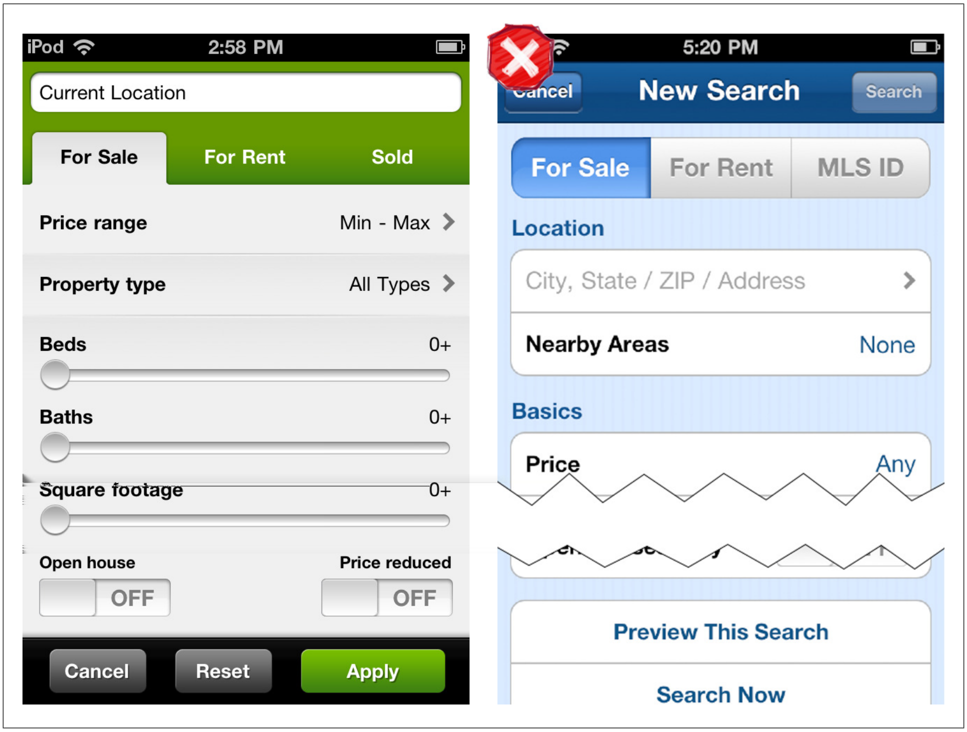
Engine Type Any

Price Range Any

Location 78619 / 350 miles

Figure 2-16. Edmund's New Car Research and New Car Inventory

Trulia and REALTOR.com offer similar search criteria, but Trulia's interface is easier to manipulate and less overwhelming than the dozen or so fields in REALTOR.com.



Price range Min - Max

Property type All Types

Beds 0+

Baths 0+

Square footage 0+

Open house OFF

Price reduced OFF

Nearby Areas None

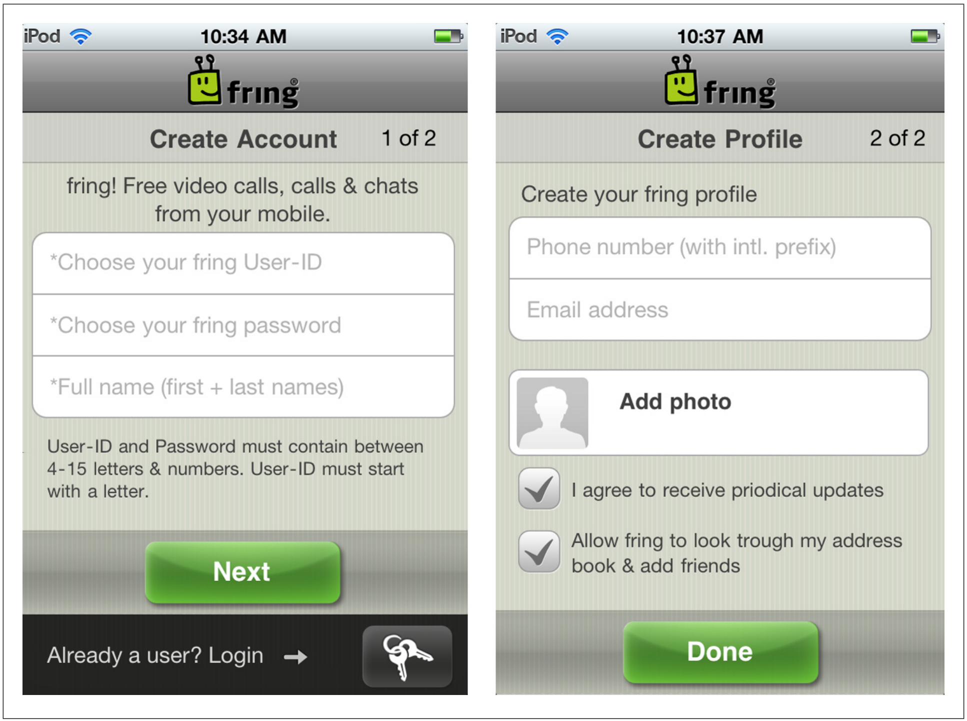
Price Any

Figure 2-17. Trulia's concise search form and REALTOR.com's long form

Avoid overwhelming the user with options, aim for a single page of criteria. Use appropriate controls that are finger friendly and fast.

Multi-Step

With smaller screens, mobile devices just don't have the real estate to display the bulky wizards normally associated with multi-step forms on the Web. A simple solution is to show the current step and number of total steps like Fring's registration flow.



fring! Free video calls, calls & chats from your mobile.

*Choose your fring User-ID

*Choose your fring password

*Full name (first + last names)

User-ID and Password must contain between 4-15 letters & numbers. User-ID must start with a letter.

Create your fring profile

Phone number (with intl. prefix)

Email address

☑ I agree to receive priodical updates

☑ Allow fring to look trough my address book & add friends

Figure 2-18. fring

More context may be necessary for lengthier flows. Product configurators like Chipotle's online ordering and Starbucks' drink builder guide the user with a *next* or *continue* button. But this approach skirts the fundamental usability rule of navigation: let the user know where they are and where they can go (i.e., step number x of y). Clear navigation is especially important in mobile forms, since there is a higher likelihood of the user being interrupted or otherwise distracted.

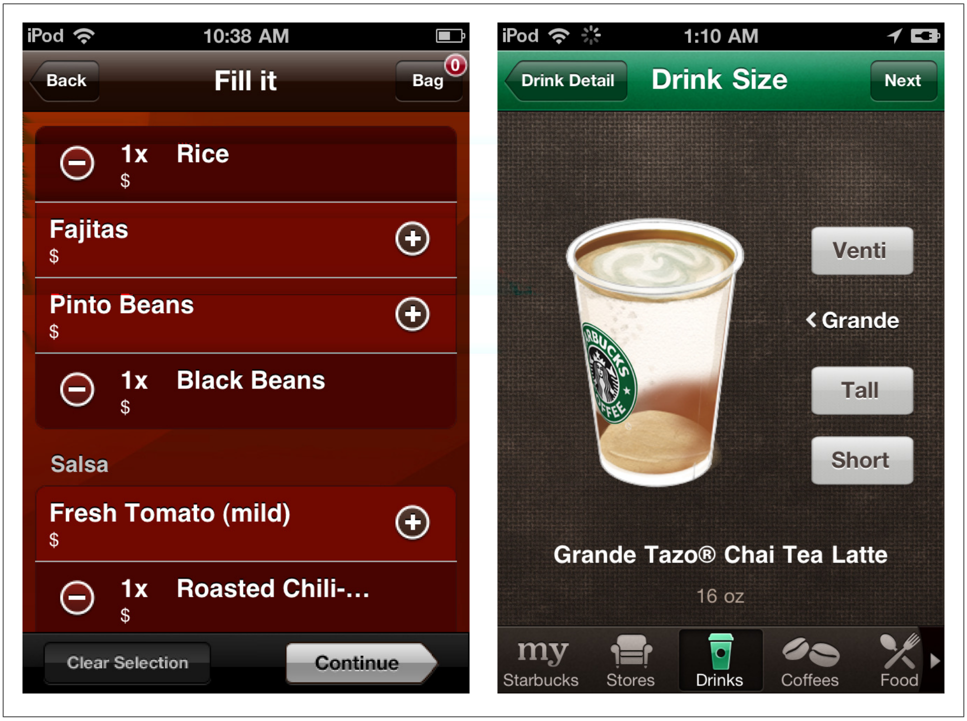


Figure 2-19. Chipotle and Starbucks

A better design is the TurboTax SnapTax app, where the steps and submit button are presented on a single page. Each step can be drilled into and completed. This single-page approach provides valuable navigation information (there are three steps in the process, two are remaining), but it also doubles as a concise summary to review before submitting.

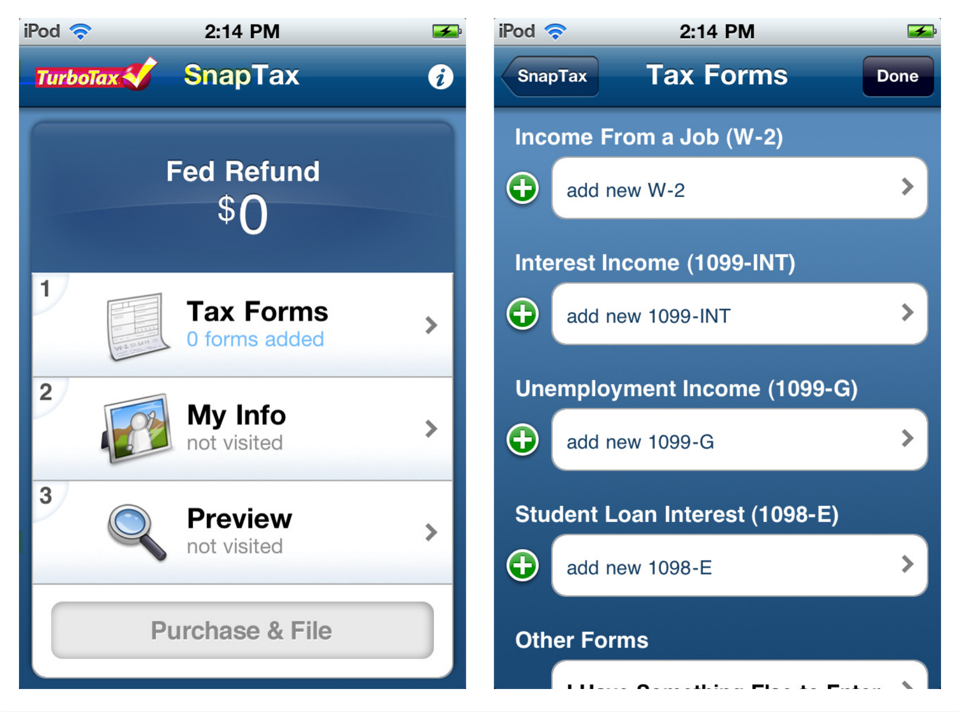
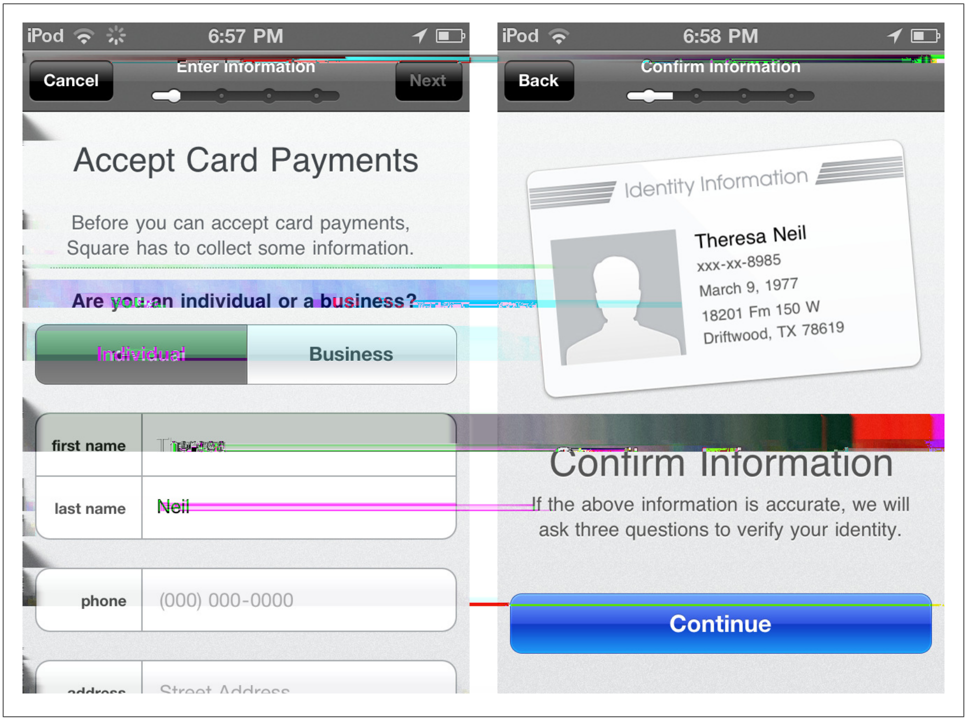


Figure 2-20. TurboTax Snap Tax

Square uses a stylized progress indicator in the title section of the app, providing both a visual indicator of the number of steps, and current step.



Accept Card Payments

Before you can accept card payments, Square has to collect some information.

Are you an individual or a business?

first name

last name Neil

phone (000) 000-0000

address Street Address

Identity Information

Theresa Neil
xxx-xx-8985
March 9, 1977
18201 Fm 150 W
Driftwood, TX 78619

Confirm Information

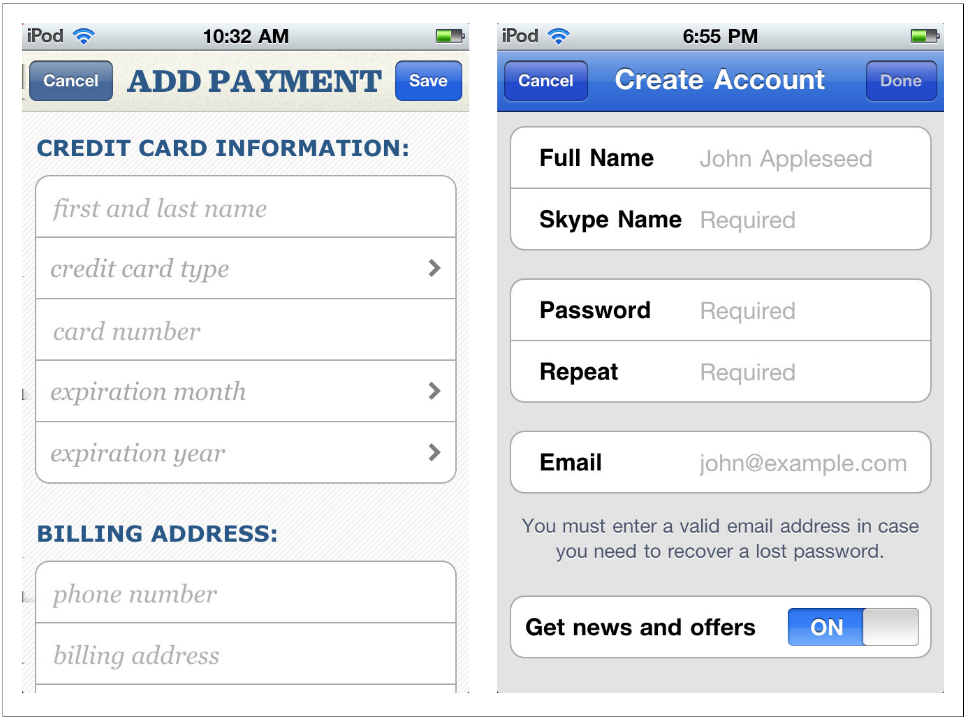
If the above information is accurate, we will ask three questions to verify your identity.

Figure 2-21. Square: set-up process

Show the user where they are and where they can go. Eliminate unnecessary fields and minimize the number of pages and steps.

Long Form

Some forms will require scrolling. The trickiest part of the Long Form is where to put the command and escape buttons. Zappos and Skype both use modal forms in their iOS apps, so the buttons are in the title bar.



CREDIT CARD INFORMATION:

first and last name
credit card type
card number
expiration month
expiration year

BILLING ADDRESS:

phone number
billing address

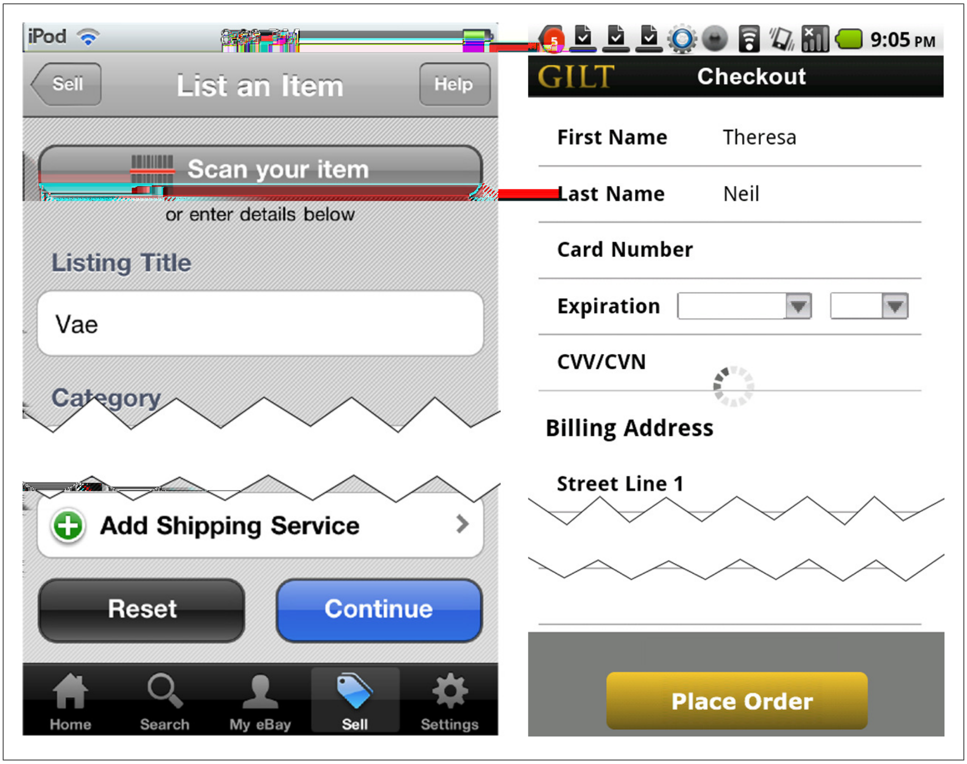
Full Name John Appleseed
Skype Name Required
Password Required
Repeat Required
Email john@example.com

You must enter a valid email address in case you need to recover a lost password.

Get news and offers ON

Figure 2-22. Long forms: Zappos and Skype

This would be nonstandard in other OSs, but simply placing the buttons at the bottom of the form works well.



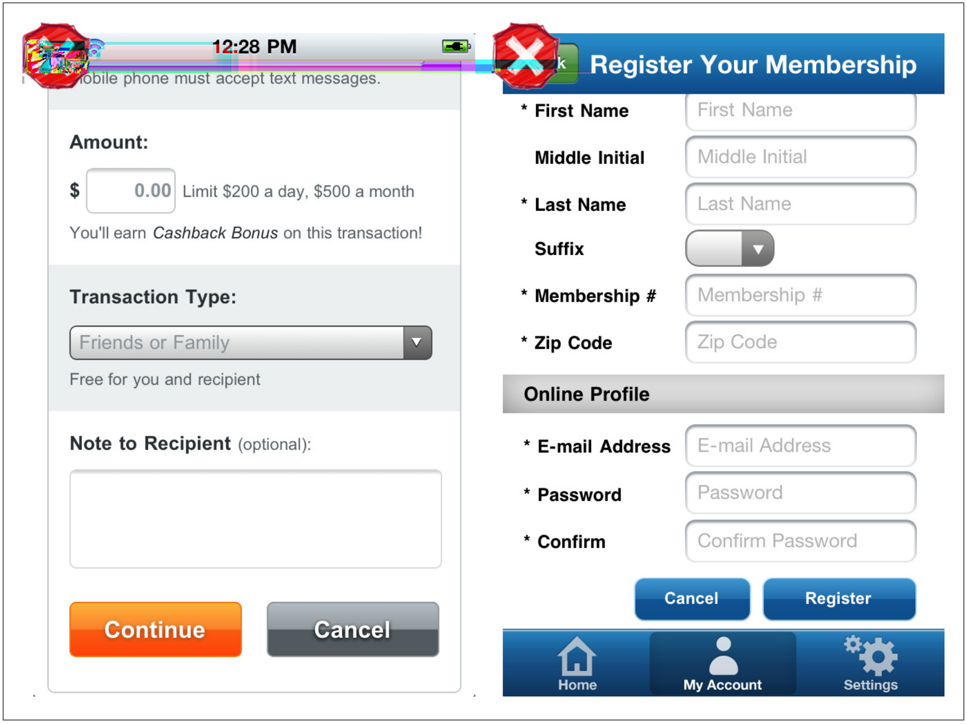
Listing Title: Vae

First Name: Theresa

Last Name: Neil

Figure 2-23. eBay's long listing form and Gilt's long checkout form

Follow form design best practices, as well as the guidelines specific to the OS for button order and alignment. Discover Card visually differentiates the command button from the escape button but has them in the wrong order for iOS. Sam's Club has the buttons in the right order, but the buttons have the same visual weight, so you have to look closely to choose the right one.



12:28 PM

obile phone must accept text messages.

Amount:

$ 0.00 Limit $200 a day, $500 a month

You'll earn *Cashback Bonus* on this transaction!

Transaction Type:

Friends or Family ▼

Free for you and recipient

Note to Recipient (optional):

Register Your Membership

* **First Name**	First Name
Middle Initial	Middle Initial
* **Last Name**	Last Name
Suffix	▼
* **Membership #**	Membership #
* **Zip Code**	Zip Code

Online Profile

* **E-mail Address**	E-mail Address
* **Password**	Password
* **Confirm**	Confirm Password

Figure 2-24. Discover, good design, wrong order; Sam's Club, correct layout, bad design

Don’t artificially break the form into steps just to prevent scrolling. Do ruthlessly edit the form for any unnecessary fields. Follow OS standards for button placement.

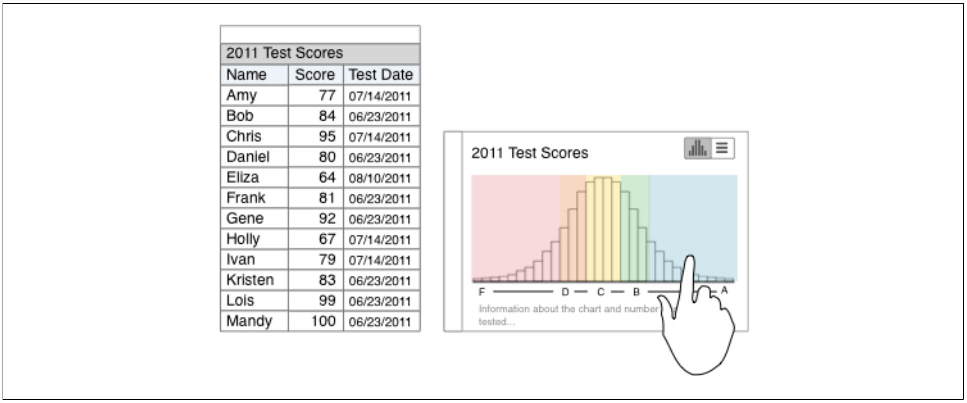
CHAPTER 3

Tables & Lists

Patterns: Basic Table, Headerless Tables, Grouped Rows, Fixed Column, Cascading Lists, Editable Tables, Tables with Visual Indicators. Overview plus Data

Many of our clients have enterprise applications or robust productivity tools t usually include tables packed full of data. Envision a table with dozens of columns that scrolls horizontally and vertically. They want to know how we're going to get those tables in their mobile app. Well, we're not. At least not in the same way we do on the Web. But the good news is that the mobile form factor gives us an opportunity to reevaluate which information is most important to display.

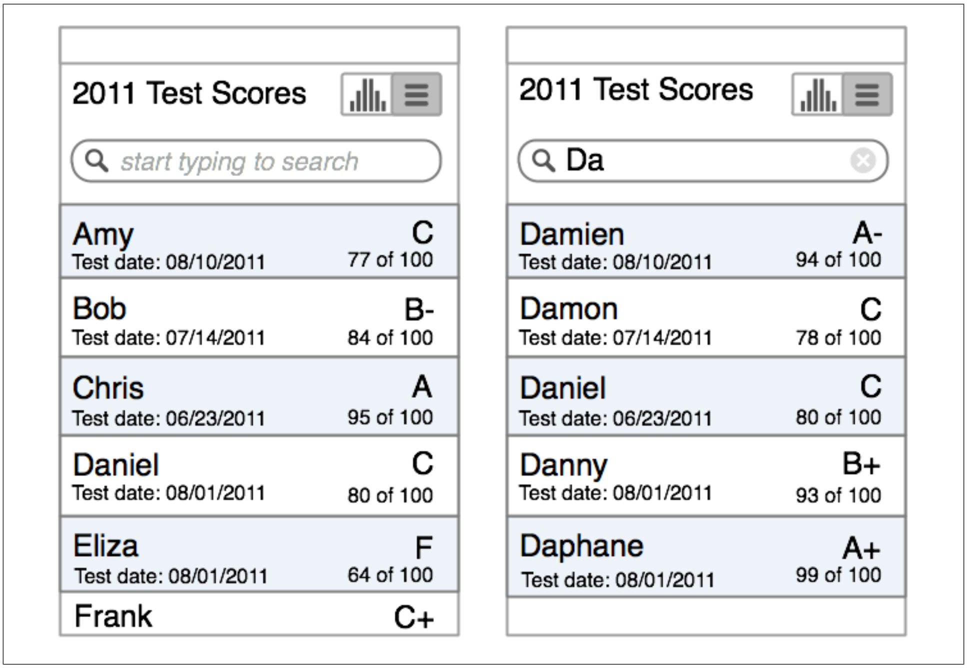
For example, a long table of student test results might be better represented as a chart that you could drill into to see all students who scored in a certain band of the bell curve:



2011 Test Scores		
Name	Score	Test Date
Amy	77	07/14/2011
Bob	84	06/23/2011
Chris	95	07/14/2011
Daniel	80	06/23/2011
Eliza	64	08/10/2011
Frank	81	06/23/2011
Gene	92	06/23/2011
Holly	67	07/14/2011
Ivan	79	07/14/2011
Kristen	83	06/23/2011
Lois	99	06/23/2011
Mandy	100	06/23/2011

Figure 3-1. Redesigned table

And we can provide an alternate view of the information using a Headerless Table with Dynamic Search for quickly accessing a specific student's results:



2011 Test Scores

start typing to search

Amy C
Test date: 08/10/2011 77 of 100

Bob B-
Test date: 07/14/2011 84 of 100

Chris A
Test date: 06/23/2011 95 of 100

Daniel C
Test date: 08/01/2011 80 of 100

Eliza F
Test date: 08/01/2011 64 of 100

Frank C+

2011 Test Scores

Da

Damien A-
Test date: 08/10/2011 94 of 100

Damon C
Test date: 07/14/2011 78 of 100

Daniel C
Test date: 06/23/2011 80 of 100

Danny B+
Test date: 08/01/2011 93 of 100

Daphane A+
Test date: 08/01/2011 99 of 100

Figure 3-2. Alternate view to the bell curve chart

Once you've identified the key data your app needs to display, check out these table patterns for inspiration:

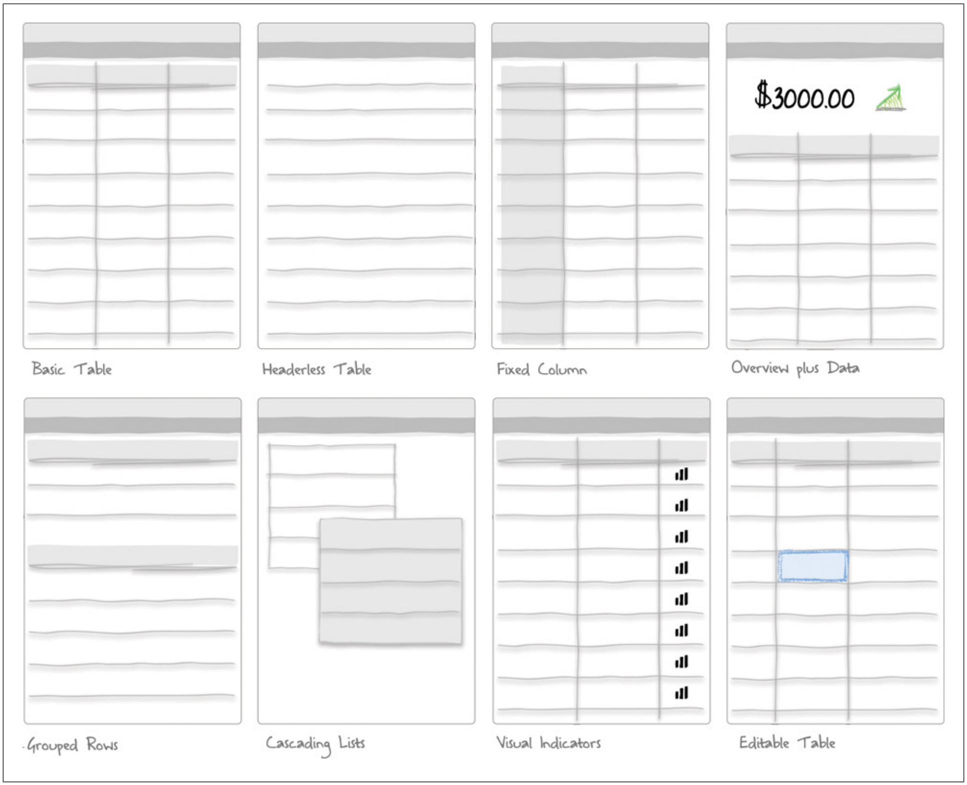
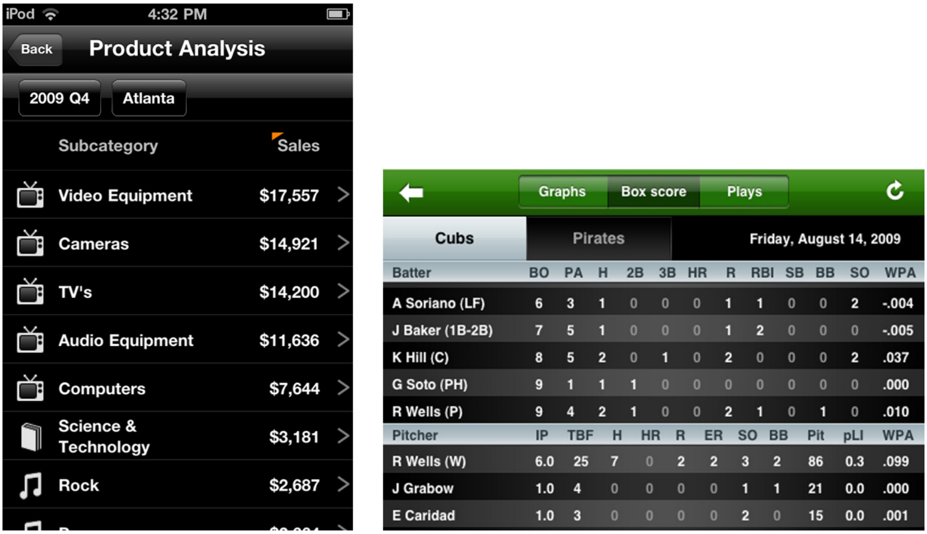


Figure 3-3. Table patterns

Basic Table

This is just a standard table with fixed column headers and a grid layout. Alternating table row colors, also called zebra stripping, or subtle lines between rows may improve the readability of the table.



Subcategory	Sales
Video Equipment	$17,557
Cameras	$14,921
TV's	$14,200
Audio Equipment	$11,636
Computers	$7,644
Science & Technology	$3,181
Rock	$2,687

Friday, August 14, 2009

Batter	BO	PA	H	2B	3B	HR	R	RBI	SB	BB	SO	WPA
A Soriano (LF)	6	3	1	0	0	0	1	1	0	0	2	-.004
J Baker (1B-2B)	7	5	1	0	0	0	1	2	0	0	0	-.005
K Hill (C)	8	5	2	0	1	0	2	0	0	0	2	.037
G Soto (PH)	9	1	1	1	0	0	0	0	0	0	0	.000
R Wells (P)	9	4	2	1	0	0	2	1	0	1	0	.010

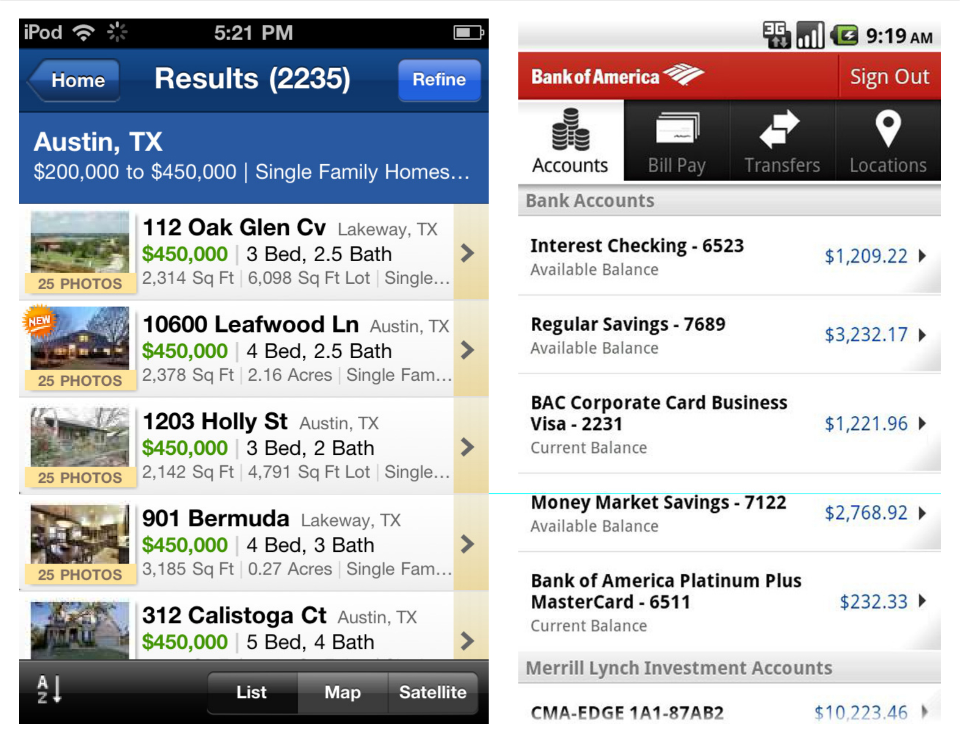
Pitcher	IP	TBF	H	HR	R	ER	SO	BB	Pit	pLI	WPA
R Wells (W)	6.0	25	7	0	2	2	3	2	86	0.3	.099
J Grabow	1.0	4	0	0	0	0	1	1	21	0.0	.000
E Caridad	1.0	3	0	0	0	0	2	0	15	0.0	.001

Figure 3-4. MicroStrategy Mobile and FanGraphs Baseball

Avoid using dark gridlines and vertical dividers. Left align text and right align numbers. Don't overload the screen. Consider an alternate pattern if there is too much information to fit on a single screen.

Headerless Table

The headerless table is characterized by fat rows displaying multiple variables about an object, and no column labels. It is common practice to make the row identifier a larger font and display the details in a smaller font. Realtor.com tests the limits of what you can fit in these fat rows. They probably should have omitted the redundant dwelling type (Single Family, shown truncated as Single… and Single Fam…) description, since that information is clearly communicated in the title above the table.



Austin, TX
$200,000 to $450,000 | Single Family Homes…

112 Oak Glen Cv Lakeway, TX
$450,000 | 3 Bed, 2.5 Bath
2,314 Sq Ft | 6,098 Sq Ft Lot | Single…
25 PHOTOS

10600 Leafwood Ln Austin, TX
$450,000 | 4 Bed, 2.5 Bath
2,378 Sq Ft | 2.16 Acres | Single Fam…
NEW
25 PHOTOS

1203 Holly St Austin, TX
$450,000 | 3 Bed, 2 Bath
2,142 Sq Ft | 4,791 Sq Ft Lot | Single…
25 PHOTOS

901 Bermuda Lakeway, TX
$450,000 | 4 Bed, 3 Bath
3,185 Sq Ft | 0.27 Acres | Single Fam…
25 PHOTOS

312 Calistoga Ct Austin, TX
$450,000 | 5 Bed, 4 Bath

Bank Accounts

Interest Checking - 6523 $1,209.22
Available Balance

Regular Savings - 7689 $3,232.17
Available Balance

BAC Corporate Card Business Visa - 2231 $1,221.96
Current Balance

Money Market Savings - 7122 $2,768.92
Available Balance

Bank of America Platinum Plus MasterCard - 6511 $232.33
Current Balance

Merrill Lynch Investment Accounts

CMA-EDGE 1A1-87AB2 $10,223.46

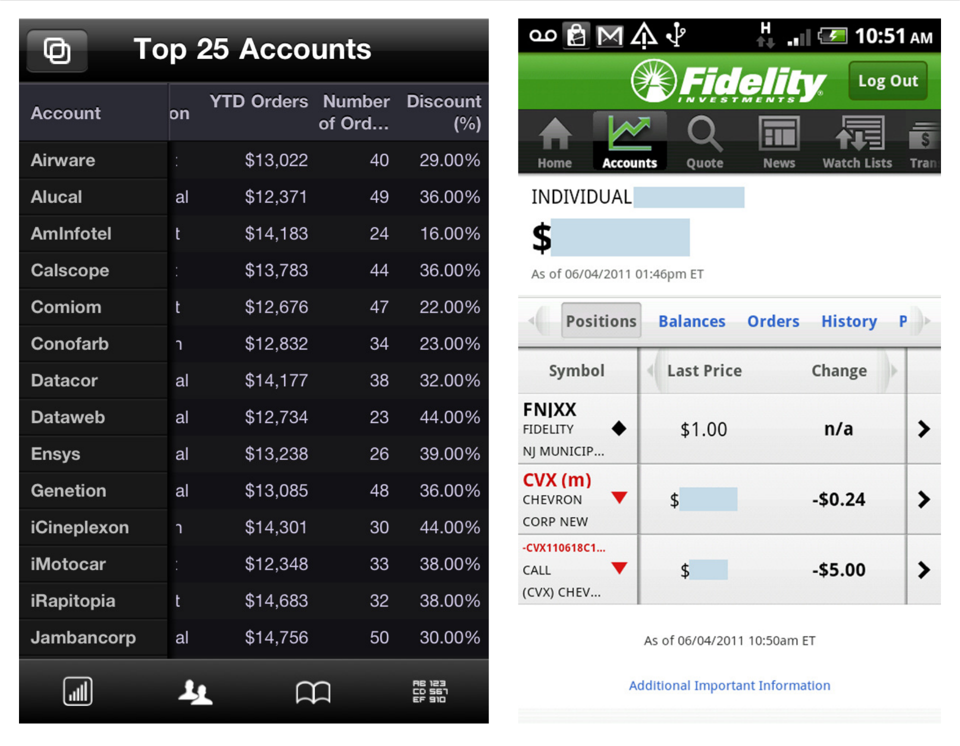
Figure 3-5. REALTOR.com and Bank of America

The pattern is ideal for displaying collections of items (like inventory, recipes, albums, etc.) and search results. Like a list, this pattern is meant for quick scanning and selection.

Three rows of information maximum per fat row. Use smaller and/or lighter font for less important details. Don't guess what the most important information is, ask your customers and validate the designs.

Fixed Column

For larger tables, the fixed column pattern may be a viable solution. In this example from Roambi, the leftmost column is frozen and the rest of the columns scroll. Fidelity uses fixed columns on the left and right with scrolling content in the center, but this design is harder to navigate than Roambi's, since there is a smaller target for swiping.



Top 25 Accounts

Account	on	YTD Orders	Number of Ord...	Discount (%)
Airware	:	$13,022	40	29.00%
Alucal	al	$12,371	49	36.00%
AmInfotel	t	$14,183	24	16.00%
Calscope	:	$13,783	44	36.00%
Comiom	t	$12,676	47	22.00%
Conofarb	ı	$12,832	34	23.00%
Datacor	al	$14,177	38	32.00%
Dataweb	al	$12,734	23	44.00%
Ensys	al	$13,238	26	39.00%
Genetion	al	$13,085	48	36.00%
iCineplexon	ı	$14,301	30	44.00%
iMotocar	:	$12,348	33	38.00%
iRapitopia	t	$14,683	32	38.00%
Jambancorp	al	$14,756	50	30.00%

INDIVIDUAL

$

As of 06/04/2011 01:46pm ET

Symbol	Last Price	Change
FNJXX FIDELITY NJ MUNICIP...	$1.00	n/a
CVX (m) CHEVRON CORP NEW	$	-$0.24
-CVX110618C1... CALL (CVX) CHEV...	$	-$5.00

As of 06/04/2011 10:50am ET

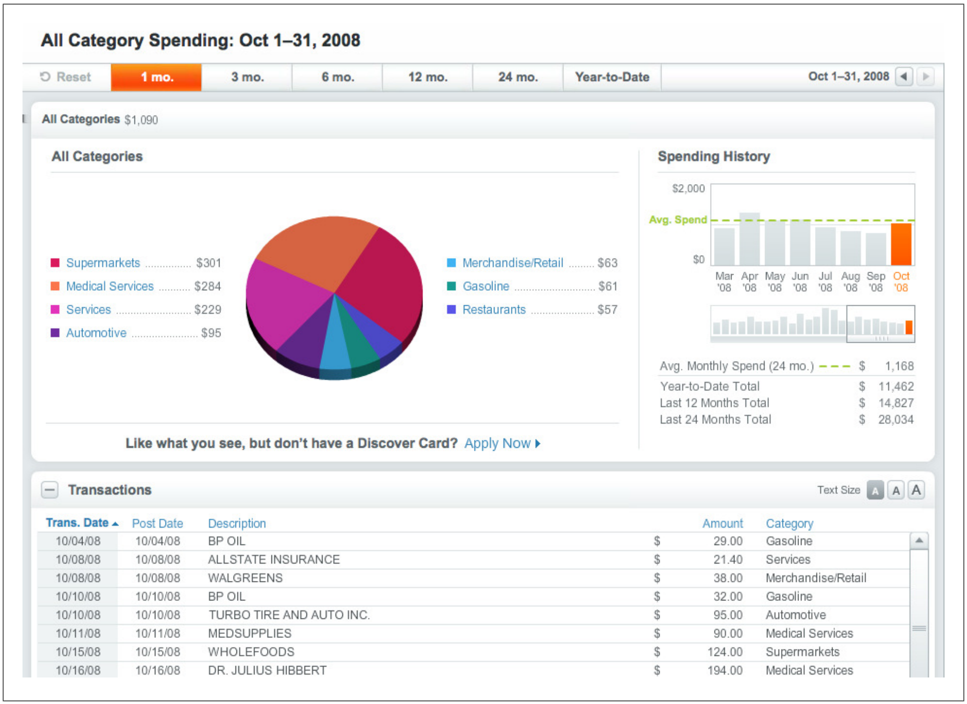
Additional Important Information

Figure 3-6. Roambi and Fidelity (middle area scrolls)

Provide visual affordance which column is fixed, and that swiping can reveal more data.

Overview plus Data

The Overview plus Data pattern refers to a roll-up or summary of the table's content displayed above the individual rows of data. My favorite example of this in a web app is in Discover's SpendAnalyzer.



All Category Spending: Oct 1–31, 2008

All Categories $1,090

All Categories

🟥 Supermarkets	$301
🟧 Medical Services	$284
Services	$229
Automotive	$95
🟦 Merchandise/Retail	$63
🟩 Gasoline	$61
Restaurants	$57

Spending History

Avg. Monthly Spend (24 mo.)	$	1,168
Year-to-Date Total	$	11,462
Last 12 Months Total	$	14,827
Last 24 Months Total	$	28,034

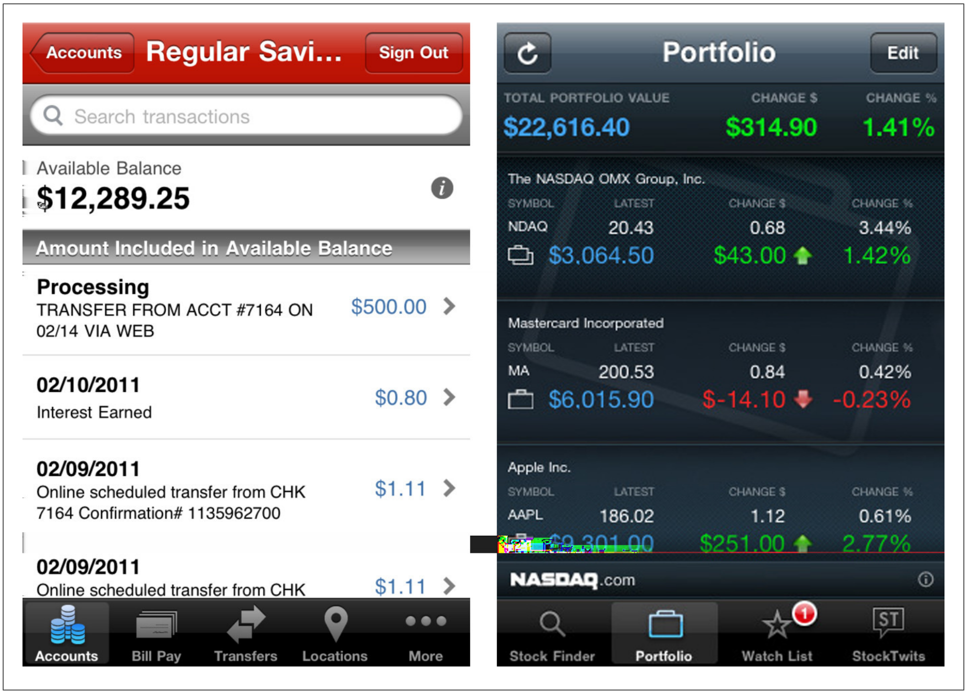
Like what you see, but don't have a Discover Card? Apply Now ▸

Transactions

Trans. Date ▴	Post Date	Description		Amount	Category
10/04/08	10/04/08	BP OIL	$	29.00	Gasoline
10/08/08	10/08/08	ALLSTATE INSURANCE	$	21.40	Services
10/08/08	10/08/08	WALGREENS	$	38.00	Merchandise/Retail
10/10/08	10/10/08	BP OIL	$	32.00	Gasoline
10/10/08	10/10/08	TURBO TIRE AND AUTO INC.	$	95.00	Automotive
10/11/08	10/11/08	MEDSUPPLIES	$	90.00	Medical Services
10/15/08	10/15/08	WHOLEFOODS	$	124.00	Supermarkets
10/16/08	10/16/08	DR. JULIUS HIBBERT	$	194.00	Medical Services

Figure 3-7. Discover SpendAnalyzer

In mobile apps, like Bank of America's accounts page, the available balance in the savings account (overview) is shown in large font over the account details (data). In the other example from NASDAQ.com, the overview is fixed above the content, so you can scroll through the portfolio without loosing the summary.



Available Balance
$12,289.25

Amount Included in Available Balance

Processing
TRANSFER FROM ACCT #7164 ON 02/14 VIA WEB — $500.00

02/10/2011
Interest Earned — $0.80

02/09/2011
Online scheduled transfer from CHK 7164 Confirmation# 1135962700 — $1.11

02/09/2011
Online scheduled transfer from CHK — $1.11

TOTAL PORTFOLIO VALUE	CHANGE $	CHANGE %
$22,616.40	$314.90	1.41%

The NASDAQ OMX Group, Inc.

SYMBOL	LATEST	CHANGE $	CHANGE %
NDAQ	20.43	0.68	3.44%
$3,064.50		$43.00	1.42%

Mastercard Incorporated

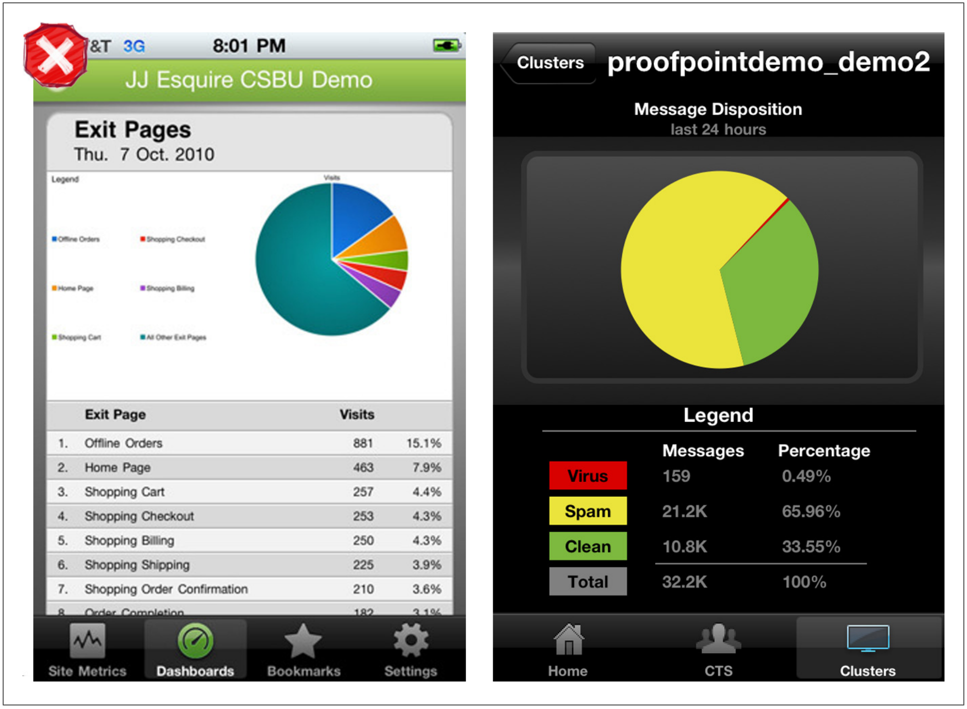
SYMBOL	LATEST	CHANGE $	CHANGE %
MA	200.53	0.84	0.42%
$6,015.90		$-14.10	-0.23%

Apple Inc.

SYMBOL	LATEST	CHANGE $	CHANGE %
AAPL	186.02	1.12	0.61%
$9,301.00		$251.00	2.77%

Figure 3-8. Bank of America and QFolio

Adobe Site Catalyst uses a graph for the summary; however, the pie chart design needs improvement since the legend is illegible. Proofpoint does a nice job of incorporating the legend with the data.



Exit Pages
Thu. 7 Oct. 2010

	Exit Page	Visits	
1.	Offline Orders	881	15.1%
2.	Home Page	463	7.9%
3.	Shopping Cart	257	4.4%
4.	Shopping Checkout	253	4.3%
5.	Shopping Billing	250	4.3%
6.	Shopping Shipping	225	3.9%
7.	Shopping Order Confirmation	210	3.6%
8.	Order Completion	182	3.1%

proofpointdemo_demo2

Message Disposition
last 24 hours

Legend

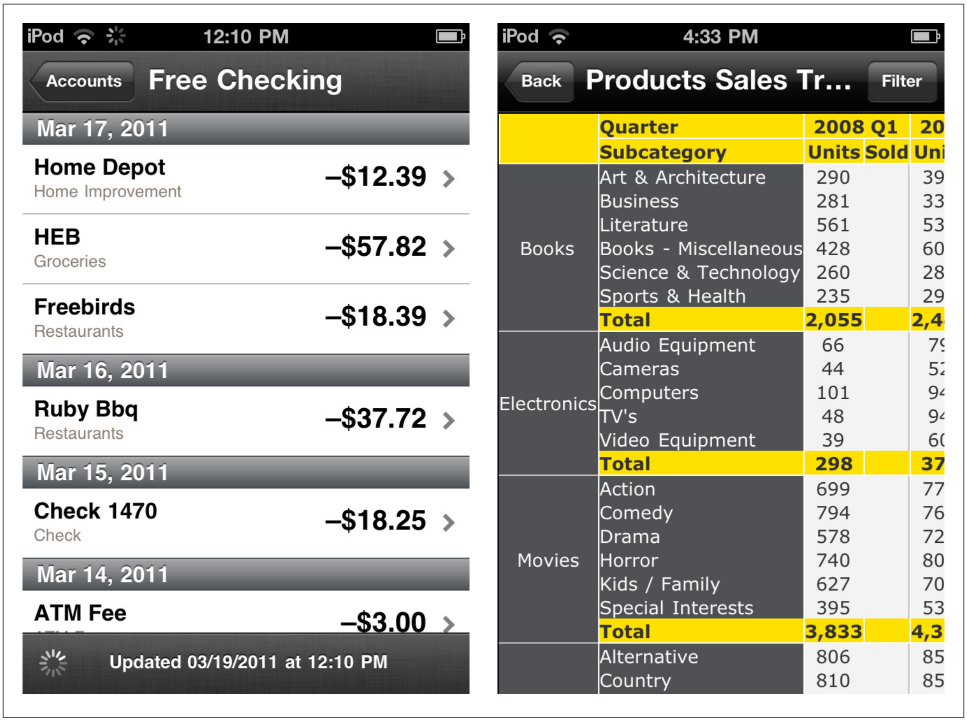
	Messages	Percentage
Virus	159	0.49%
Spam	21.2K	65.96%
Clean	10.8K	33.55%
Total	32.2K	100%

Figure 3-9. SiteCatalyst and ProofPoint

The overview should be presented above the data and be easy to understand at a glance.

Grouped Rows

Row grouping can make a table's data easier to digest. The row groupings might act as section headers, like transactions grouped by date in the Mint example, or as subsection summaries, like the yellow total rows in the MicroStrategy Mobile example.



iPod 12:10 PM

Accounts Free Checking

Mar 17, 2011

Home Depot Home Improvement	–$12.39
HEB Groceries	–$57.82
Freebirds Restaurants	–$18.39

Mar 16, 2011

Ruby Bbq Restaurants	–$37.72

Mar 15, 2011

Check 1470 Check	–$18.25

Mar 14, 2011

ATM Fee	–$3.00

Updated 03/19/2011 at 12:10 PM

iPod 4:33 PM

Back Products Sales Tr... Filter

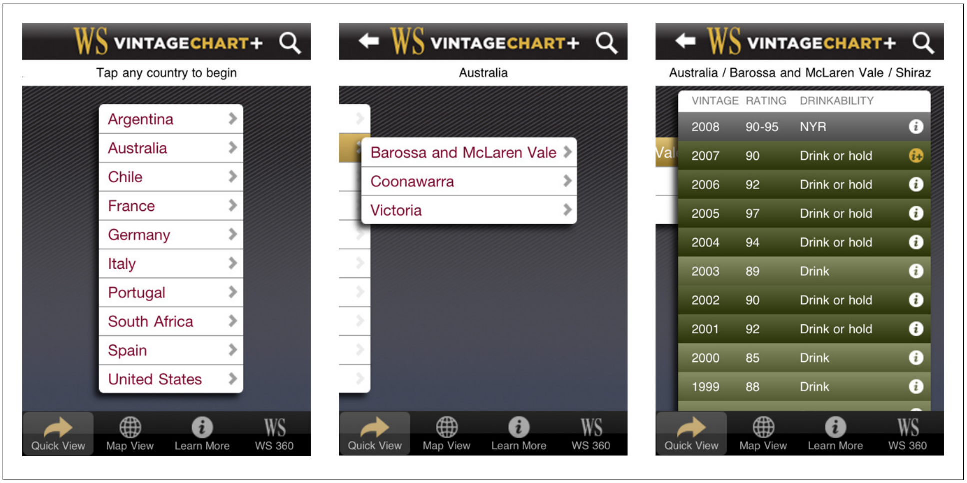
	Quarter	2008 Q1	20
	Subcategory	Units Sold	Uni
Books	Art & Architecture	290	39
	Business	281	33
	Literature	561	53
	Books - Miscellaneous	428	60
	Science & Technology	260	28
	Sports & Health	235	29
	Total	2,055	2,4
Electronics	Audio Equipment	66	79
	Cameras	44	52
	Computers	101	94
	TV's	48	94
	Video Equipment	39	60
	Total	298	37
Movies	Action	699	77
	Comedy	794	76
	Drama	578	72
	Horror	740	80
	Kids / Family	627	70
	Special Interests	395	53
	Total	3,833	4,3
	Alternative	806	85
	Country	810	85

Figure 3-10. Mint and MicroStrategy

Visually differentiate the summary rows from the other rows in the table.

Cascading Lists

For obvious reasons, a tree table would be pretty cumbersome on a phone screen, but a cascading list can provide the same hierarchal structure. This cascading list in Wine Spectator makes it easy to navigate from country to variety to the vintage table.



VINTAGE	RATING	DRINKABILITY
2008	90-95	NYR
2007	90	Drink or hold
2006	92	Drink or hold
2005	97	Drink or hold
2004	94	Drink or hold
2003	89	Drink
2002	90	Drink or hold
2001	92	Drink or hold
2000	85	Drink
1999	88	Drink

Figure 3-11. WineSpectator

iOS refers to this as a Table View, a UI element that "presents data in a single-column list of multiple rows." DropBox uses this pattern for their secondary navigation within the DropBox tab.

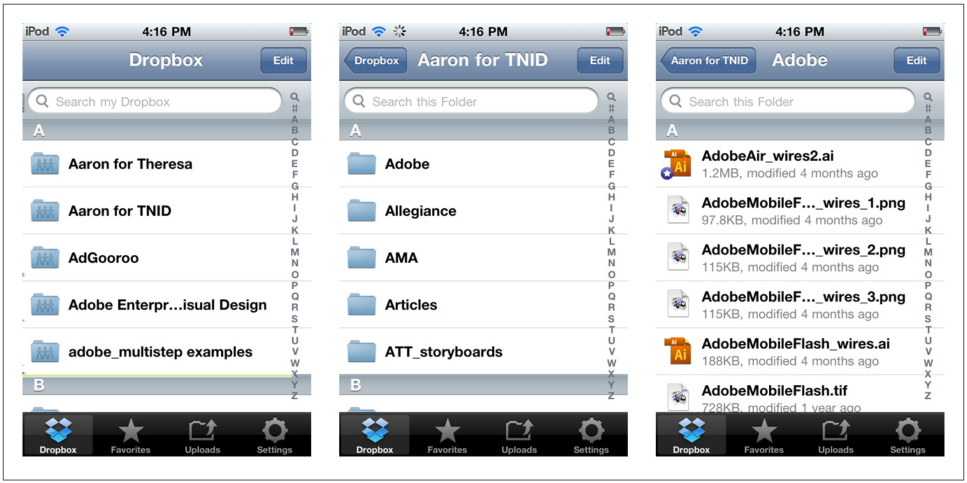
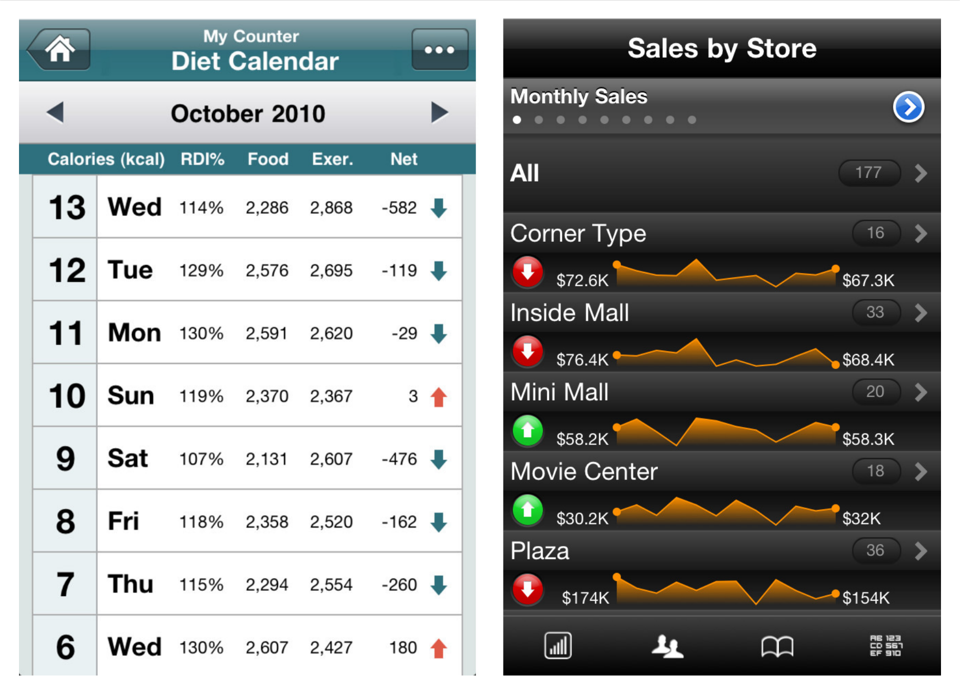

iPod 4:16 PM
Dropbox
Edit
Search my Dropbox
A
Aaron for Theresa
Aaron for TNID
AdGooroo
Adobe Enterpr...isual Design
adobe_multistep examples
B
Dropbox
Aaron for TNID
Search this Folder
Adobe
Allegiance
AMA
Articles
ATT_storyboards
Adobe
AdobeAir_wires2.ai
1.2MB, modified 4 months ago
AdobeMobileF..._wires_1.png
97.8KB, modified 4 months ago
AdobeMobileF..._wires_2.png
115KB, modified 4 months ago
AdobeMobileF..._wires_3.png
115KB, modified 4 months ago
AdobeMobileFlash_wires.ai
188KB, modified 4 months ago
AdobeMobileFlash.tif
728KB, modified 1 year ago
Favorites
Uploads
Settings

Figure 3-12. DropBox

Use a fairly flat information hierarchy to avoid deep drilling (more than three levels) in the application. Deep drilling may not be avoidable if the Cascading List pattern is used to navigate a user defined information hierarchy.

Table with Visual Indicators

Sparklines and icons can enhance a table's information display, making it easier to hone in on specific items of interest. My Diet Calendar uses color-coded arrows to show if my net caloric intake is higher or lower than what I have expended for the day. The Roambi Sales by Store table uses sparklines plus icons to show the shape of the monthly sales numbers and trends.



My Counter
Diet Calendar

◀ October 2010 ▶

	Calories (kcal)	RDI%	Food	Exer.	Net	
13	Wed	114%	2,286	2,868	-582	↓
12	Tue	129%	2,576	2,695	-119	↓
11	Mon	130%	2,591	2,620	-29	↓
10	Sun	119%	2,370	2,367	3	↑
9	Sat	107%	2,131	2,607	-476	↓
8	Fri	118%	2,358	2,520	-162	↓
7	Thu	115%	2,294	2,554	-260	↓
6	Wed	130%	2,607	2,427	180	↑

Sales by Store

Monthly Sales

All	177			
Corner Type	16	↓	$72.6K	$67.3K
Inside Mall	33	↓	$76.4K	$68.4K
Mini Mall	20	↑	$58.2K	$58.3K
Movie Center	18	↑	$30.2K	$32K
Plaza	36	↓	$174K	$154K

Figure 3-13. My Diet Calendar and Roambi

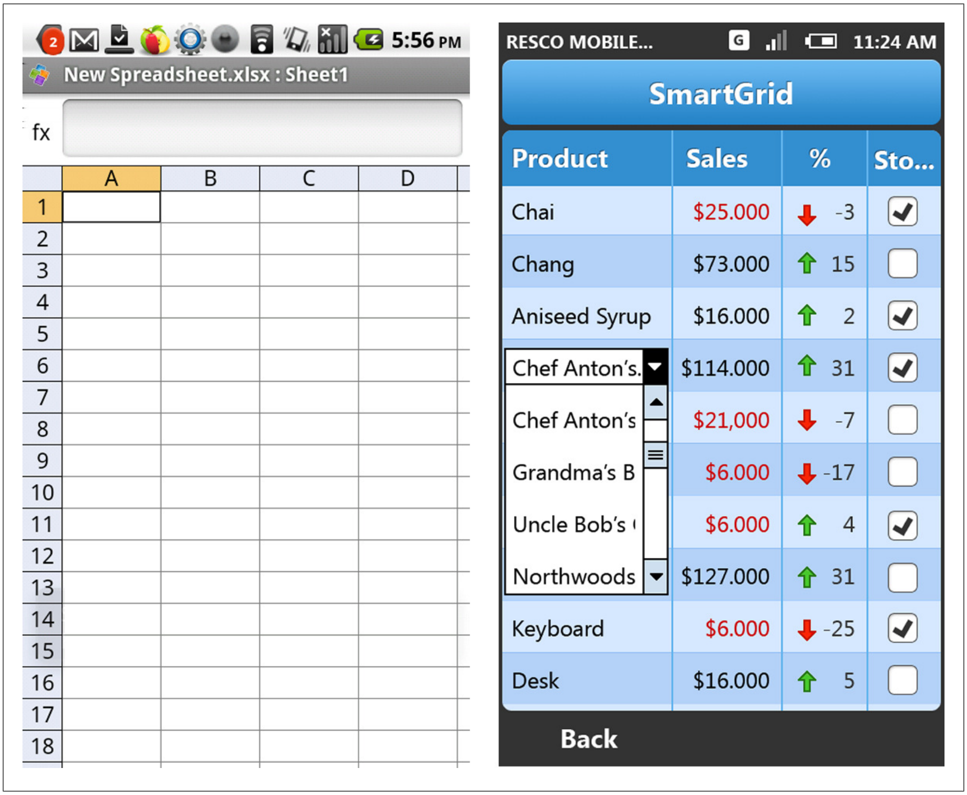
See Chapter 6, for more information about sparklines in mobile apps.

Choose visual indicators that are immediately recognizable; avoid gratuitous icon use.

Editable Table

Editable tables in mobile interfaces are almost exclusively found in spreadsheet applications like QuickOffice. Many of the same guidelines for editable tables on the Web apply to mobile:

- Clearly indicate the cell and/or row selected.
- If there is a specific format for the cell, offer the appropriate editor (selector, spinner, color picker, date picker…).
- Provide feedback and error messages onSave, not onChange.



Product	Sales	%	Sto...
Chai	$25.000	↓ -3	☑
Chang	$73.000	↑ 15	□
Aniseed Syrup	$16.000	↑ 2	☑
Chef Anton's. ▼	$114.000	↑ 31	☑
Chef Anton's	$21,000	↓ -7	□
Grandma's B	$6.000	↓ -17	□
Uncle Bob's	$6.000	↑ 4	☑
Northwoods	$127.000	↑ 31	□
Keyboard	$6.000	↓ -25	☑
Desk	$16.000	↑ 5	□

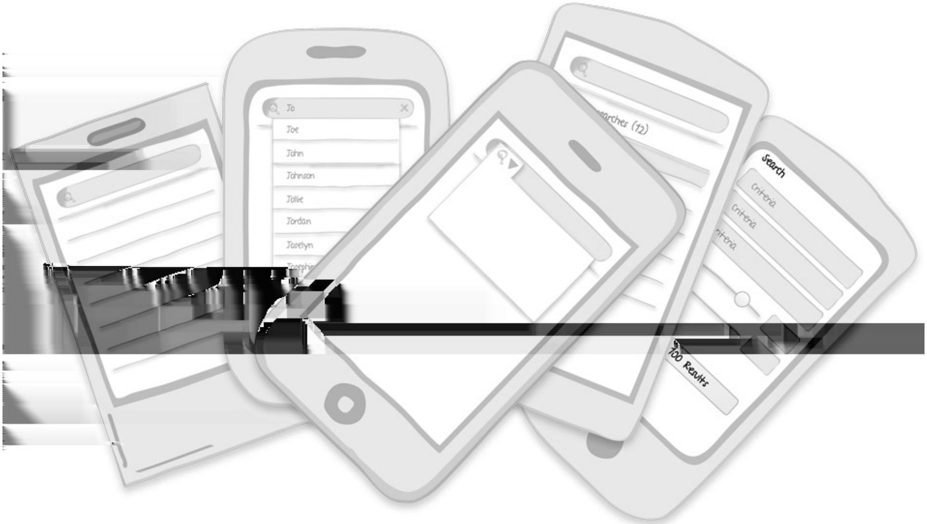
Figure 3-14. QuickOffice on Android and Windows Smart Grid

Unlike on the Web, editable tables on mobile devices are not appropriate for extensive data entry since keyboard navigation (specifically tabbing) isn't supported by most mobile keyboards.

Leverage web and desktop design best practices for editable tables. Avoid using editable tables for bulk data entry, or when extensive amounts of edits could be necessary.

CHAPTER 4

Search, Sort & Filter



Patterns: Explicit Search, Auto-complete, Scoped Search, Saved & Recent, Search Criteria (form), Search Results, Onscreen Sort, Sort Order Selector, Sort Form, Onscreen filter, Filter Drawer, Filter Dialog, Filter Form

As I was waiting for a table at a local restaurant the other day, I flipped through a couple of the free classified papers. I was shocked to realize how dependent I've grown on three simple features that just aren't available in a paper-based model: search, sort, and filter.

AutoDirect and some of the other freebies may be organized by category (like trucks, vans, SUVs) but others like Greensheet just list page after page of items for sale. I would actually have to read every single ad in the paper to see if anyone was selling what I wanted. No thank you. I'll use Craig's List on my phone instead.

But this got me thinking. While we take search, sort, and filter for granted in our digital world, there are some nuances to getting it right in a mobile application. This chapter explores a dozen plus different approaches to search, sort, and filter in mobile applications.

Search

Peter Morville and Jeffery Callendar provide an excellent summary of design patterns for searching in *Search Patterns: Design for Discovery*(O'Reilly), January 2010 (*http://shop.oreilly.com/product/9780596802288.do*). I highly recommend reading this book before designing any search interface, whether for mobile or other platforms.

In this section, we'll look at search patterns specific to mobile applications including patterns for:

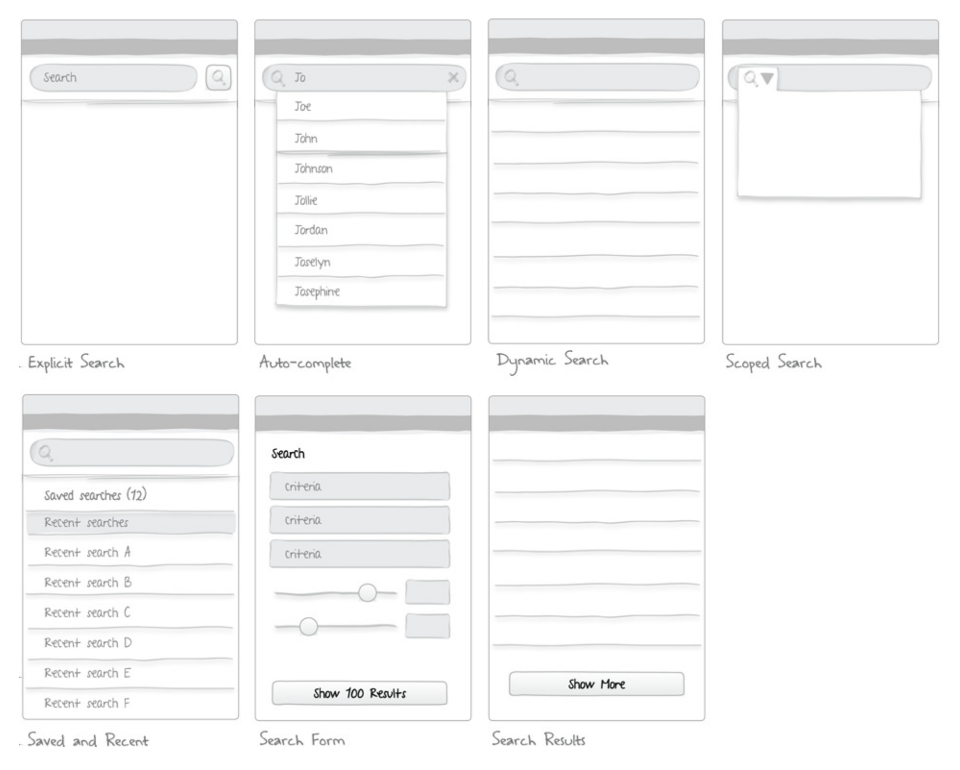


Figure 4-1. Search patterns

Explicit Search

Explicit search relies on an explicit action to perform the search and view results. That action might be to tap a search button on the screen, like Walmart, or on the keyboard, like Target. The results are typically displayed in the area below the search bar. Consider pairing an explicit search pattern with the auto-complete pattern.

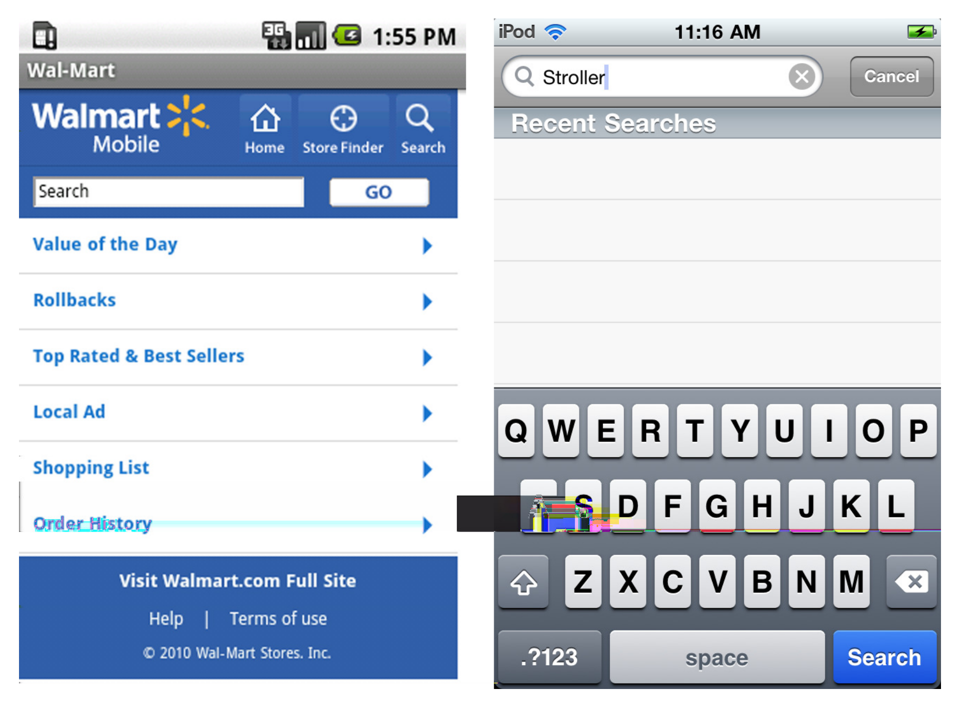
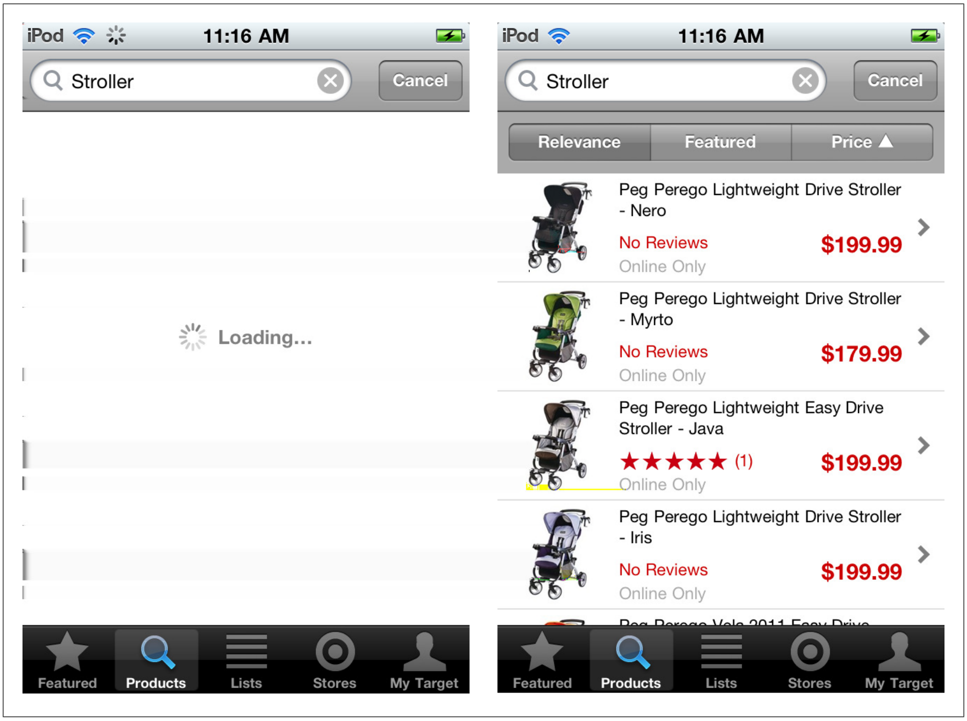


Figure 4-2. Walmart, search button on screen; Target, search button on keyboard



Peg Perego Lightweight Drive Stroller - Nero
No Reviews $199.99
Online Only

Peg Perego Lightweight Drive Stroller - Myrto
No Reviews $179.99
Online Only

Peg Perego Lightweight Easy Drive Stroller - Java
★★★★★ (1) $199.99
Online Only

Peg Perego Lightweight Drive Stroller - Iris
No Reviews $199.99
Online Only

Peg Perego Vela 2011 Easy Drive

Figure 4-3. Target, loading and displaying search results

Offer a clear button in the field and an option to cancel the search. Use feedback to show the search is being performed (see Chapter 8).

Search with Auto-Complete

Probably the most widely adopted search patterns in web and mobile apps is auto-complete. Typing will immediately surface a set of possible results, just tap on one to selected it, and the search will be performed. Or continue typing and tap the explicit search button.

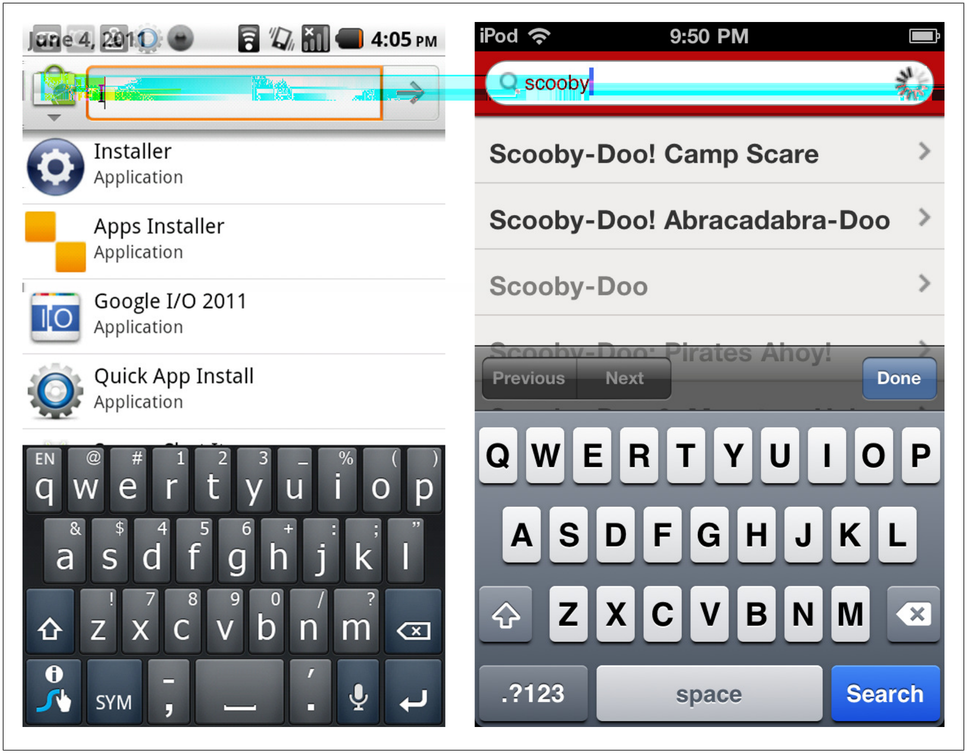
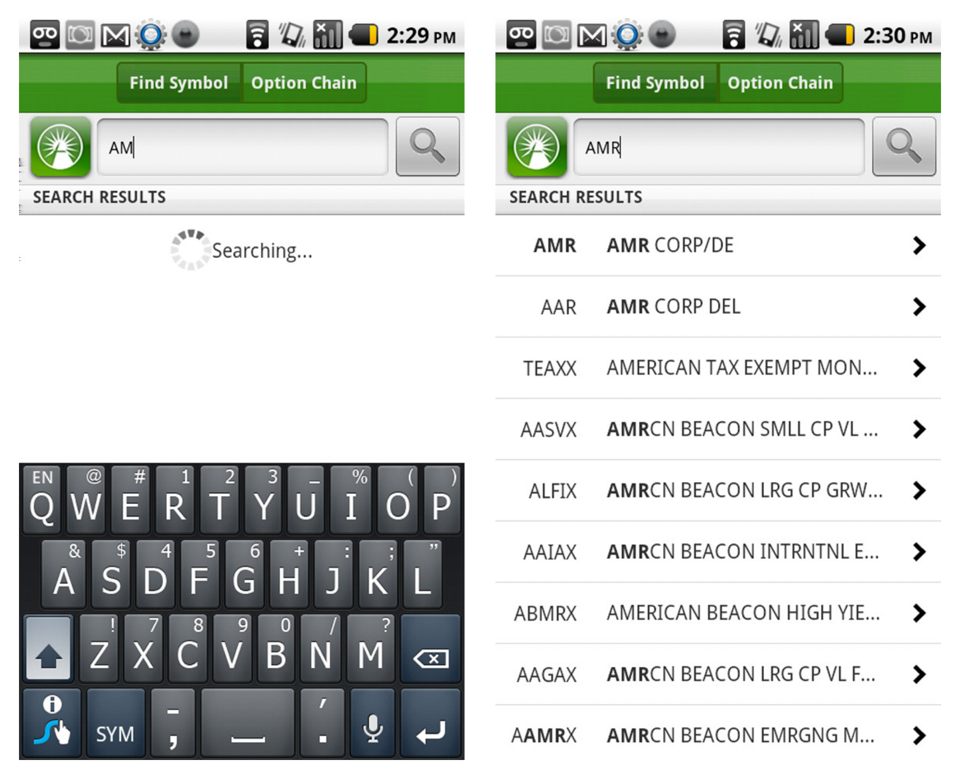


Figure 4-4. Android Marketplace and Netflix

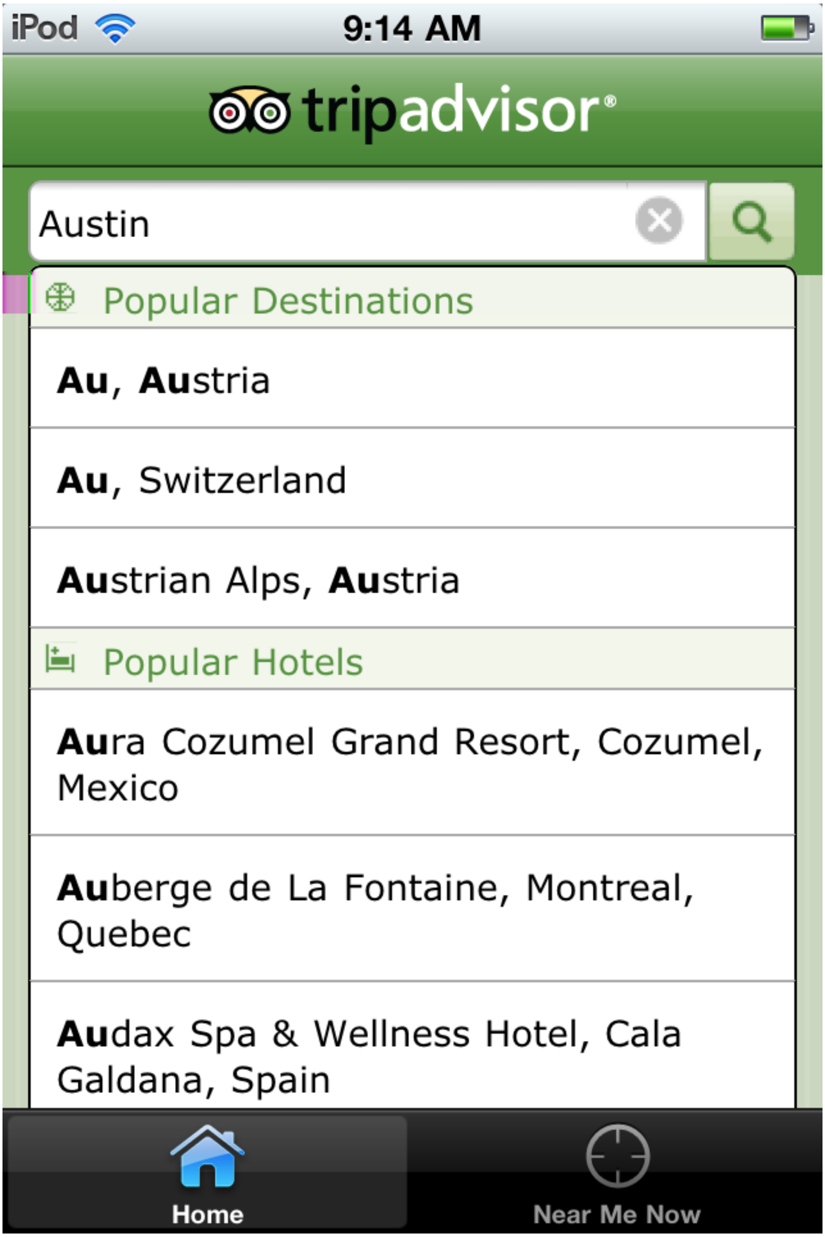
Ideally, the results will be displayed immediately, but a progress indicator (searching...) should be used for system feedback. Netflix (above) uses an indicator in the search field, whereas Fidelity (below) displays one where the results will eventually be displayed.



AMR	**AMR** CORP/DE
AAR	**AMR** CORP DEL
TEAXX	AMERICAN TAX EXEMPT MON...
AASVX	**AMR**CN BEACON SMLL CP VL ...
ALFIX	**AMR**CN BEACON LRG CP GRW...
AAIAX	**AMR**CN BEACON INTRNTNL E...
ABMRX	AMERICAN BEACON HIGH YIE...
AAGAX	**AMR**CN BEACON LRG CP VL F...
A**AMR**X	**AMR**CN BEACON EMRGNG M...

Figure 4-5. Fidelity

TripAdvisor provides an enhanced auto-complete, grouping the results by popular destinations, hotels, restaurants...



Austin

Popular Destinations

Au, **Au**stria

Au, Switzerland

Austrian Alps, **Au**stria

Popular Hotels

Aura Cozumel Grand Resort, Cozumel, Mexico

Auberge de La Fontaine, Montreal, Quebec

Audax Spa & Wellness Hotel, Cala Galdana, Spain

Figure 4-6. TripAdvisor

Show feedback if there could be a delay in displaying the results. Consider emphasizing the matching search text in the search results.

Dynamic Search

This pattern may also be considered dynamic filtering. Entering search text will dynamically filter the data on the screen. In these examples from BlackBerry App World and People on webOS, entering text filters the existing list of items.

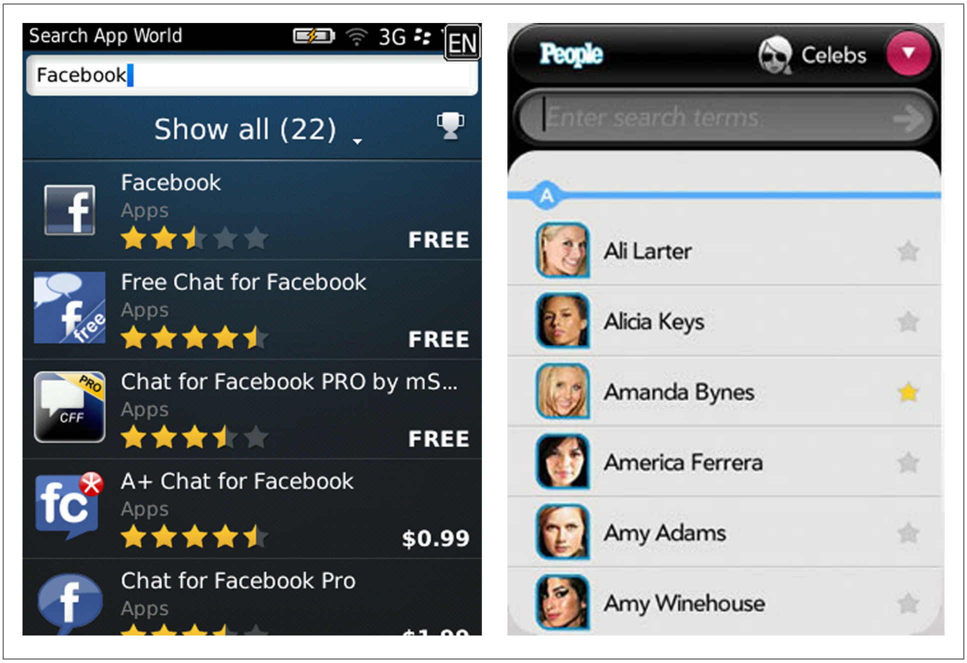
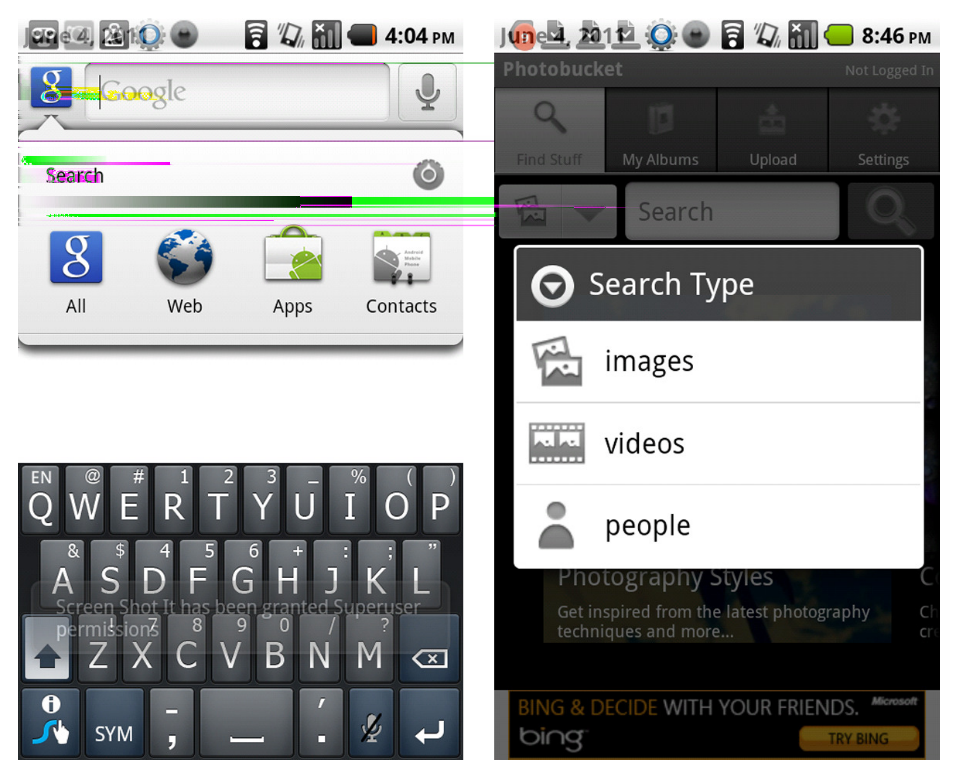


Figure 4-7. BlackBerry App World and People on WebOS

Works well for constrained data sets, like an address book or personal media library, but may be impractical for searching huge data sets.

Scoped Search

Sometimes it is easier (and faster) to get to the desired result by scoping the search criteria before performing the search. Google and Photobucket use different designs to the same end.



Screen Shot It has been granted Superuser permissions

Get inspired from the latest photography techniques and more...

Figure 4-8. Google and Photobucket

AllRecipes also lets you select criteria (or filters) before submitting the search. Dropbox defaults the initial scope to *All*, but you can switch it to *Files* or *Folders* before or after tapping the *search* button.

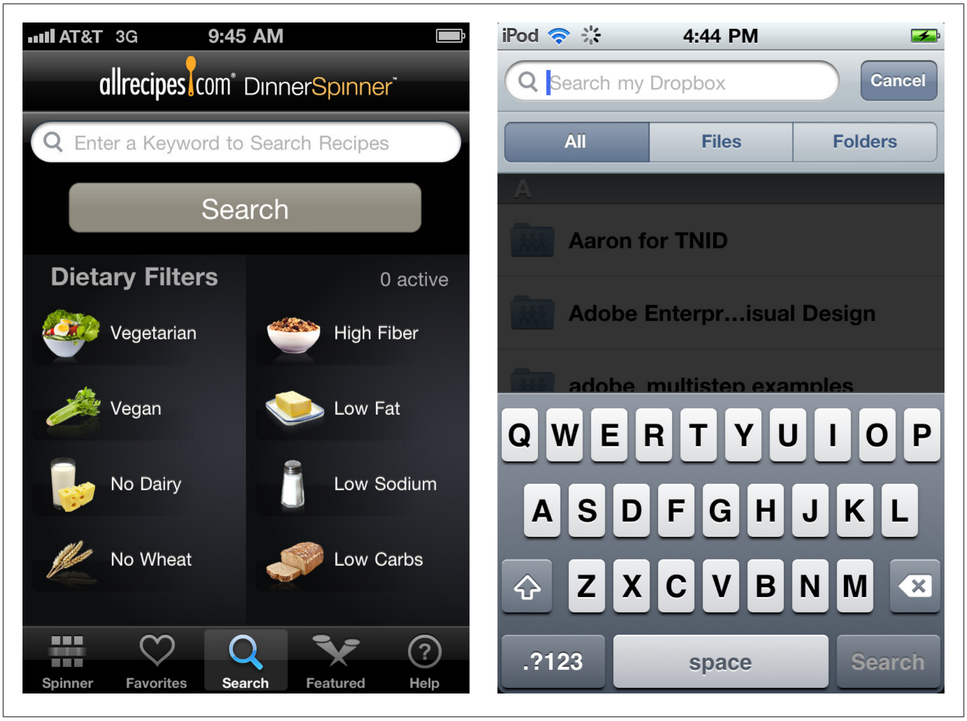


Figure 4-9. AllRecipes and DropBox

Offer reasonable scoping options based on the data set. Three to six scoping options are plenty; consider a search form for advanced searching capabilities.

Saved and Recent Searches

Successful mobile interfaces follow a basic usability maxim: respect the users' effort. Saved and recent searches do this by making it easy to select from previous searches, instead of retyping the same keywords or search criteria. eBay and Apple iOS both use Saved and Recent Searches to increase users' efficiency.

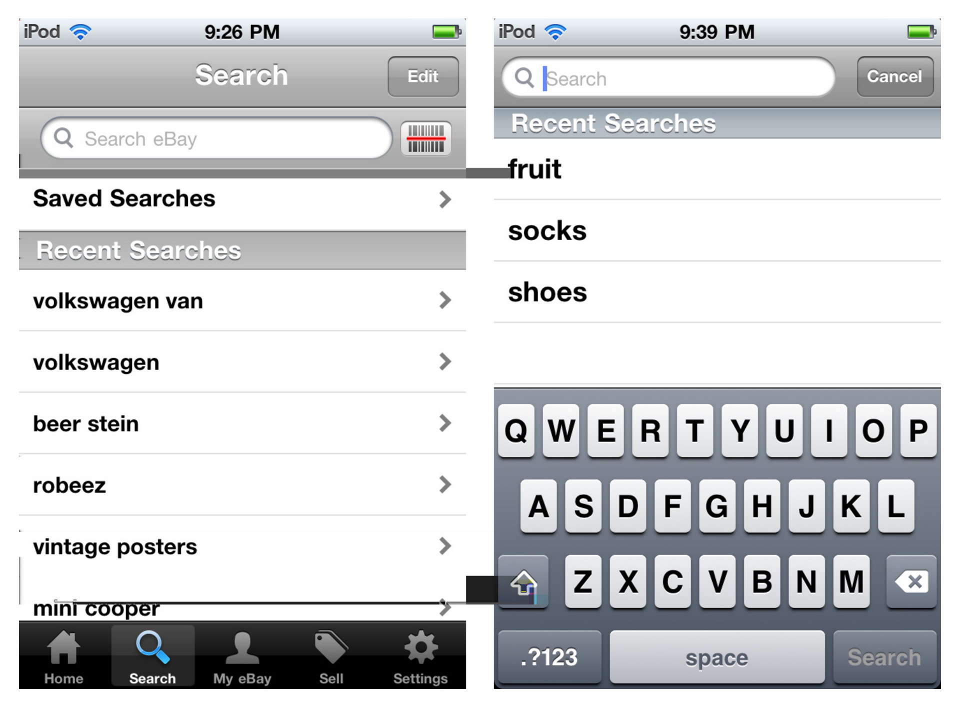
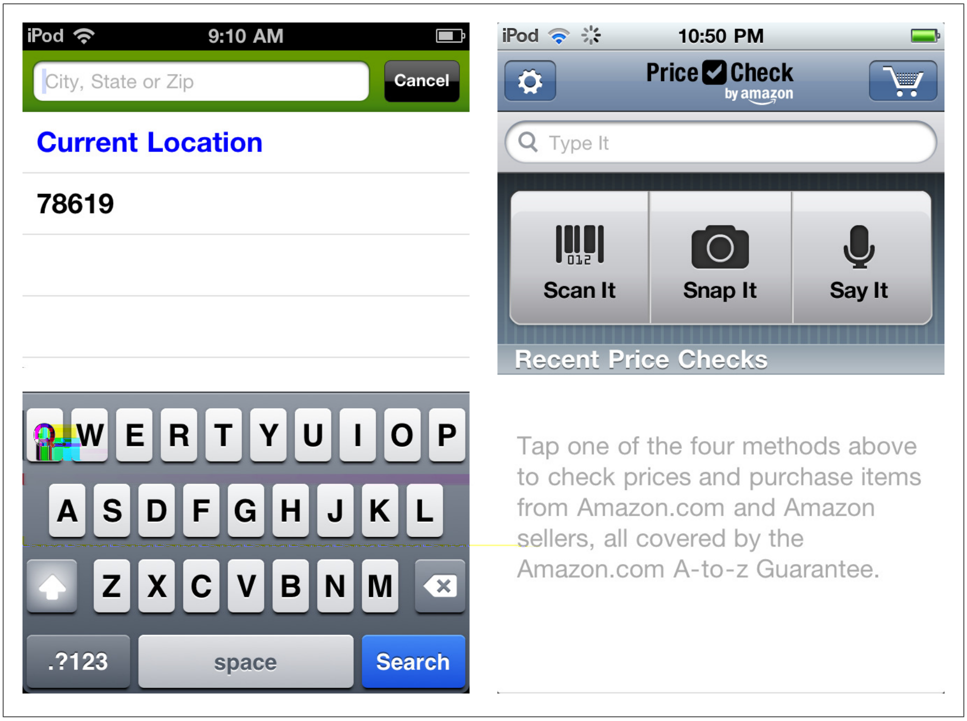


Figure 4-10. eBay and Walmart

Other options to respect the users' effort involve location-based searching options like Trulia, and bar code searching, like PriceCheck by Amazon.



Tap one of the four methods above to check prices and purchase items from Amazon.com and Amazon sellers, all covered by the Amazon.com A-to-z Guarantee.

Figure 4-11. Trulia and Amazon PriceCheck

Saved searches typically require additional steps for naming a search for referencelater, whereas recent searches are implicitly saved and surfaced. Consider which one will best serve your users' needs.

Search Form

This pattern is characterized by a separate form for entering multiple criteria, and an explicit search button. Kayak and Whole Foods use search forms to collect the necessary criteria for searching for flights and hotels. See more examples in Chapter 2.

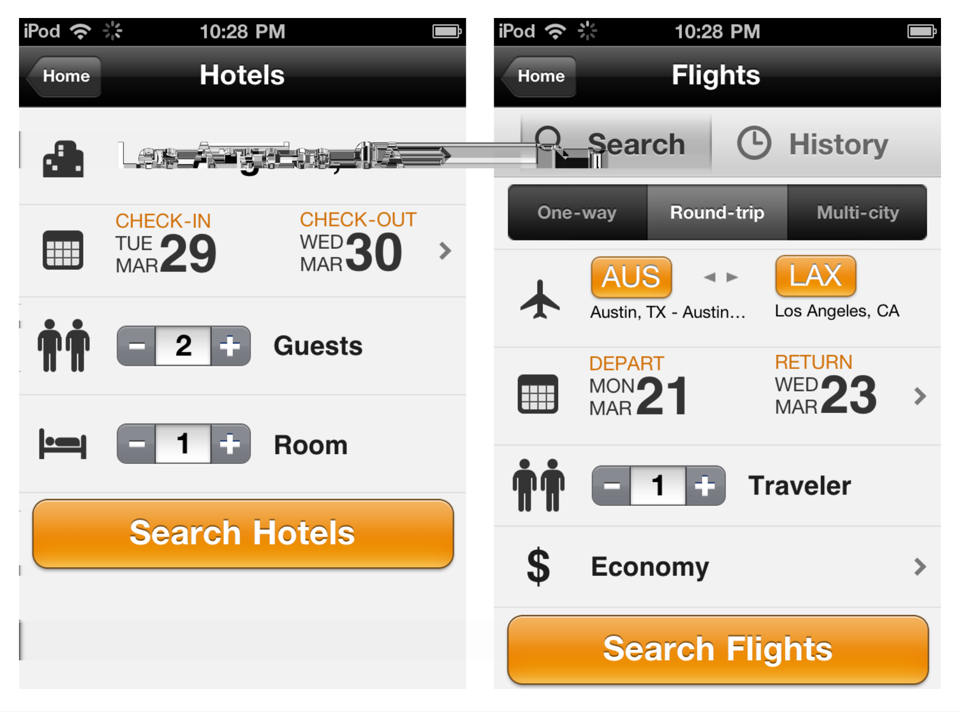


Figure 4-12. Kayak

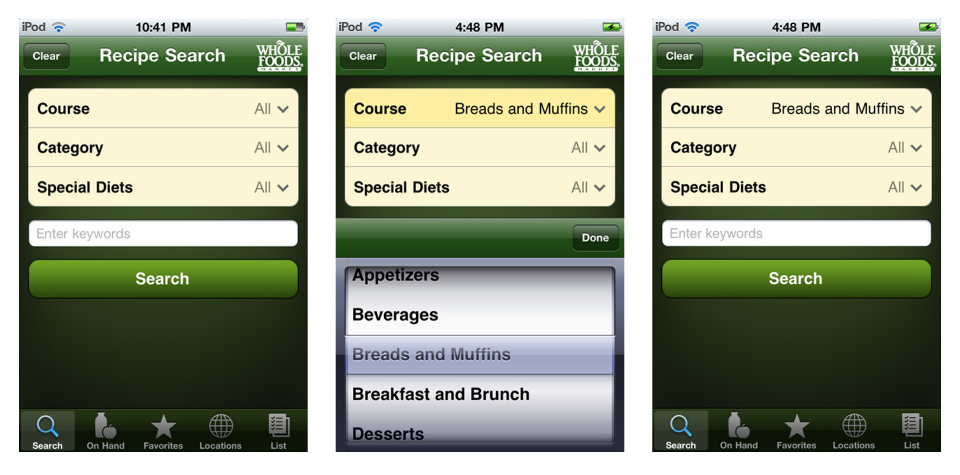
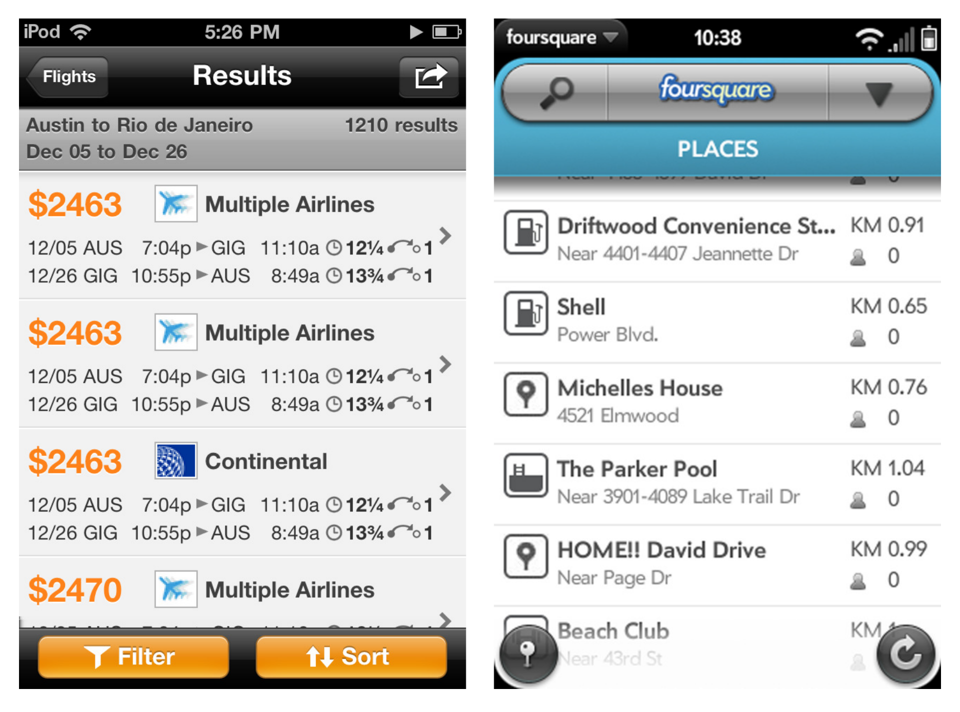


Figure 4-13. Whole Foods Recipe Search

Minimize the number of input fields. Implement OS-specific input controls properly. Follow form design best practices (alignment, labels, size).

Search Results/View Results

Once a search is performed, the results can be displayed in the same screen or on a dedicated results screen. Results may be displayed in a table or list, on a map or satellite, or as thumbnail images. Multiple view options can be used, depending on the type of results and user preferences.



Austin to Rio de Janeiro 1210 results
Dec 05 to Dec 26

$2463	Multiple Airlines						
12/05	AUS	7:04p	GIG	11:10a	12¼	1
12/26	GIG	10:55p	AUS	8:49a	13¾	1
$2463	Multiple Airlines						
12/05	AUS	7:04p	GIG	11:10a	12¼	1
12/26	GIG	10:55p	AUS	8:49a	13¾	1
$2463	Continental						
12/05	AUS	7:04p	GIG	11:10a	12¼	1
12/26	GIG	10:55p	AUS	8:49a	13¾	1
$2470	Multiple Airlines						

Driftwood Convenience St... Near 4401-4407 Jeannette Dr	KM 0.91 0
Shell Power Blvd.	KM 0.65 0
Michelles House 4521 Elmwood	KM 0.76 0
The Parker Pool Near 3901-4089 Lake Trail Dr	KM 1.04 0
HOME!! David Drive Near Page Dr	KM 0.99 0
Beach Club Near 43rd St	KM

Figure 4-14. Results in a table: Kayak and Foursquare

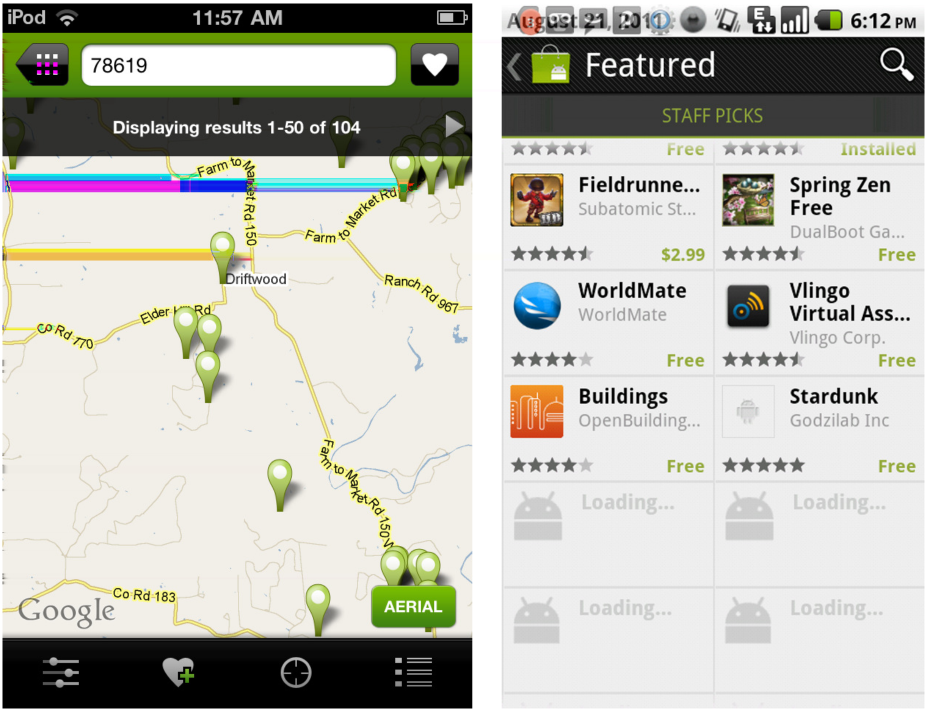
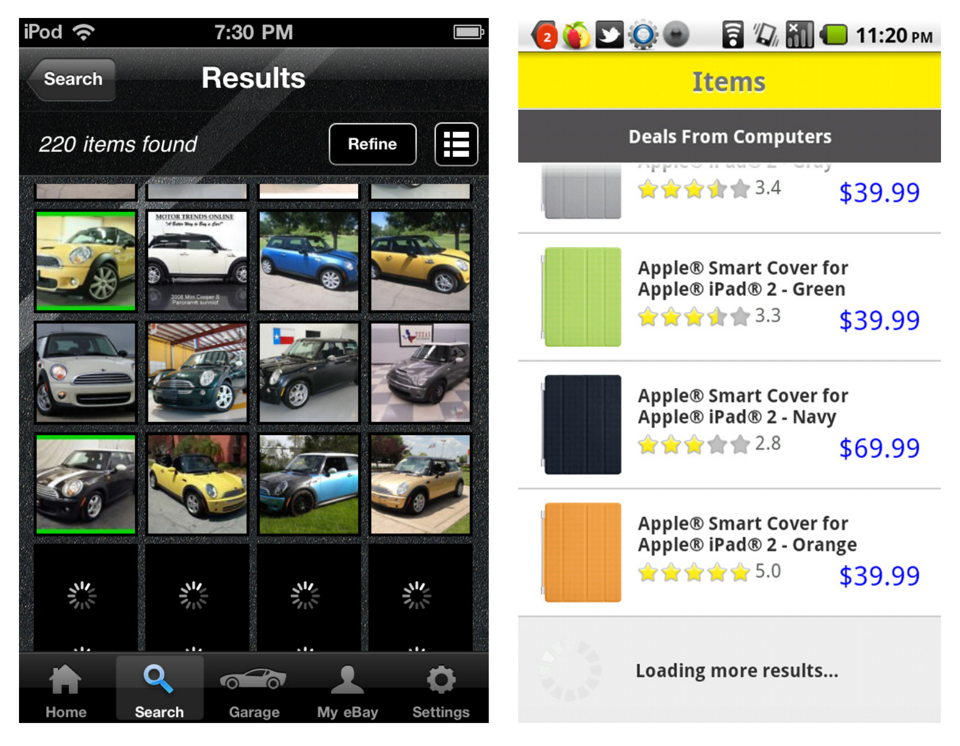


Figure 4-15. Results on a map and results as thumbnail images

Lazy loading is a common technique to use so that some results will be displayed while the rest are being loaded, see Ebay Motors and BestBuy. Many applications offer either a button to explicitly “view more results” or will automatically load more results when the screen is flicked.



3.4 $39.99

Apple® Smart Cover for Apple® iPad® 2 - Green
3.3 $39.99

Apple® Smart Cover for Apple® iPad® 2 - Navy
2.8 $69.99

Apple® Smart Cover for Apple® iPad® 2 - Orange
5.0 $39.99

Loading more results...

Figure 4-16. ebay Motors and Best Buy

Avoid paging tables, they break the natural interaction model of viewing information on a mobile device.

Label the results with the number returned. Use lazy loading instead of paging. Apply a reasonable default sort order.

Sort Patterns

It is important to choose a reasonable default sort for displaying search results. A little common sense plus user validation is the best way to choose the default sort order. To offer additional sorting functionality, choose an existing interface design pattern:

- onscreen sort
- sort order selector
- the sort form

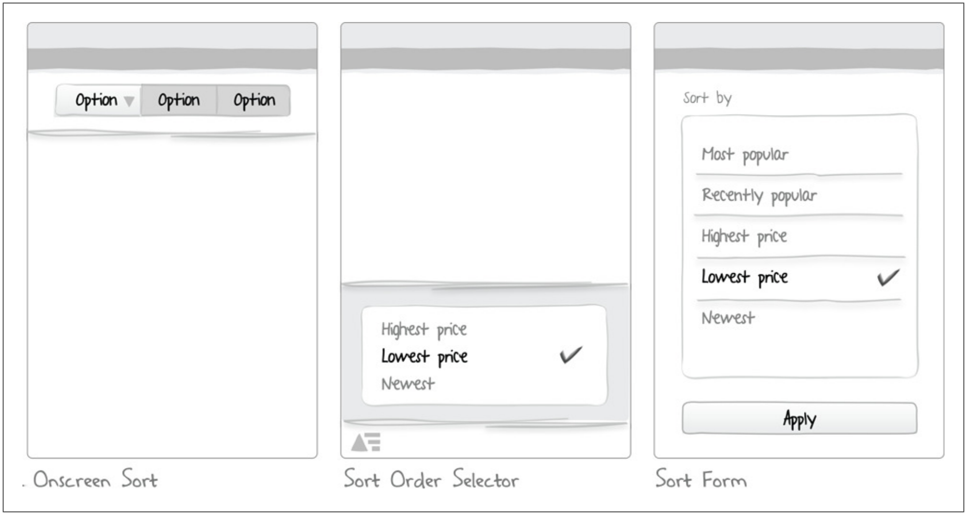
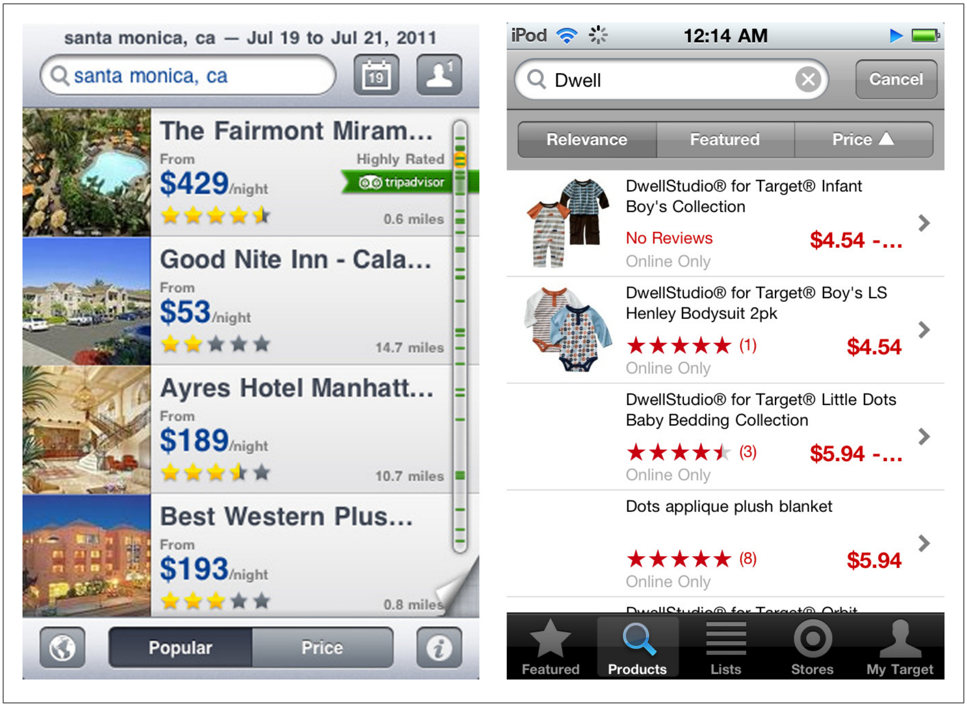


Figure 4-17. Sort patterns

Onscreen Sort

When there are only a few sort options, an onscreen sort can provide a simple one-tap solution. Placing the sort toggle at the top or bottom of the screen will depend on the other screen elements.

Target provides four sort options with a three-toggle button. For the price sort option, they offer two choices: sort by price ascending and sort by price descending.



santa monica, ca — Jul 19 to Jul 21, 2011

Search: santa monica, ca

The Fairmont Miram…
From $429/night
Highly Rated tripadvisor
0.6 miles

Good Nite Inn - Cala…
From $53/night
14.7 miles

Ayres Hotel Manhatt…
From $189/night
10.7 miles

Best Western Plus…
From $193/night
0.8 miles

Search: Dwell

DwellStudio® for Target® Infant Boy's Collection
No Reviews $4.54 -…
Online Only

DwellStudio® for Target® Boy's LS Henley Bodysuit 2pk
★★★★★ (1) $4.54
Online Only

DwellStudio® for Target® Little Dots Baby Bedding Collection
★★★★★ (3) $5.94 -…
Online Only

Dots applique plush blanket
★★★★★ (8) $5.94
Online Only

DwellStudio® for Target® Orbit

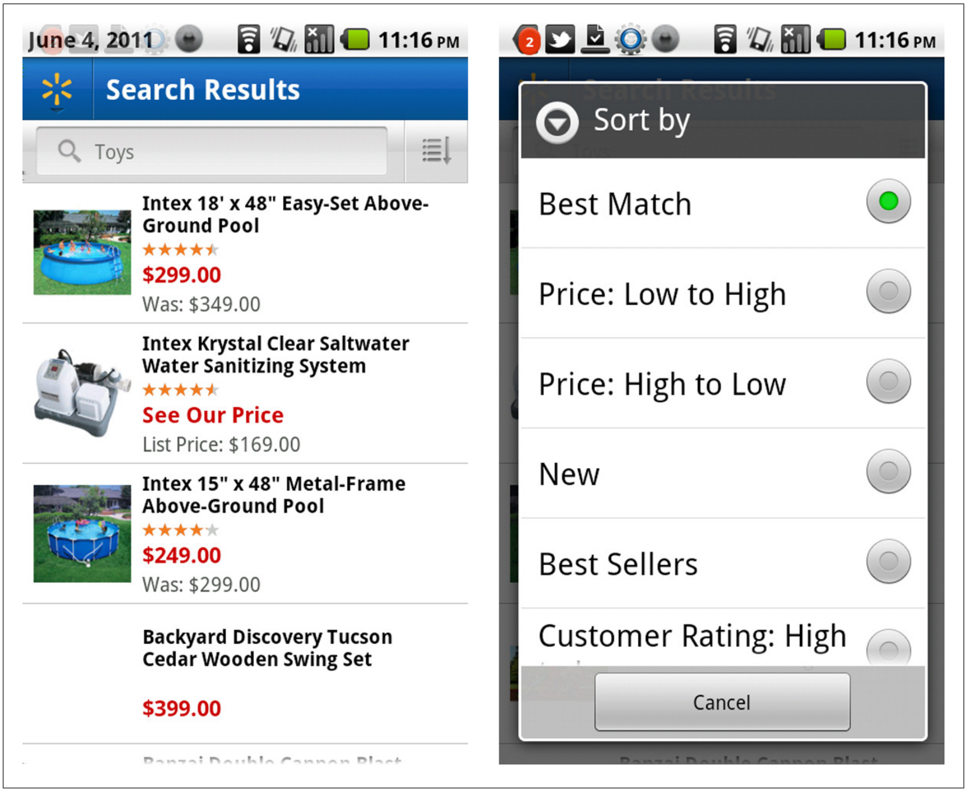
Figure 4-18. Expedia, sort toggle at the bottom; Target, sort toggle at the top

Clearly show which option is selected or "on." Consider the Sort Order Selector pattern if the option labels don't fit nicely in a toggle button bar.

Sort Order Selector

The selector pattern is a good alternative to the onscreen sort. There are a number of different UI controls that can be used for selection, but consider the design guidelines for the OS you are designing for (for example, the menu is common for Android app, and the picker and actionsheet are common in iOS apps).

The option titles can be longer (more explicit), and more options can be displayed. Walmart places the sort button in proximity with the search field, whereas Realtor.com puts it down with the other view options and actions



Intex 18' x 48" Easy-Set Above-Ground Pool
$299.00
Was: $349.00

Intex Krystal Clear Saltwater Water Sanitizing System
See Our Price
List Price: $169.00

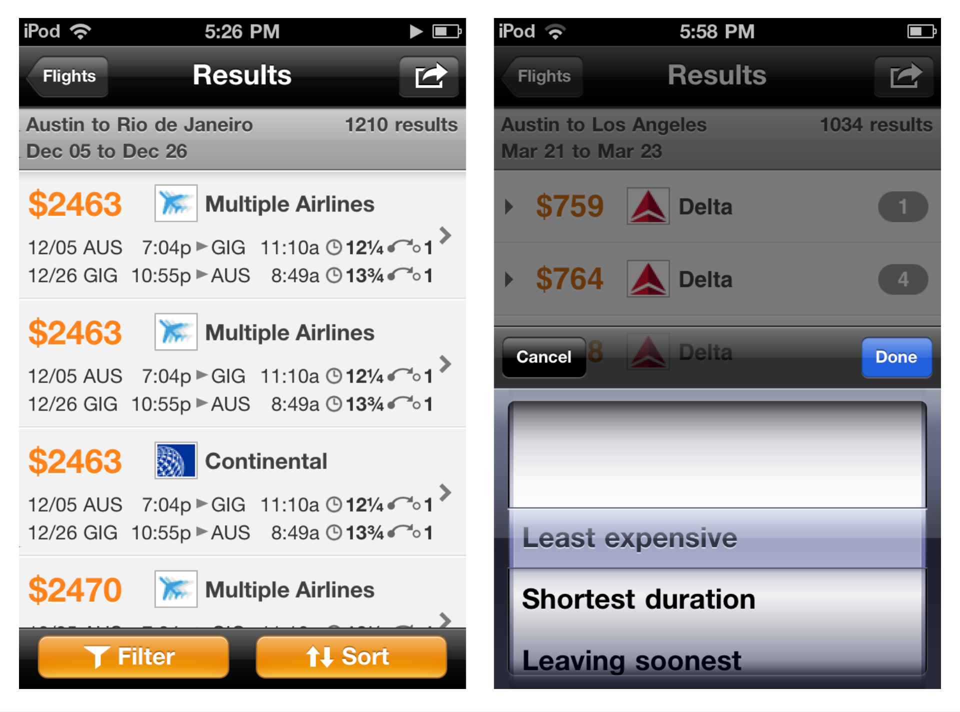
Intex 15" x 48" Metal-Frame Above-Ground Pool
$249.00
Was: $299.00

Backyard Discovery Tucson Cedar Wooden Swing Set

$399.00

Banzai Double Cannon Blast

Figure 4-19. Walmart



Austin to Rio de Janeiro 1210 results
Dec 05 to Dec 26

$2463 Multiple Airlines
12/05 AUS 7:04p ► GIG 11:10a 12¼ 1
12/26 GIG 10:55p ► AUS 8:49a 13¾ 1

$2463 Multiple Airlines
12/05 AUS 7:04p ► GIG 11:10a 12¼ 1
12/26 GIG 10:55p ► AUS 8:49a 13¾ 1

$2463 Continental
12/05 AUS 7:04p ► GIG 11:10a 12¼ 1
12/26 GIG 10:55p ► AUS 8:49a 13¾ 1

$2470 Multiple Airlines

Austin to Los Angeles 1034 results
Mar 21 to Mar 23

$759 Delta 1

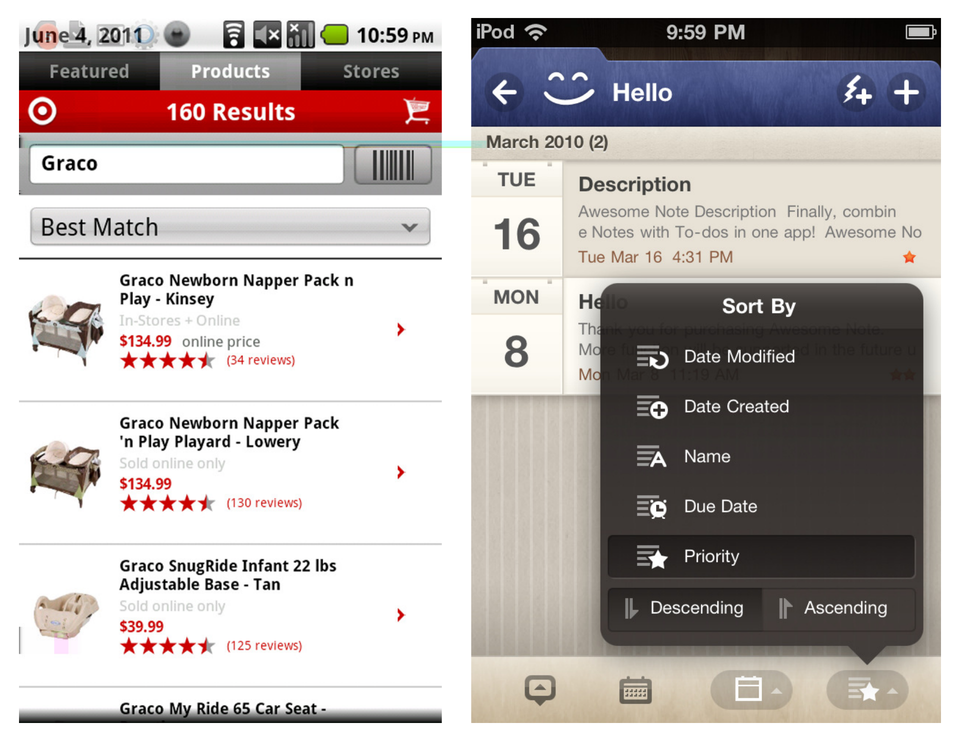
$764 Delta 4

Delta

Least expensive
Shortest duration
Leaving soonest

Figure 4-20. Kayak

OS neutral solutions include a simple combobox, like Target, or an overlay menu, like Awesome Note.



Graco

Graco Newborn Napper Pack n Play - Kinsey
In-Stores + Online
$134.99 online price
★★★★★ (34 reviews)

Graco Newborn Napper Pack 'n Play Playard - Lowery
Sold online only
$134.99
★★★★★ (130 reviews)

Graco SnugRide Infant 22 lbs Adjustable Base - Tan
Sold online only
$39.99
★★★★★ (125 reviews)

Graco My Ride 65 Car Seat -

March 2010 (2)

TUE 16
Description
Awesome Note Description Finally, combine Notes with To-dos in one app! Awesome No
Tue Mar 16 4:31 PM

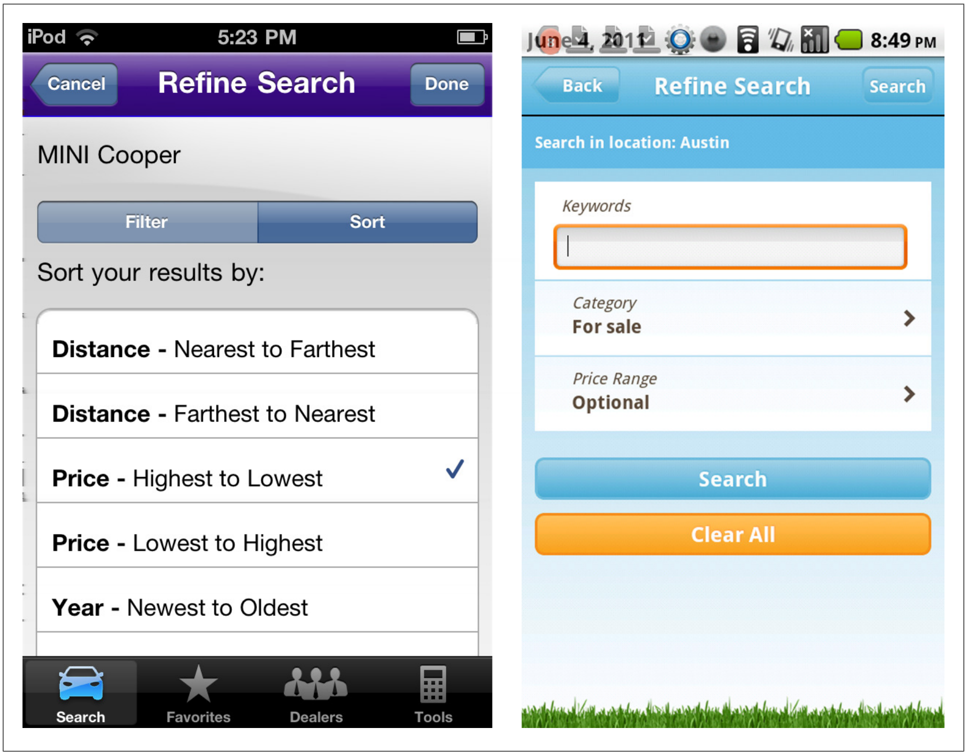
MON 8
Hello
Thank you for purchasing Awesome Note. More fu... ...d in the future u
Mon Mar 8 11:19 AM

Figure 4-21. Target and Awesome Note

Follow OS design conventions for choosing the selector control, or choose an OS neutral interface control. Clearly show which sort option is applied.

Sort Form

Some applications have consolidated the sort and filter options into one screen, typically titled “Refine.” This is the most effort intensive sort pattern, requiring the user to open the form, select an option, and then apply the selection (by tapping “done” or “apply”).



MINI Cooper

Sort your results by:

- Distance - Nearest to Farthest
- Distance - Farthest to Nearest
- Price - Highest to Lowest ✓
- Price - Lowest to Highest
- Year - Newest to Oldest

Search in location: Austin

Keywords

Category: For sale

Price Range: Optional

Figure 4-22. Cars.com and eBay classifieds

Consider the more efficient sort option toggle or sort order selector patterns before choosing this pattern.

Filter

Large sets of data can require additional filtering, also called *refining*. Filtering relies on the user selecting criteria by which to refine the set of search results or a large set of objects. Common filtering patterns include:

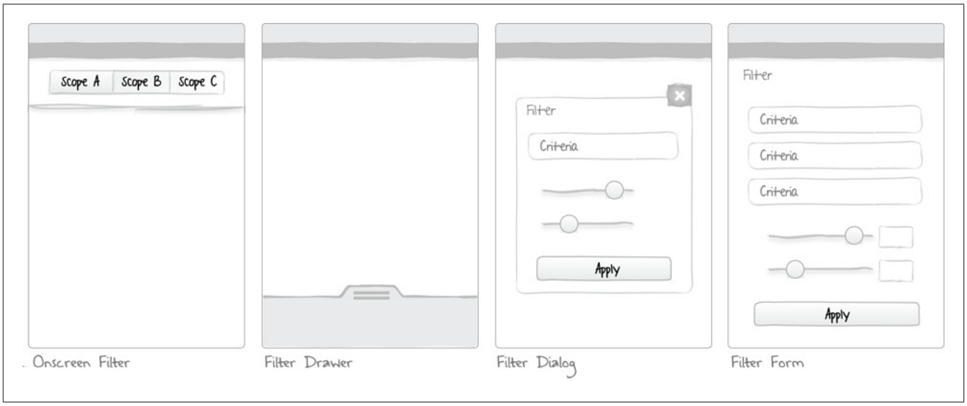
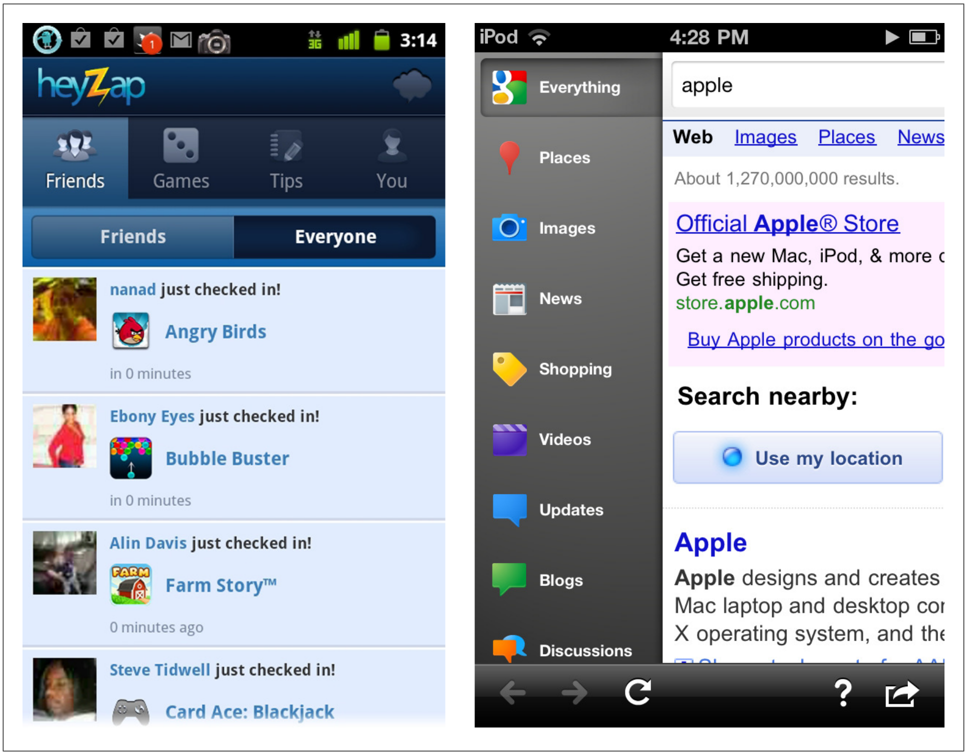


Figure 4-23. Filter patterns

Also see the earlier search pattern, Scoped Search, for an optional pre-filtering technique.

Onscreen Filter

Similar to the onscreen sort, the onscreen filter is displayed with the results or list of objects. With one tap, the filter is applied. HeyZap uses the standard toggle button bar, whereas Google uses vertical tabs.



nanad just checked in!
Angry Birds
in 0 minutes

Ebony Eyes just checked in!
Bubble Buster
in 0 minutes

Alin Davis just checked in!
Farm Story™
0 minutes ago

Steve Tidwell just checked in!
Card Ace: Blackjack

About 1,270,000,000 results.

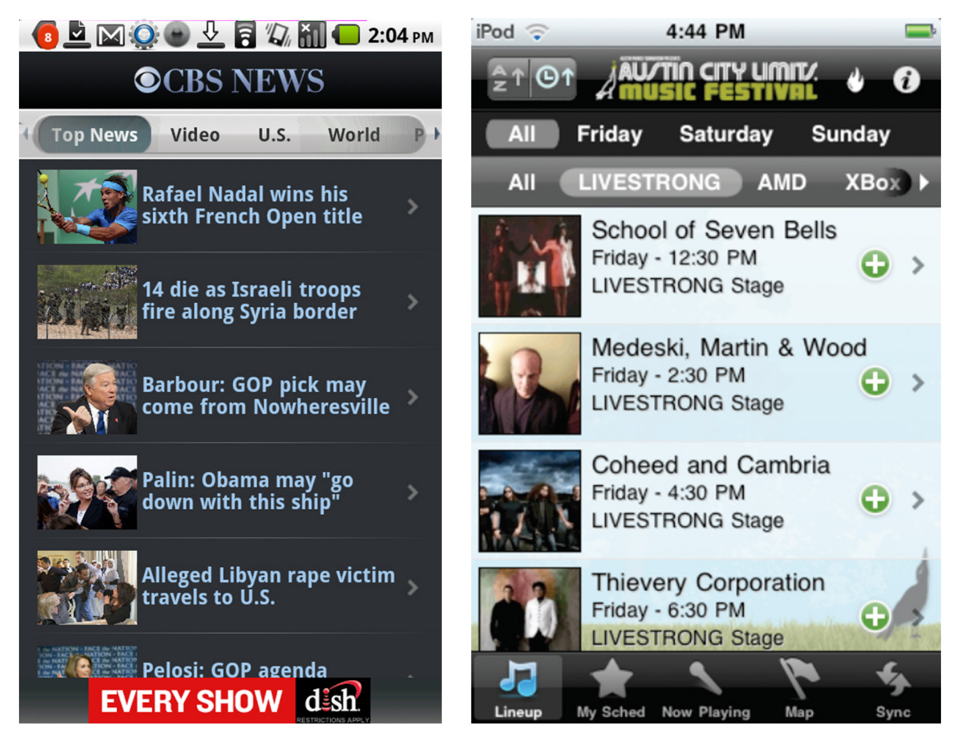
Official Apple® Store
Get a new Mac, iPod, & more c
Get free shipping.
store.apple.com
Buy Apple products on the go

Apple
Apple designs and creates
Mac laptop and desktop cor
X operating system, and the

Figure 4-24. HeyZap and Google

CBS News and the ACL Festival app use a scrolling filter bar as a way to let users quickly hone in on certain types of articles and bands, respectively.

Don't use this filter pattern for primary navigation, but instead use it to group and filter content. See Chapter 9, Metaphor Mismatch.



Rafael Nadal wins his sixth French Open title

14 die as Israeli troops fire along Syria border

Barbour: GOP pick may come from Nowheresville

Palin: Obama may "go down with this ship"

Alleged Libyan rape victim travels to U.S.

Pelosi: GOP agenda

School of Seven Bells
Friday - 12:30 PM
LIVESTRONG Stage

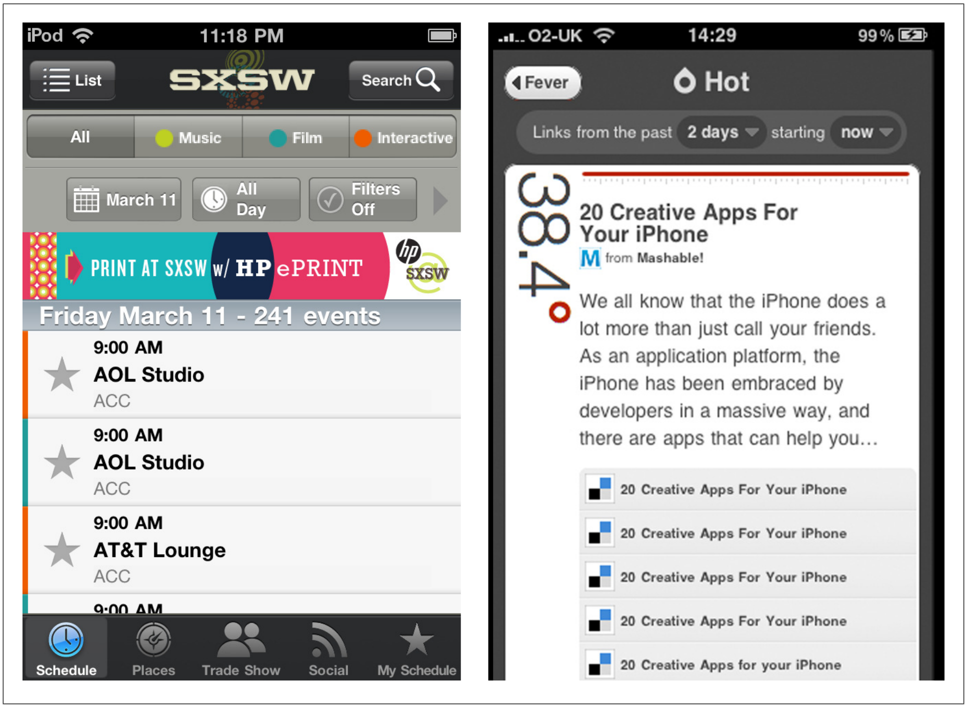
Medeski, Martin & Wood
Friday - 2:30 PM
LIVESTRONG Stage

Coheed and Cambria
Friday - 4:30 PM
LIVESTRONG Stage

Thievery Corporation
Friday - 6:30 PM
LIVESTRONG Stage

Figure 4-25. CBS News and Austin City Limits Music Festival

SXSW offers a filter button bar combined with a second row of filtering options. Feed a Fever news reader uses a super simple stylized set of comboboxes for filtering news feeds.



Friday March 11 - 241 events

9:00 AM
AOL Studio
ACC

9:00 AM
AOL Studio
ACC

9:00 AM
AT&T Lounge
ACC

9:00 AM

Links from the past 2 days starting now

20 Creative Apps For Your iPhone

from Mashable!

We all know that the iPhone does a lot more than just call your friends. As an application platform, the iPhone has been embraced by developers in a massive way, and there are apps that can help you…

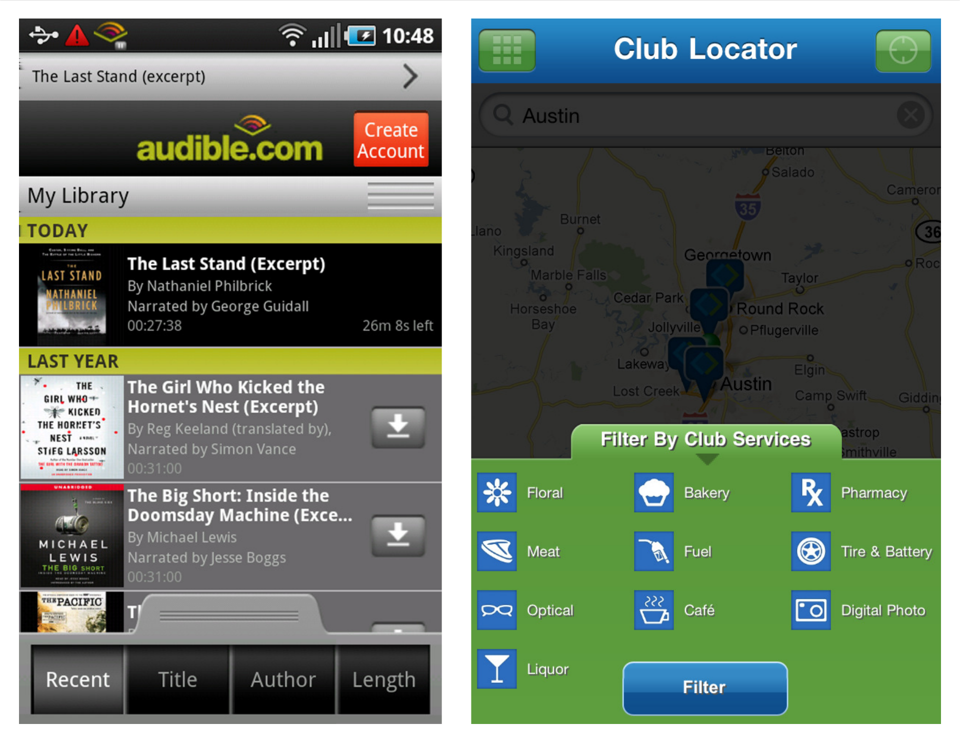
- 20 Creative Apps For Your iPhone
- 20 Creative Apps For Your iPhone
- 20 Creative Apps For Your iPhone
- 20 Creative Apps For Your iPhone
- 20 Creative Apps for your iPhone

Figure 4-26. SXSW and Feed a Fever

Filter options should be clearly worded and easy to understand. Show the filters that are applied, or “on.”

Filter Drawer

Almost as efficient as the onscreen filter, a drawer can be used to reveal filter options. Flicking or tapping a handle will open the drawer. Audible's drawer reveals a simple filter toggle bar, whereas Sam's offers a host of filter options that can be applied to the map of club locations. A better design for Sam's would be to leave the map visible and allow for dynamic filtering instead of the explicit "filter" button.



The Last Stand (Excerpt)
By Nathaniel Philbrick
Narrated by George Guidall
00:27:38 26m 8s left

The Girl Who Kicked the Hornet's Nest (Excerpt)
By Reg Keeland (translated by),
Narrated by Simon Vance
00:31:00

The Big Short: Inside the Doomsday Machine (Exce...
By Michael Lewis
Narrated by Jesse Boggs
00:31:00

Figure 4-27. Audible and Sam's Club

Filter Dialog

Like a pop-up on in a web app, the filter dialog is modal in nature. It requires the user to select a filter option, or cancel the action. TripAdvisor on iOS has a custom filter dialog, whereas USPS Mobile on Android relies on the default selector control.

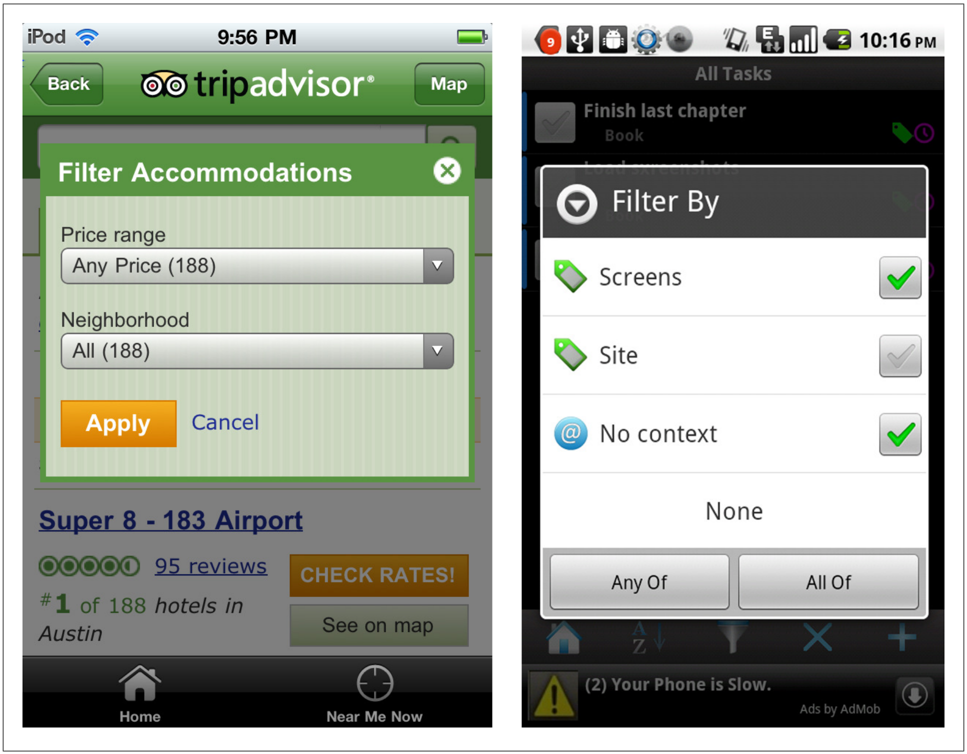


Figure 4-28. TripIt and DueTodayLite

While the Filter Dialog may get the job done, the first two patterns provide more freedom for users to experiment with and apply filters directly in context.

Keep the options list short, avoid scrolling. Consider a Filter Form for lengthier or multi-select filter options. See Chapter 6, Charts with Filters, for examples on filtering chart data.

Filter Form

Large data sets can benefit from more advanced filter/refinement options. For example, Kayak uses a form to filter hotels based on price, brand, and stars. Zappos uses a similar approach, using the iOS standard clear/done buttons in the title bar.

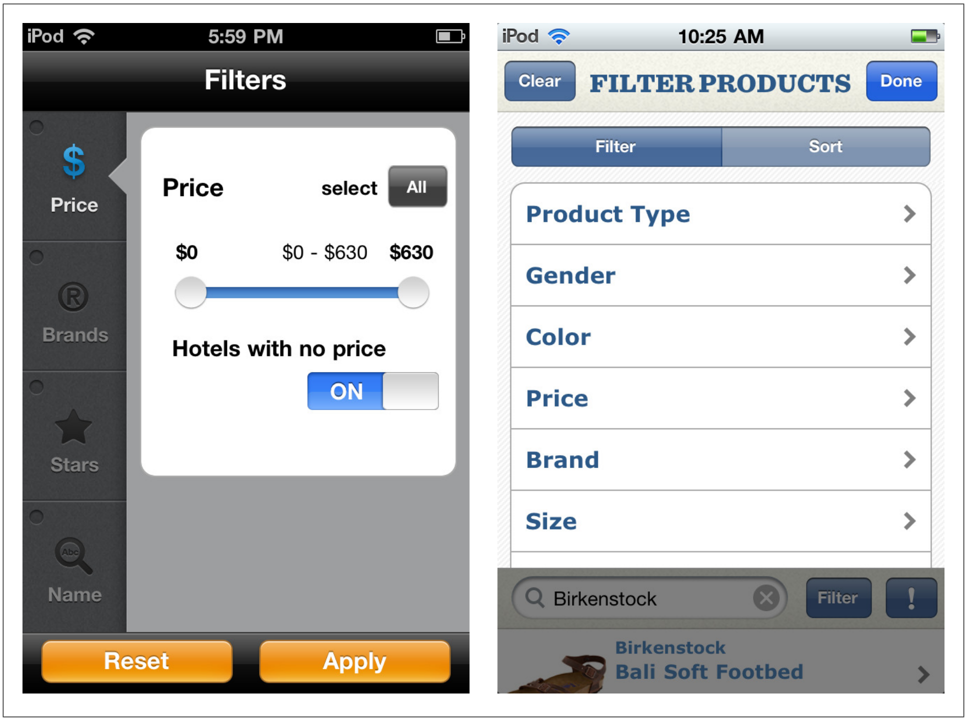


Figure 4-29. Kayak and Zappos

Freetime uses custom controls in their filter form. First you pick the filter category, then choose the filter criteria, then apply the filter to the calendar.

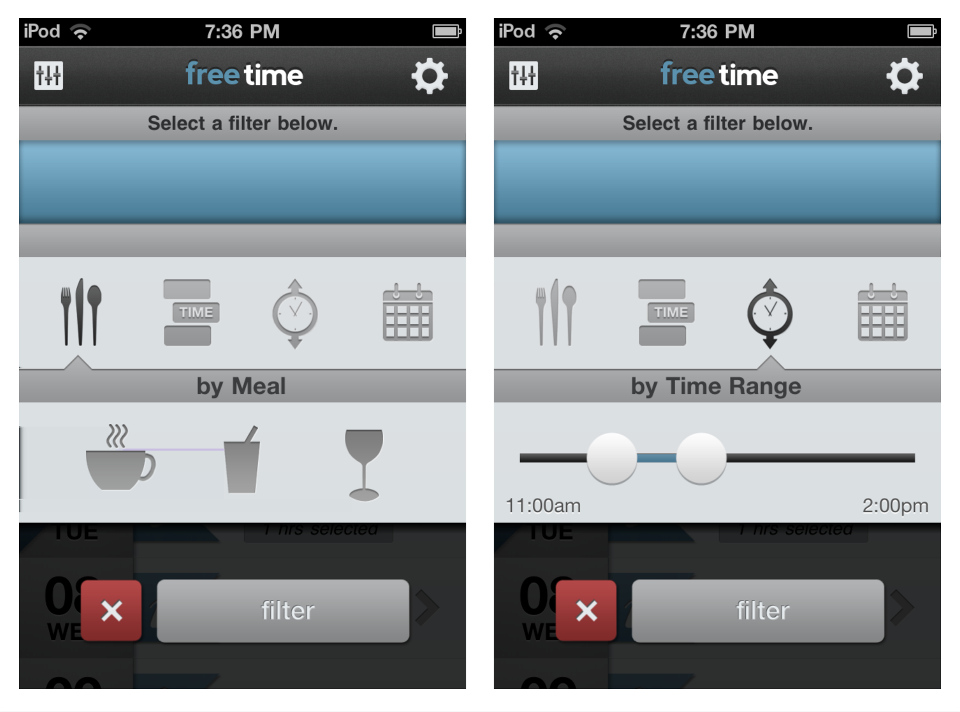
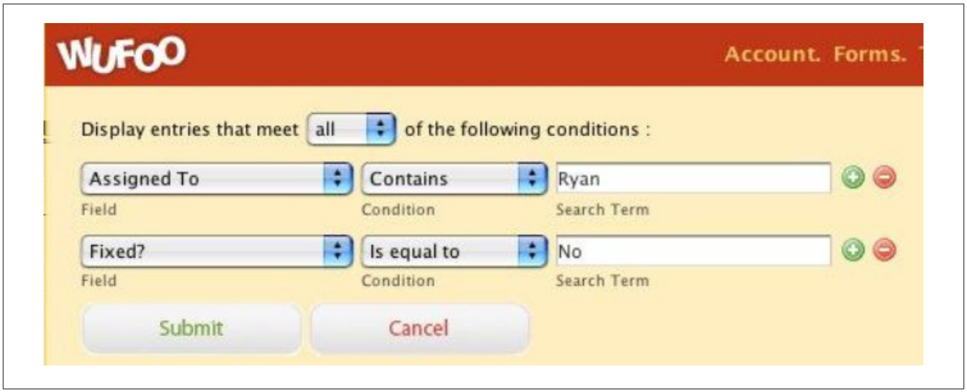


Figure 4-30. Freetime

Conditional filters, also called *predicate editors* or *expression builders*, are an advanced filtering feature typically found in reporting tools. Here's the standard layout used on the Web and desktop.

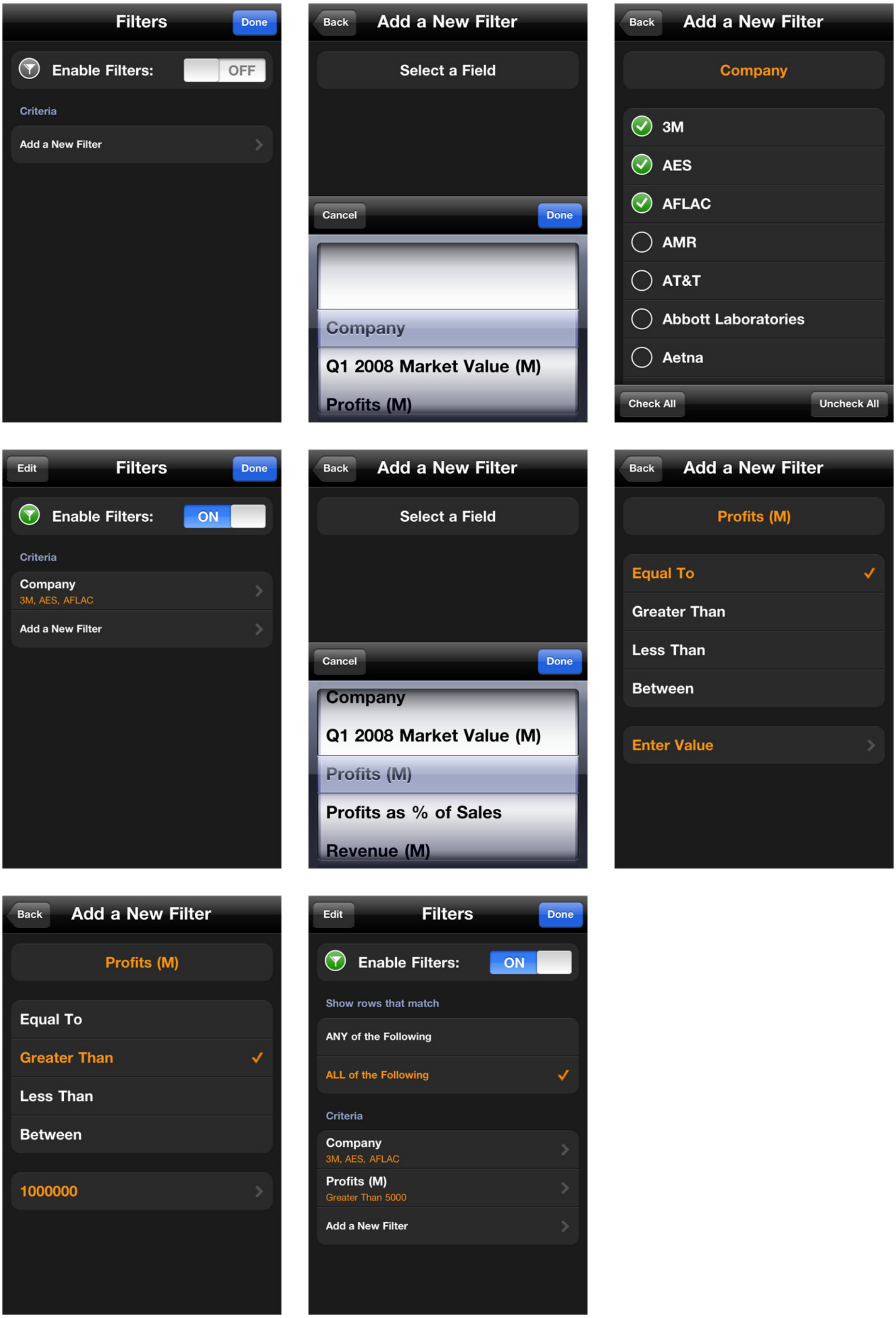


Display entries that meet all of the following conditions :

Assigned To	Contains	Ryan
Field	Condition	Search Term
Fixed?	Is equal to	No
Field	Condition	Search Term

Figure 4-31. Wufoo expression builder

Creating a conditional filtering a mobile application can be challenging because of the form factor, but Roambi has successfully accomplished it.



Enable Filters: OFF

Criteria

Add a New Filter

Company
Q1 2008 Market Value (M)
Profits (M)

Company

- ✓ 3M
- ✓ AES
- ✓ AFLAC
- ○ AMR
- ○ AT&T
- ○ Abbott Laboratories
- ○ Aetna

Enable Filters: ON

Criteria

Company
3M, AES, AFLAC

Add a New Filter

Company
Q1 2008 Market Value (M)
Profits (M)
Profits as % of Sales
Revenue (M)

Profits (M)

- Equal To ✓
- Greater Than
- Less Than
- Between

Enter Value

Profits (M)

- Equal To
- Greater Than ✓
- Less Than
- Between

1000000

Enable Filters: ON

Show rows that match

ANY of the Following
ALL of the Following ✓

Criteria

Company
3M, AES, AFLAC

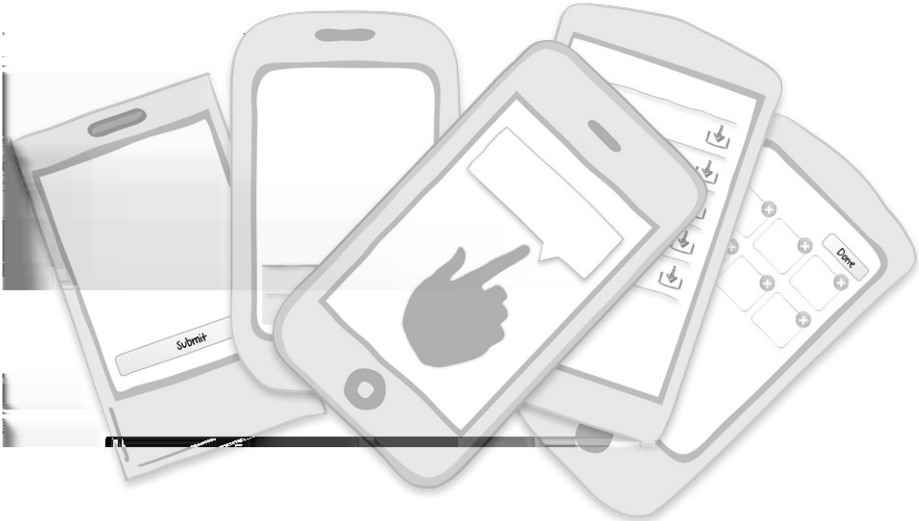
Profits (M)
Greater Than 5000

Add a New Filter

Figure 4-32. Roambi's conditional filter

Don’t over-design the filters; a simple onscreen filter or drawer will usually suffice. If a Filter Form is necessary, follow form design best practices.

CHAPTER 5
Tools



Patterns: Toolbar, Overlay Menu, Contextual Tools, Inline Actions, Call to Action Button, Bulk Actions

In *Designing Web Interfaces*(*http://shop.oreilly.com/product/9780596516253.do*) (O'Reilly), Bill Scott and I wrote of six principles for designing rich interactions on the Web. Two of these core principles, Make It Direct and Keep It Lightweight, can also help drive the design of tools and actions in mobile interfaces.

Make It Direct suggests providing input where there is output; the interface should respond directly to the users' interaction. A good example on the Web is Flickr's inline editing.

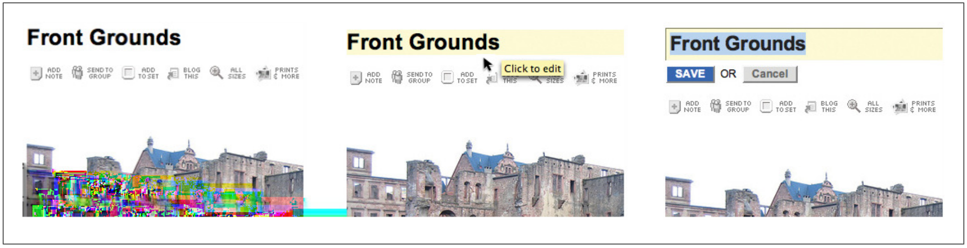
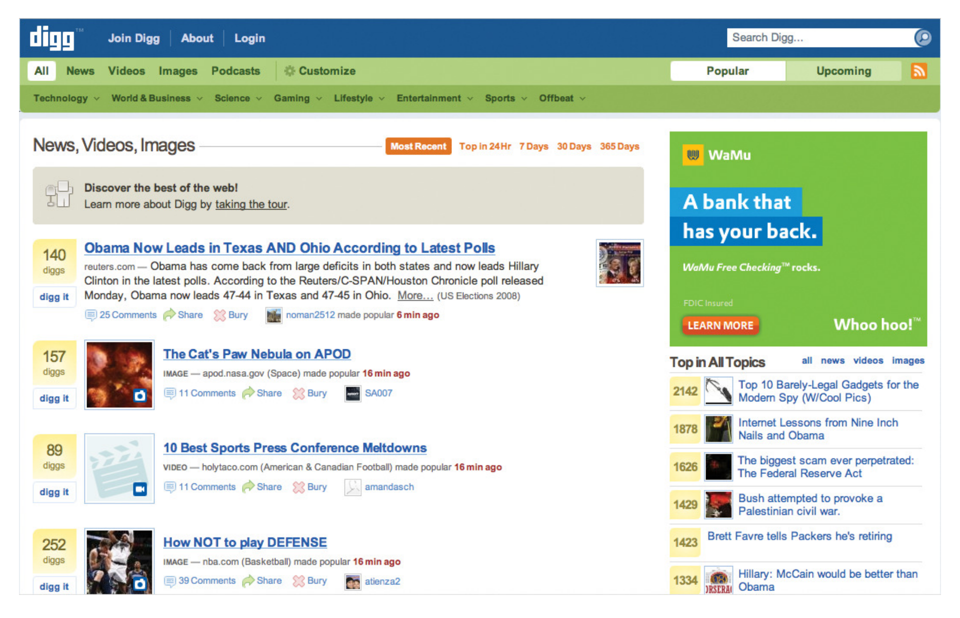


Figure 5-1. Inline edit on Flickr

Keep It Lightweight refers to keeping the interaction as lightweight as possible. An early example of this principle in action on the Web was Digg. The one-step process to Digg an article had a huge impact on the success of the site.


digg™ Join Digg | About | Login Search Digg...

All News Videos Images Podcasts Customize Popular Upcoming

Technology World & Business Science Gaming Lifestyle Entertainment Sports Offbeat

News, Videos, Images Most Recent Top in 24Hr 7 Days 30 Days 365 Days

Discover the best of the web!
Learn more about Digg by taking the tour.

140 diggs digg it — **Obama Now Leads in Texas AND Ohio According to Latest Polls**
reuters.com — Obama has come back from large deficits in both states and now leads Hillary Clinton in the latest polls. According to the Reuters/C-SPAN/Houston Chronicle poll released Monday, Obama now leads 47-44 in Texas and 47-45 in Ohio. More... (US Elections 2008)
25 Comments Share Bury noman2512 made popular 6 min ago

157 diggs digg it — **The Cat's Paw Nebula on APOD**
IMAGE — apod.nasa.gov (Space) made popular 16 min ago
11 Comments Share Bury SA007

89 diggs digg it — **10 Best Sports Press Conference Meltdowns**
VIDEO — holytaco.com (American & Canadian Football) made popular 16 min ago
11 Comments Share Bury amandasch

252 diggs digg it — **How NOT to play DEFENSE**
IMAGE — nba.com (Basketball) made popular 16 min ago
39 Comments Share Bury atienza2

WaMu
A bank that has your back.
WaMu Free Checking™ rocks.
FDIC Insured
LEARN MORE Whoo hoo!™

Top in All Topics all news videos images

2142	Top 10 Barely-Legal Gadgets for the Modern Spy (W/Cool Pics)
1878	Internet Lessons from Nine Inch Nails and Obama
1626	The biggest scam ever perpetrated: The Federal Reserve Act
1429	Bush attempted to provoke a Palestinian civil war.
1423	Brett Favre tells Packers he's retiring
1334	Hillary: McCain would be better than Obama

Figure 5-2. Digg's lightweight "Digg It" button

I've been thinking about both principles quite a bit as I follow Josh Clark's *Buttons are a Hack* campaign. He writes:

> "**Buttons are a hack.** As in the real world, they're often necessary, but they work at a distance—secondary tools to work on primary objects. A light switch here turns on a lightbulb there. These indirect interactions must be learned; they're not contextually obvious. The revolution that touchscreen devices are working is that they allow us, more and more, to use primary content as a control, to create the illusion of direct interaction.
>
> I don't mean to suggest that we throw out all of our familiar buttons entirely. Light switches shall remain necessary, after all, and so shall buttons, especially where it's nec-

> essary to trigger abstract actions ("share via Twitter," for example). But it's important to recognize those devices for what they are: necessary hacks for moments when direct interaction isn't possible. Touchscreen interfaces allow that direct interaction in many more contexts. As new solutions arise, we should be open to putting our time-tested workarounds aside. When designing an interaction for touch, always ask: do I really need another button or control for this?"

Take for example Photoshop Express. This mobile app uses the old desktop and web conventions for cropping, straightening, rotating, and flipping an image.

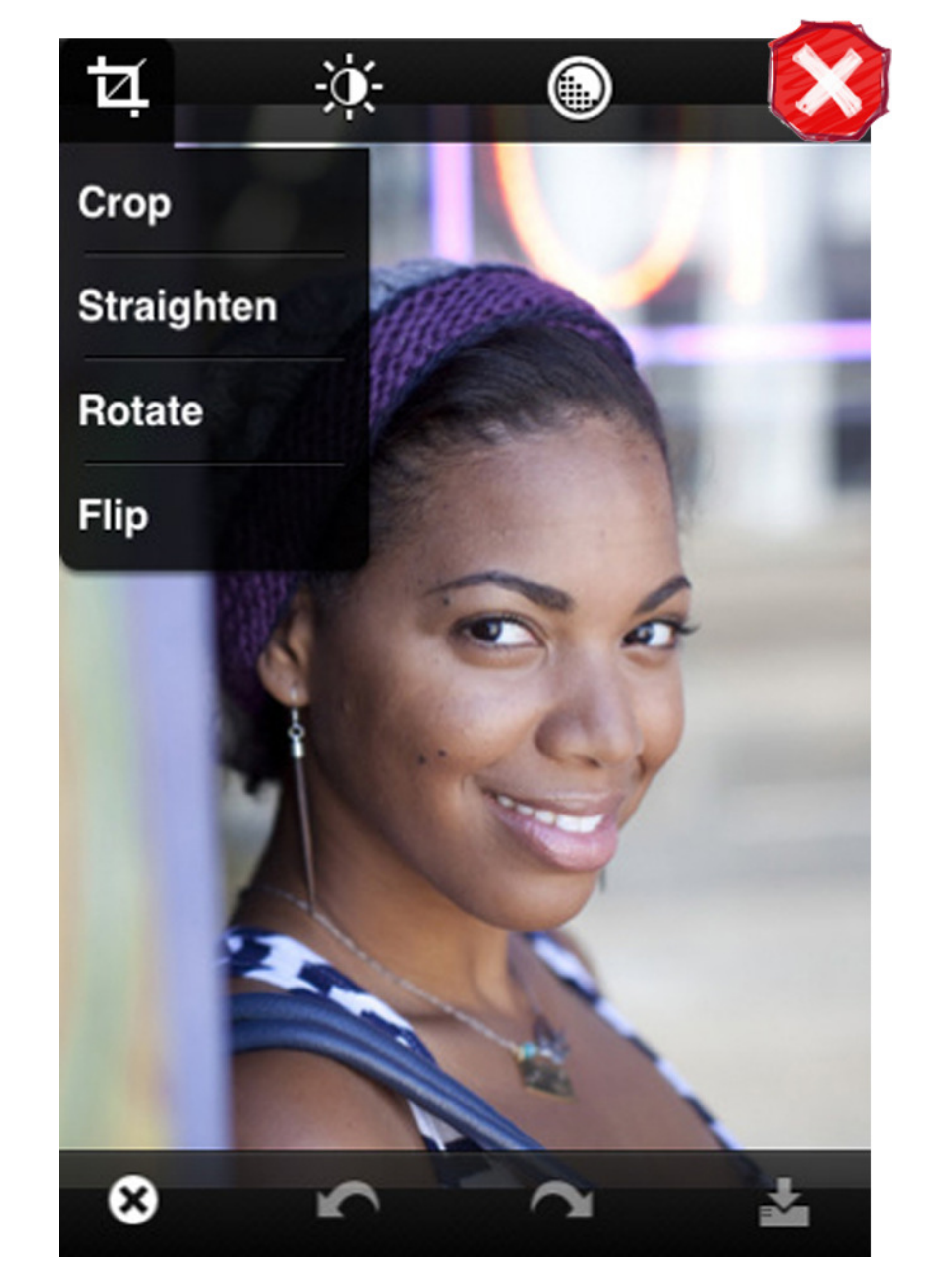


Figure 5-3. Photoshop Express

Tap’n’Scrap instead allows for direct interaction with the image. I can pinch zoom to enlarge, drop on a frame to crop, and drag to rotate or straighten. I can imagine using the flick gesture to flip the image, although they don’t have that implemented.

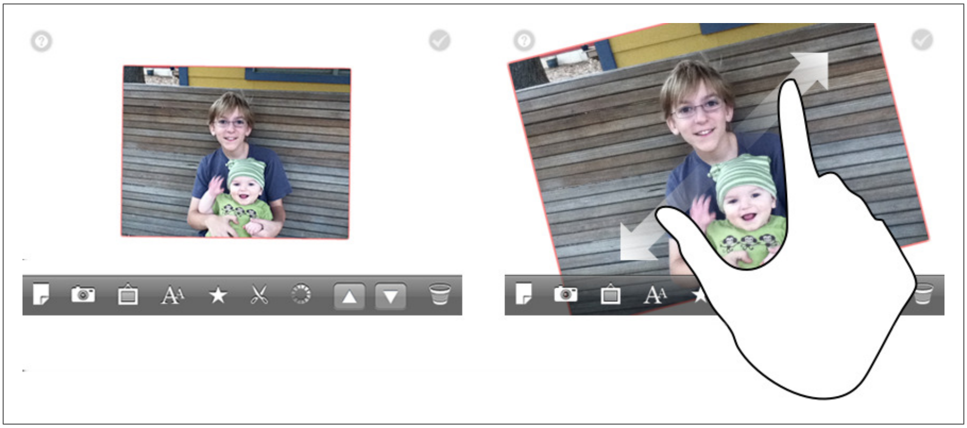


Figure 5-4. *Tap’n’Scrap provides direct manipulation of the image*

If a button or control is truly necessary in your mobile app, consider these patterns:

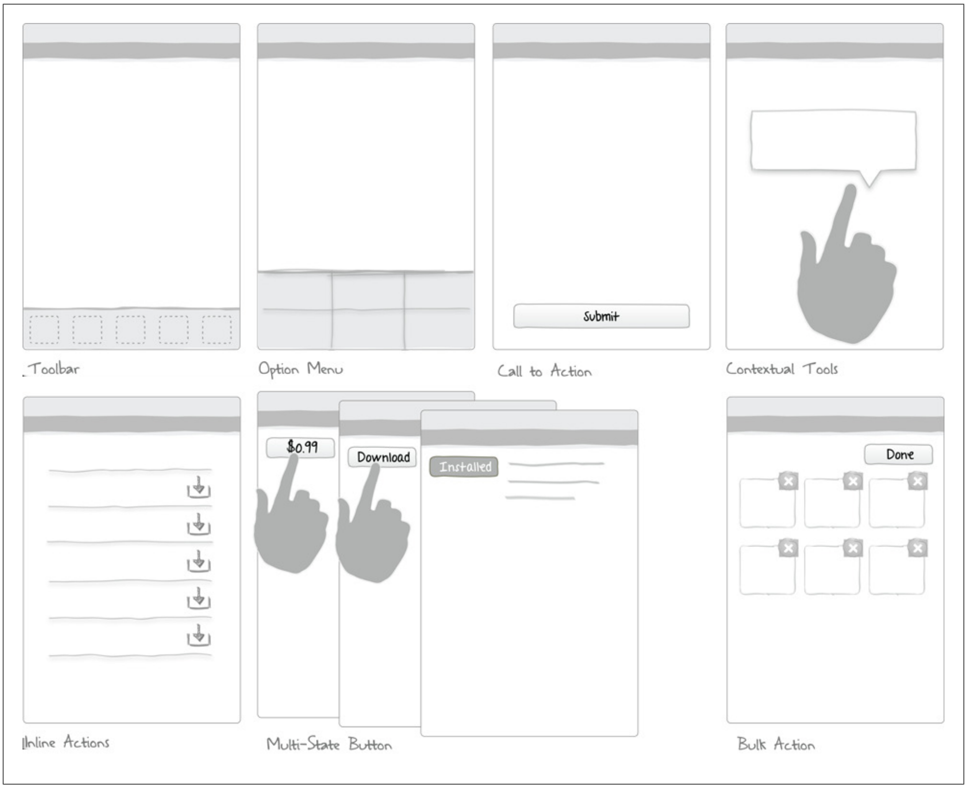
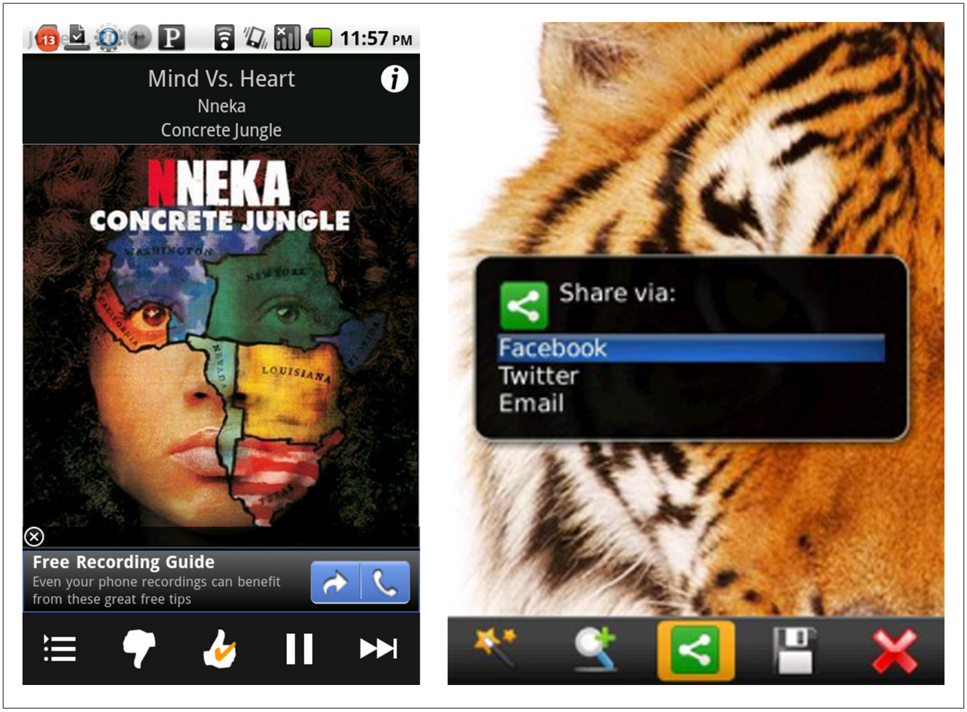


Figure 5-5. Patterns for Tools

Toolbar

The toolbar, also called an action bar, contains tools for screen-level actions. In Pandora, the toolbar includes options for switching to the list view, rating the song, pausing or skipping ahead. A+ Picture Effects for BlackBerry also provides a toolbar of common actions.



Free Recording Guide
Even your phone recordings can benefit from these great free tips

Figure 5-6. Pandora and A+Picture Effects

The default style in iOS is the pale blue bar, but it can be stylized.

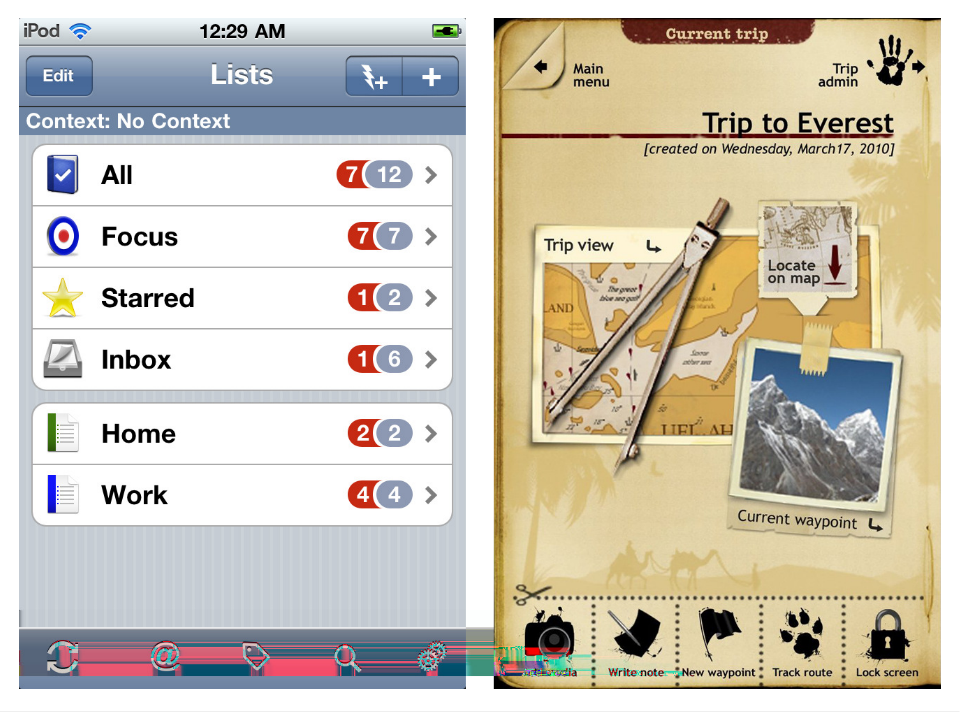
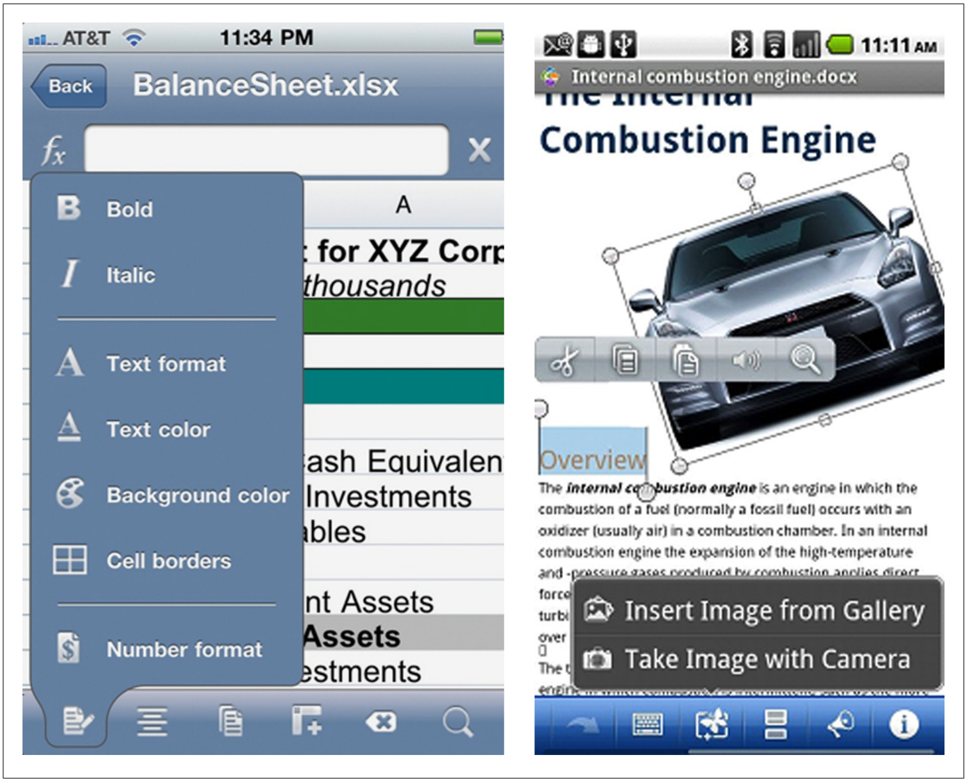


Figure 5-7. Default iOS toolbar and stylized toolbar in Trip Journal

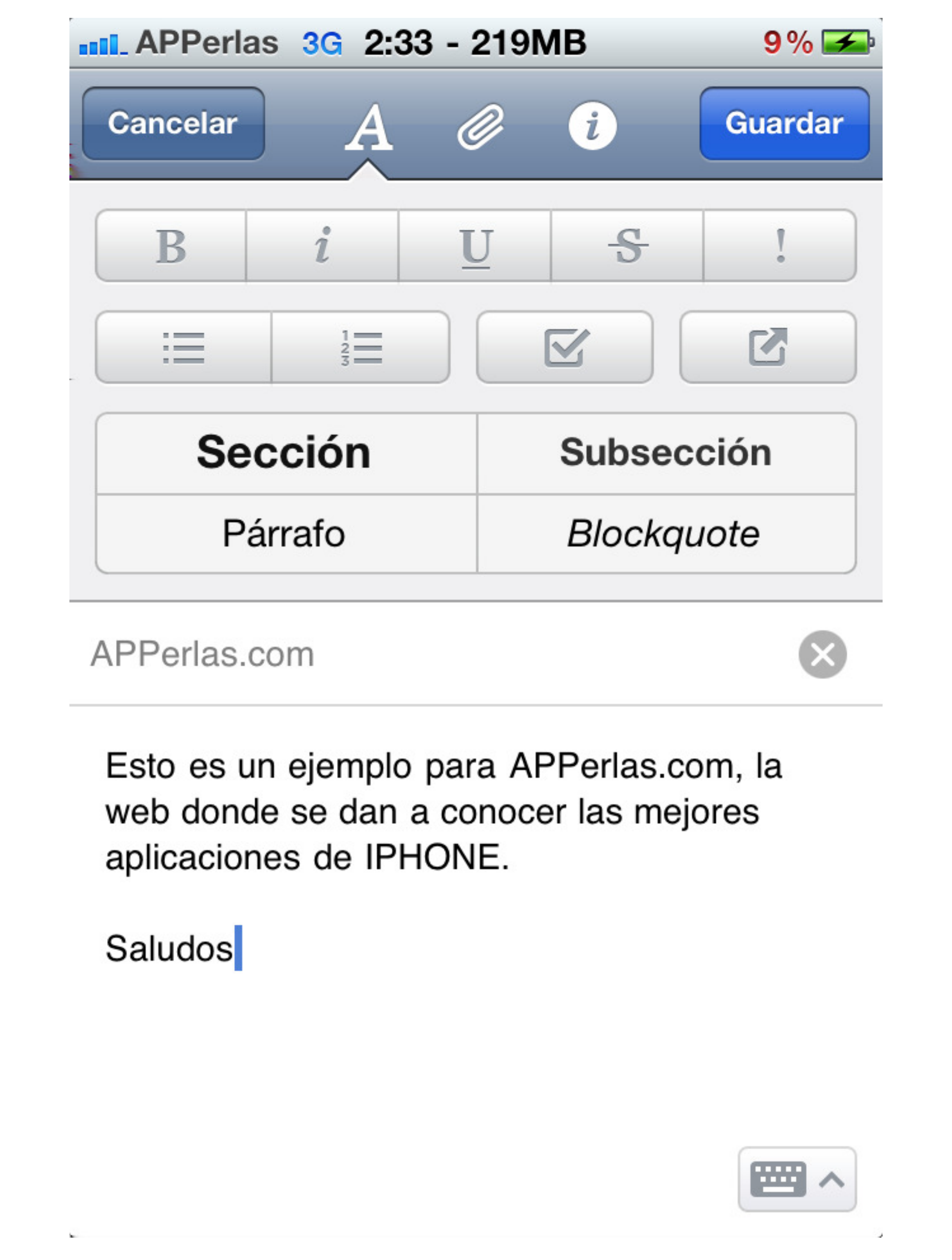
Sometimes the actions may have additional options to be specified. An OS neutral approach to display a selected tool's options is with a cascading menu. Many mobile applications use this technique to offer editing and formatting options.



The internal combustion engine is an engine in which the combustion of a fuel (normally a fossil fuel) occurs with an oxidizer (usually air) in a combustion chamber. In an internal combustion engine the expansion of the high-temperature and -pressure gases produced by combustion applies direct

Figure 5-8. QuickOffice Pro and Document To Go

Evernote uses a different technique to provide rich text formatting options: an inlay panel that remains visible.



Esto es un ejemplo para APPerlas.com, la web donde se dan a conocer las mejores aplicaciones de IPHONE.

Saludos

Figure 5-9. Evernote

Actionsheets in iOS are another way to offer more options for a selected tool. Pulse implemented it correctly displaying the four different ways to share a story. Yelp! and

Ibis missed the mark by using the actionsheet to show sorting and filtering options, respectively. See Chapter 4, for better ways to sort and filter.

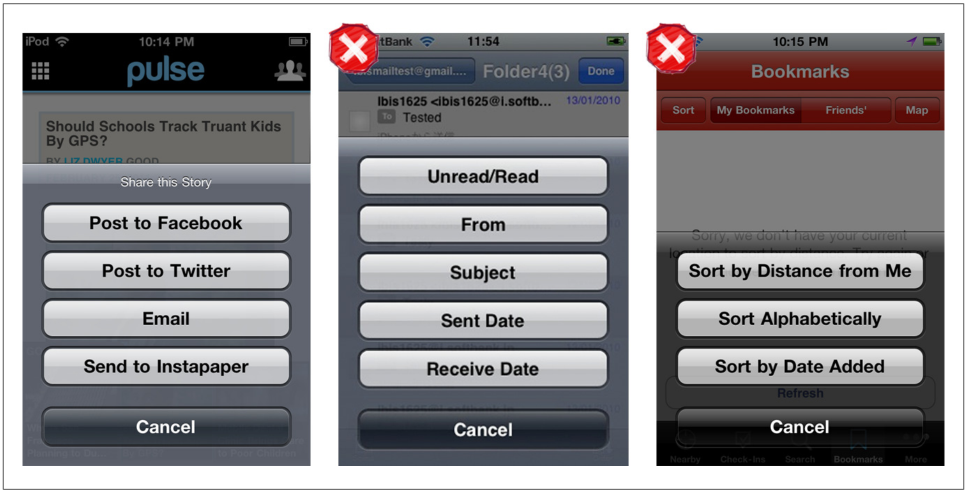
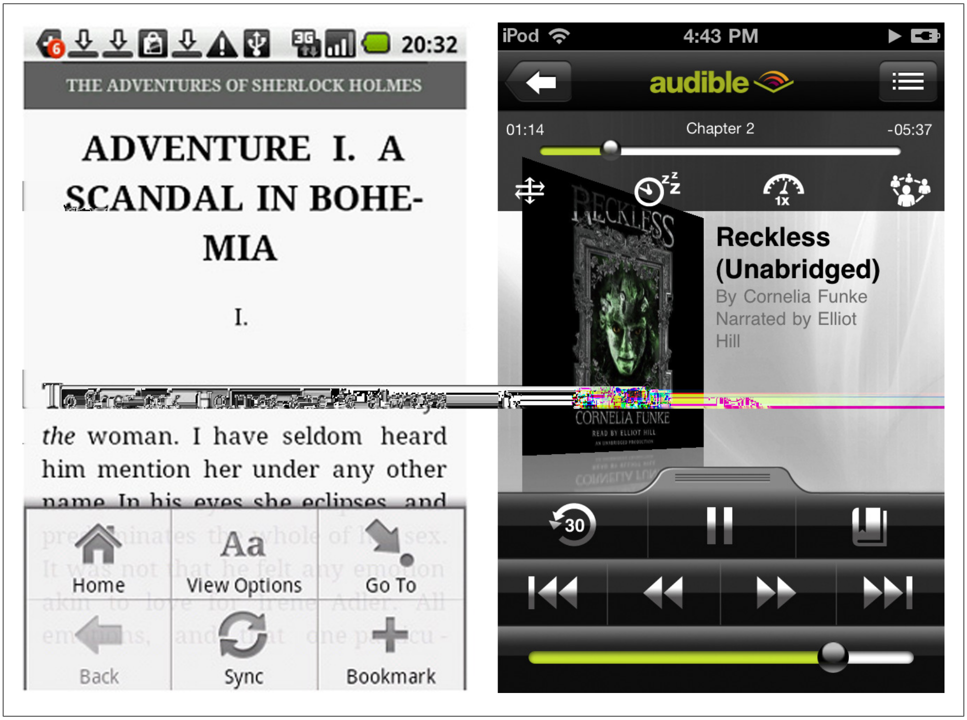


Figure 5-10. Pulse, Ibis, and Yelp

Toolbars are generally displayed at the bottom of the screen and contain screen-level actions. Choose icons that that are familiar and easy to recognize, or use labels plus icons.

Option Menu

Option Menus, like Toolbars, can contain screen-level actions, but can be accessed and displayed in a number of different ways. Android menus are accessed with a hard menu button, but other menus might be opened by flicking a handle or tapping a menu button on the screen.



THE ADVENTURES OF SHERLOCK HOLMES

ADVENTURE I. A SCANDAL IN BOHEMIA

I.

To Sherlock Holmes she is always *the* woman. I have seldom heard him mention her under any other name. In his eyes she eclipses and predominates the whole of her sex. It was not that he felt any emotion akin to love for Irene Adler. All emotions, and that one particu-

Reckless (Unabridged)
By Cornelia Funke
Narrated by Elliot Hill

Figure 5-11. Menu on Android and play menu on Audible

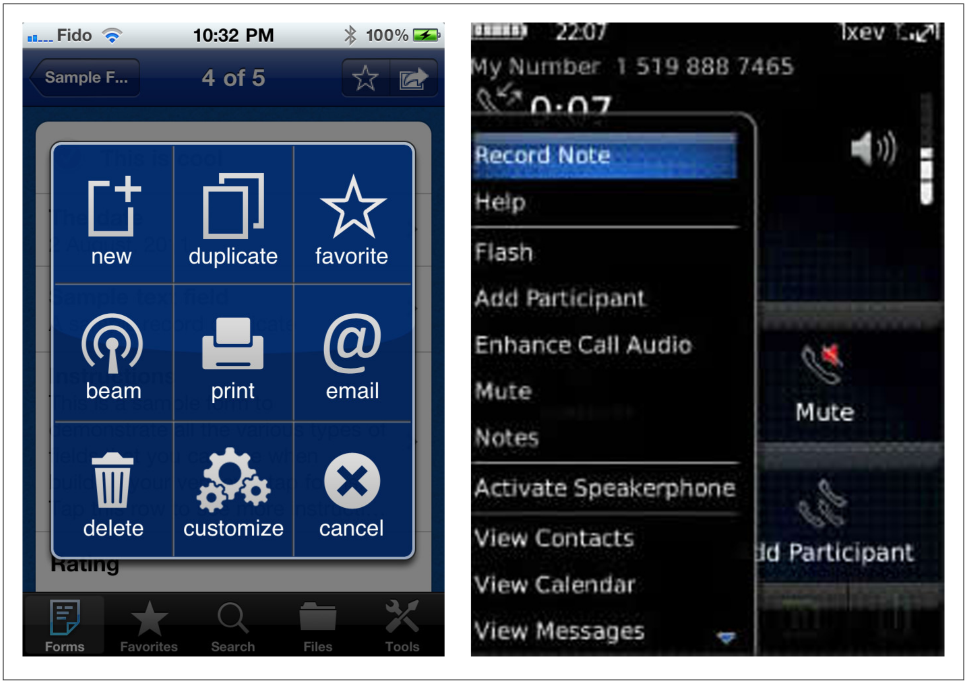
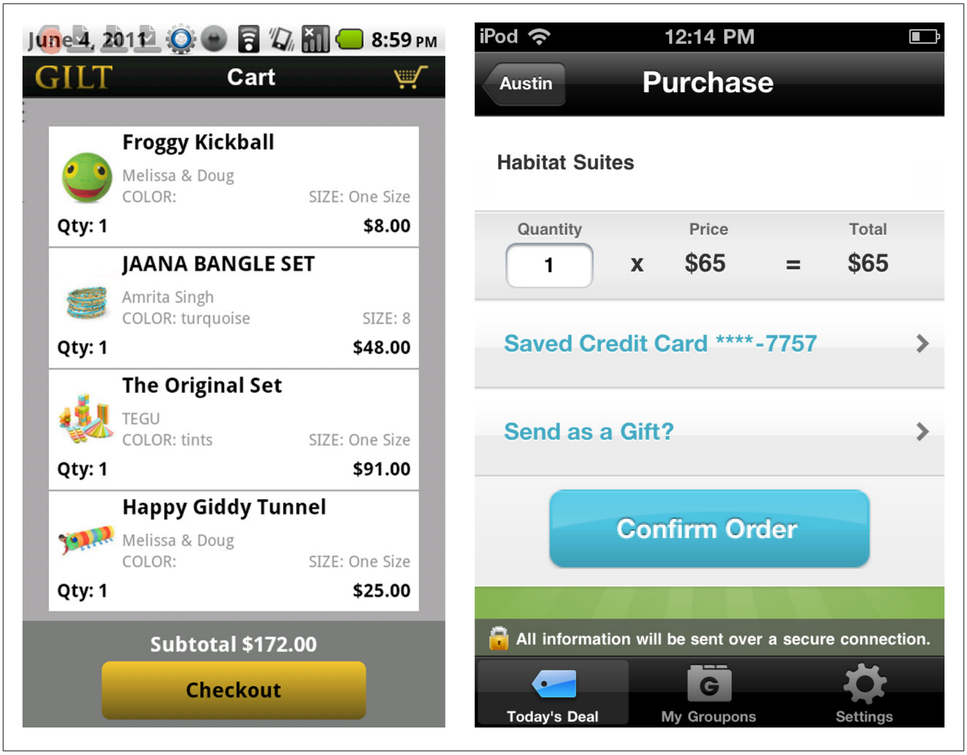


Figure 5-12. Tap Forms and Berry Record

Choose direct interactions when possible. Don't hide navigation in the Option Menu. Consider the Call to Action Button pattern if you have a single action for the screen.

Call to Action Button

A Call to Action Button may be a better option than a toolbar or a menu when you have only one primary call to action on the screen. Apps including Groupon, Gilt, Expedia, and Meebo have opted for this pattern instead of a traditional toolbar or option menu.



June 4, 2011 8:59 PM

GILT Cart

Froggy Kickball
Melissa & Doug
COLOR: SIZE: One Size
Qty: 1 $8.00

JAANA BANGLE SET
Amrita Singh
COLOR: turquoise SIZE: 8
Qty: 1 $48.00

The Original Set
TEGU
COLOR: tints SIZE: One Size
Qty: 1 $91.00

Happy Giddy Tunnel
Melissa & Doug
COLOR: SIZE: One Size
Qty: 1 $25.00

Subtotal $172.00

iPod 12:14 PM

Habitat Suites

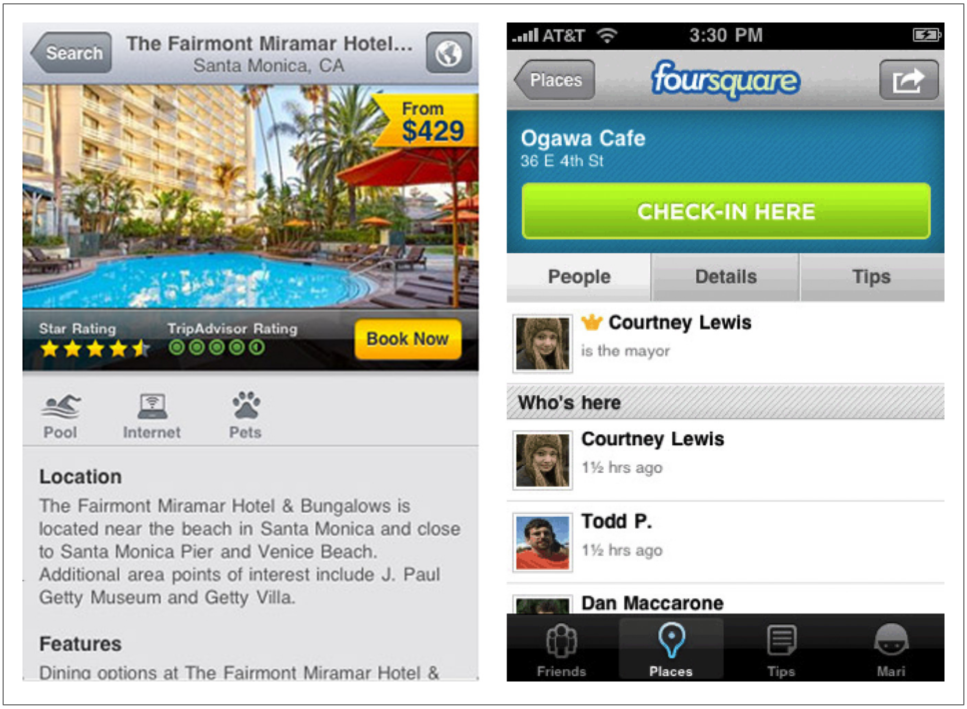
Quantity		Price		Total
1	x	$65	=	$65

Saved Credit Card ****-7757

Send as a Gift?

All information will be sent over a secure connection.

Figure 5-13. Gilt and Groupon



Location

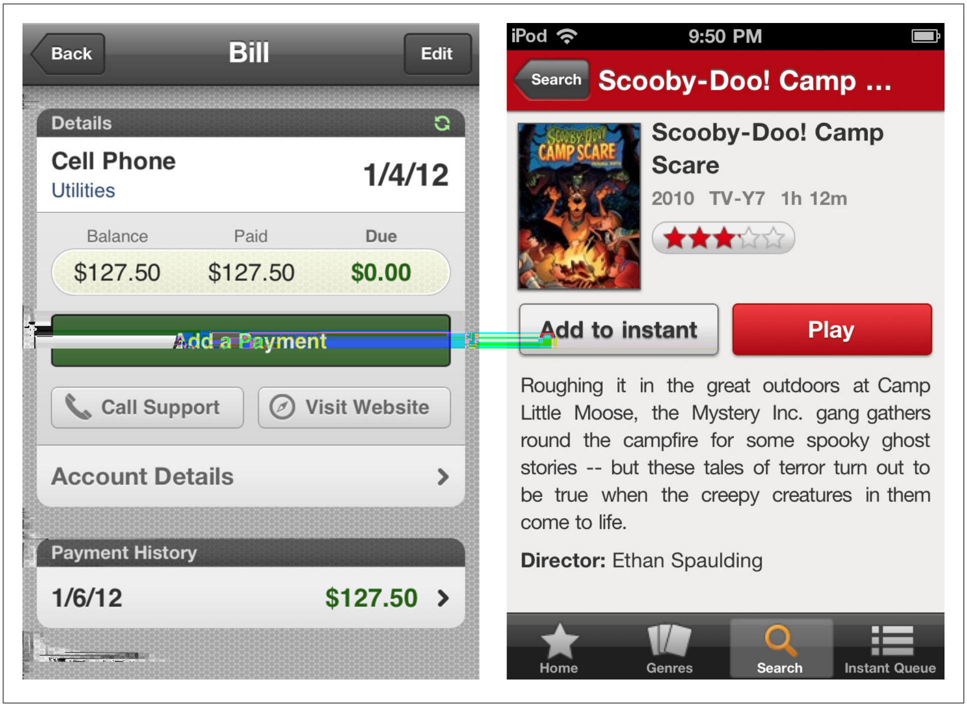
The Fairmont Miramar Hotel & Bungalows is located near the beach in Santa Monica and close to Santa Monica Pier and Venice Beach. Additional area points of interest include J. Paul Getty Museum and Getty Villa.

Features

Dining options at The Fairmont Miramar Hotel &

Figure 5-14. Expedia and Foursquare

This pattern may also work for screens with one primary and one ancillary call to action, like Bill Minder. But in these circumstances, visually differentiate the primary call to action from the other button.



Roughing it in the great outdoors at Camp Little Moose, the Mystery Inc. gang gathers round the campfire for some spooky ghost stories -- but these tales of terror turn out to be true when the creepy creatures in them come to life.

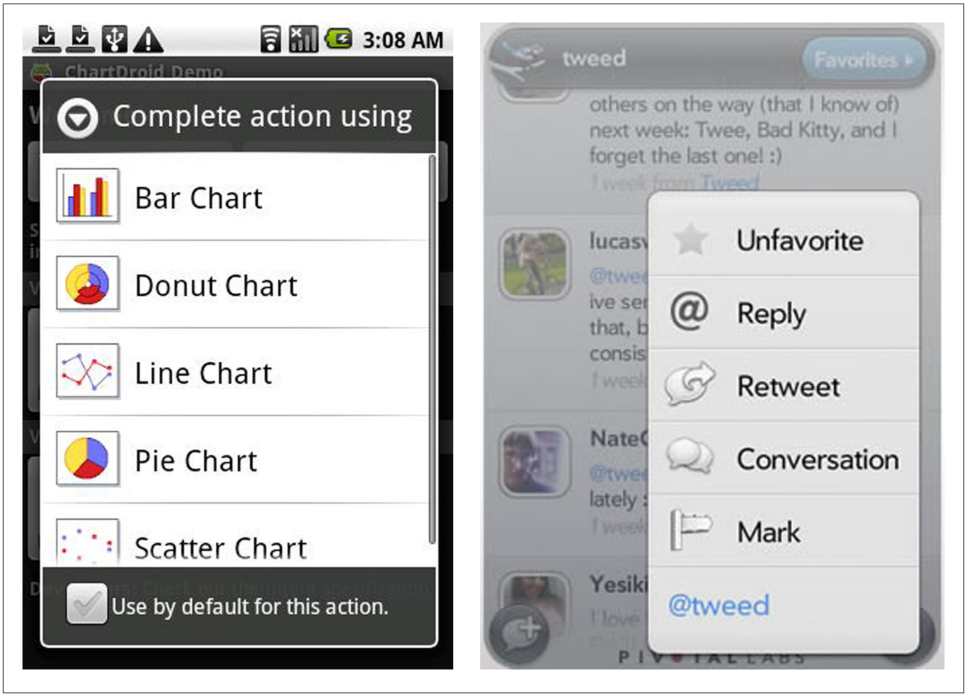
Director: Ethan Spaulding

Figure 5-15. BillMinder and Netflix

Don’t hide the main call to action in a menu or disguise it as an unrecognizable icon in a toolbar. Make it obvious (good contrast) and spell it out (clear label).

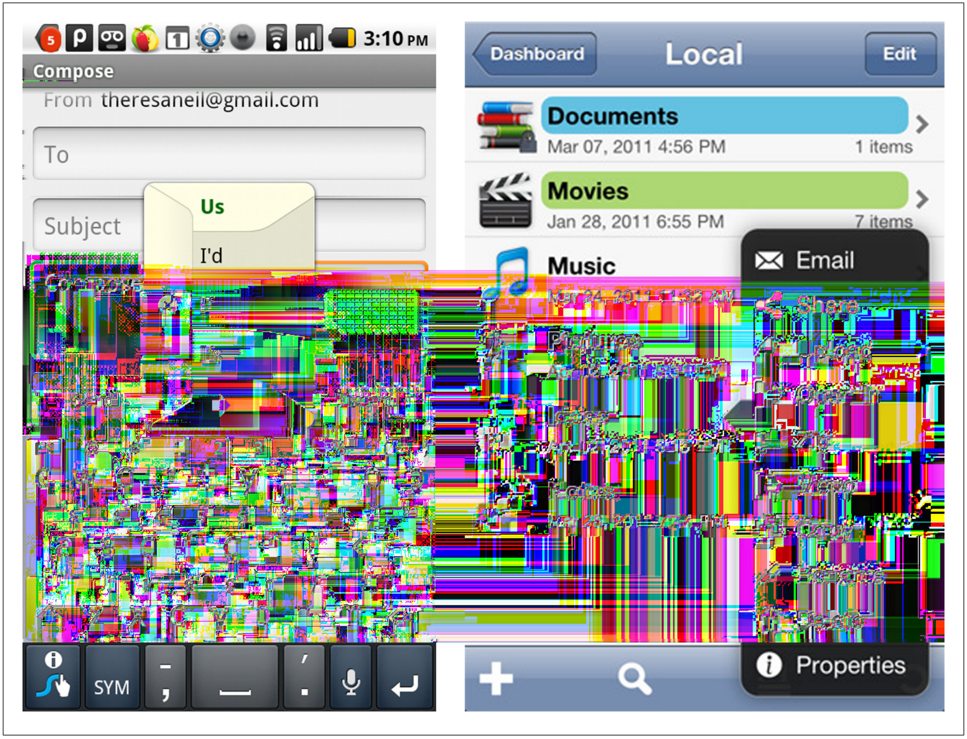
Contextual Tools

Contextual tools can be used to work on a particular object on the screen. It makes sense (and de-clutters the interface) if we only show these tools once the context has been established. For example, a long press on an object (an Android-specific gesture) will reveal charting options in ChartDroid, or tapping on a tweet in Tweed on WebOS will reveal a list of options.



others on the way (that I know of) next week: Twee, Bad Kitty, and I forget the last one! :)

Figure 5-16. ChartDroid and Tweed



From theresaneil@gmail.com

Documents
Mar 07, 2011 4:56 PM 1 items

Movies
Jan 28, 2011 6:55 PM 7 items

Music

Figure 5-17. Mail on Android and iFiles

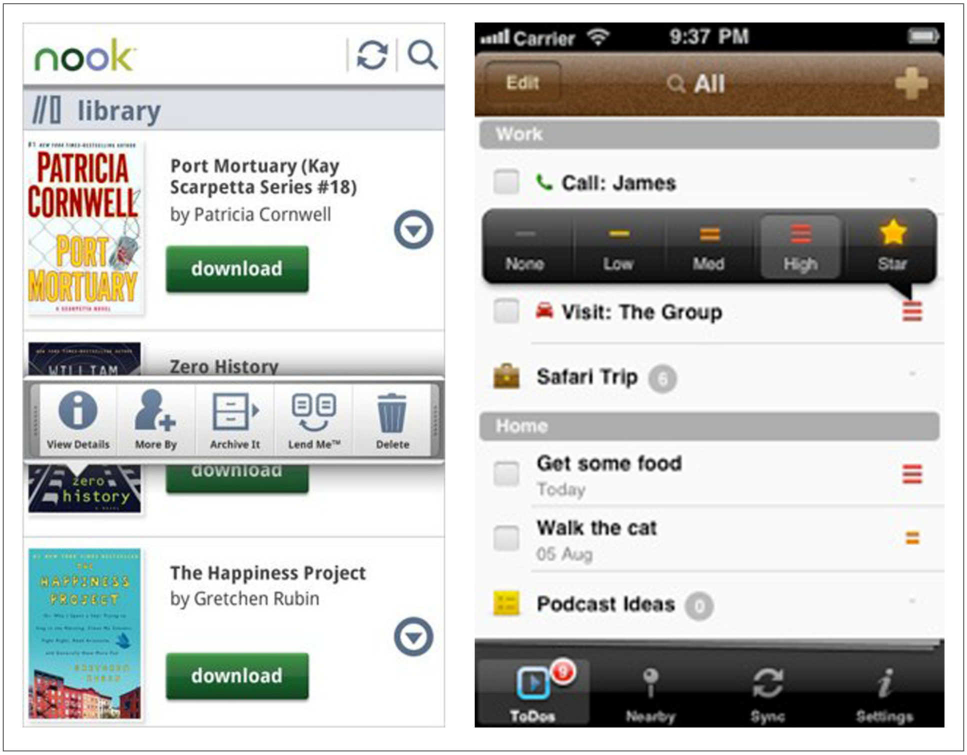
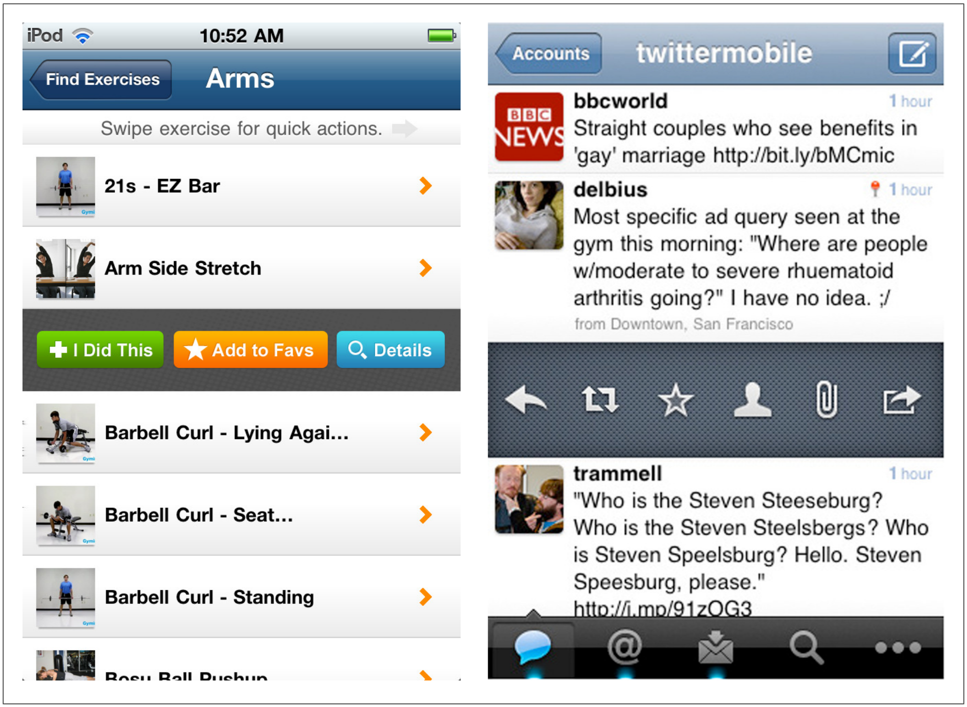


Figure 5-18. Barns & Noble Nook and 2doApp

Contextual tools can be modal, like the previous examples, or nonmodal, like DailyBurn and twittermobile.



21s - EZ Bar

Arm Side Stretch

Barbell Curl - Lying Agai...

Barbell Curl - Seat...

Barbell Curl - Standing

Bosu Ball Pushup

bbcworld 1 hour
Straight couples who see benefits in 'gay' marriage http://bit.ly/bMCmic

delbius 1 hour
Most specific ad query seen at the gym this morning: "Where are people w/moderate to severe rhuematoid arthritis going?" I have no idea. ;/
from Downtown, San Francisco

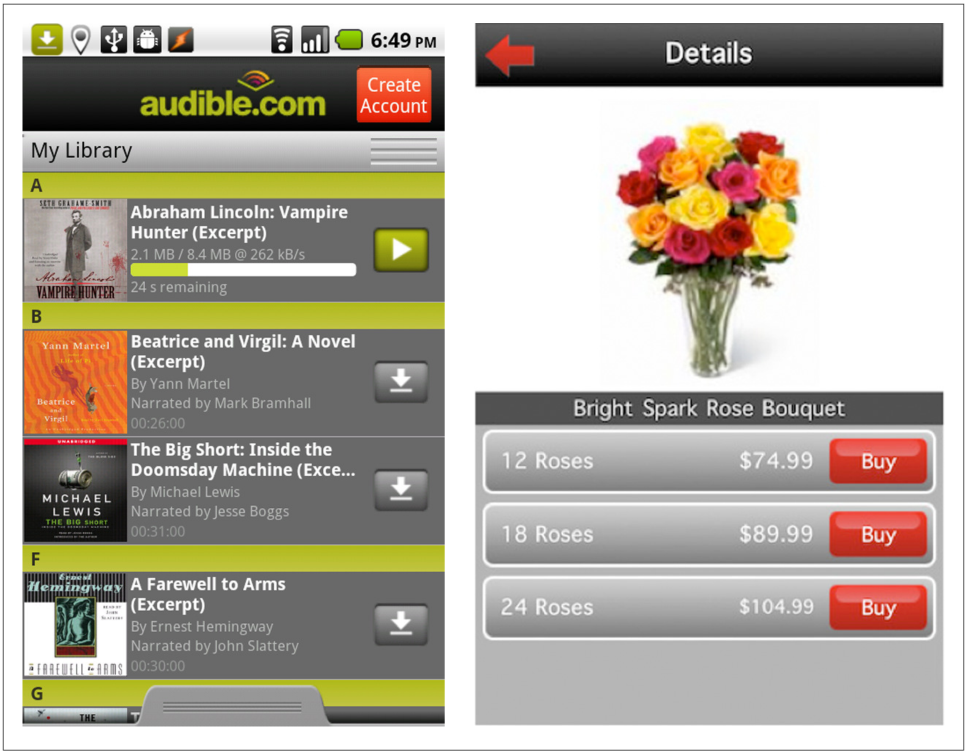
trammell 1 hour
"Who is the Steven Steeseburg? Who is the Steven Steelsbergs? Who is Steven Speelsburg? Hello. Steven Speesburg, please."
http://i.mp/91zOG3

Figure 5-19. DailyBurn and twittermobile

Choose direct interactions when possible. If buttons are necessary, they should be displayed in proximity to the actionable object. Choose a familiar icon or use a text label.

Inline Actions

Inline actions can also be used to work on a particular object on the screen, but unlike the previous pattern, these actions are alwaysvisible. For example, the *download* buttons in Audible and *buy* buttons on Teleflora.



Abraham Lincoln: Vampire Hunter (Excerpt)
2.1 MB / 8.4 MB @ 262 kB/s
24 s remaining

Beatrice and Virgil: A Novel (Excerpt)
By Yann Martel
Narrated by Mark Bramhall
00:26:00

The Big Short: Inside the Doomsday Machine (Exce...
By Michael Lewis
Narrated by Jesse Boggs
00:31:00

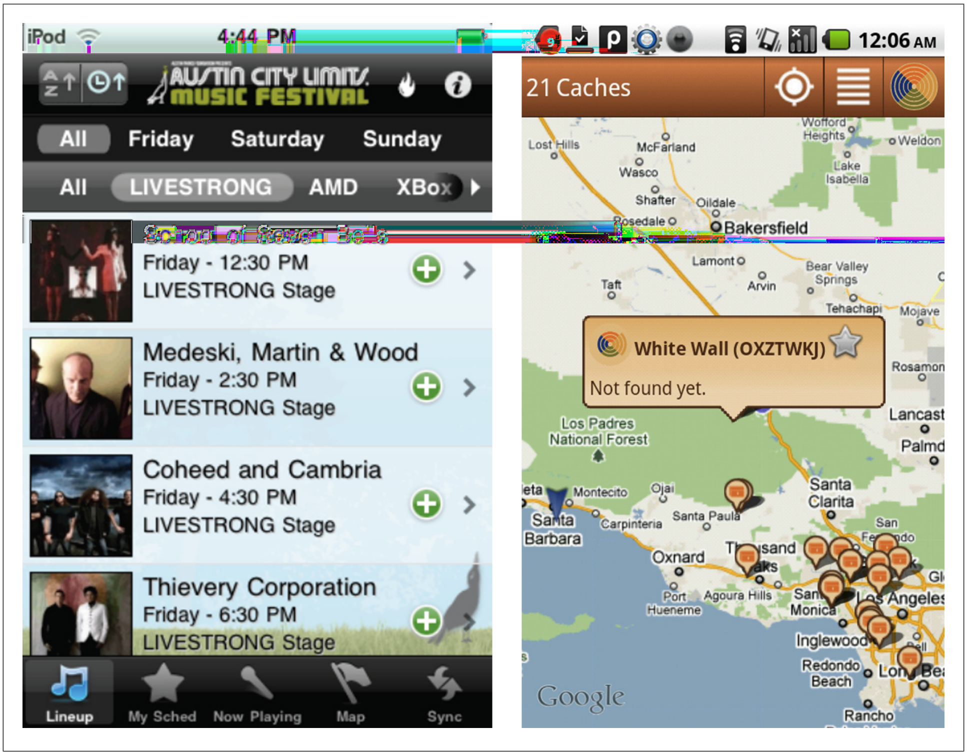
A Farewell to Arms (Excerpt)
By Ernest Hemingway
Narrated by John Slattery
00:30:00

Bright Spark Rose Bouquet

12 Roses	$74.99	Buy
18 Roses	$89.99	Buy
24 Roses	$104.99	Buy

Figure 5-20. Audible and Teleflora

Many applications rely on state-full buttons for the inline actions, like the *add* button in ACL that changes to *remove*, and the *favorites star* button in OpenCaching that can be toggled on or off. See the next pattern, the Multi-State Button, for incorporating more than two states.


School of Seven Bells
Friday - 12:30 PM
LIVESTRONG Stage

Medeski, Martin & Wood
Friday - 2:30 PM
LIVESTRONG Stage

Coheed and Cambria
Friday - 4:30 PM
LIVESTRONG Stage

Thievery Corporation
Friday - 6:30 PM
LIVESTRONG Stage

White Wall (OXZTWKJ)
Not found yet.

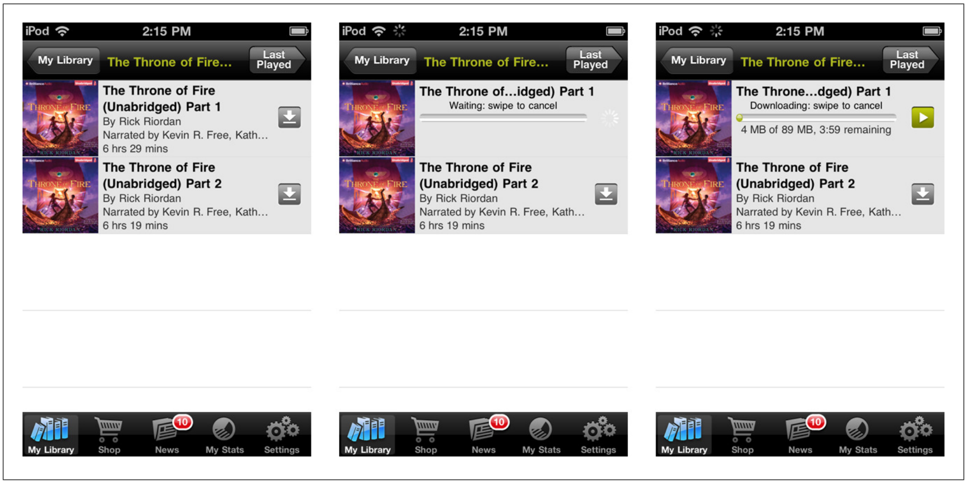
Figure 5-21. ACL Music Festival and OpenCaching

Choose direct interactions when possible. The actions should be in proximity to the actionable object. Choose a familiar icon or use a text label. Max one to two inline actions per object.

Multi-State Button

Normally user interface controls should have a single purpose. However, the Multi-State Button is an exception. In the reduce real-estate of a mobile screen, it may make sense to have the button act as both a trigger and feedback mechanism.

Take for example the experience of downloading a story in Audible. First you'll see the inline action to download a story. Tap it again to download. Then it becomes an indicator for the download progress with an option to swipe and cancel, or play the story.



The Throne of Fire (Unabridged) Part 1
By Rick Riordan
Narrated by Kevin R. Free, Kath...
6 hrs 29 mins

The Throne of Fire (Unabridged) Part 2
By Rick Riordan
Narrated by Kevin R. Free, Kath...
6 hrs 19 mins

The Throne of...idged) Part 1
Waiting: swipe to cancel

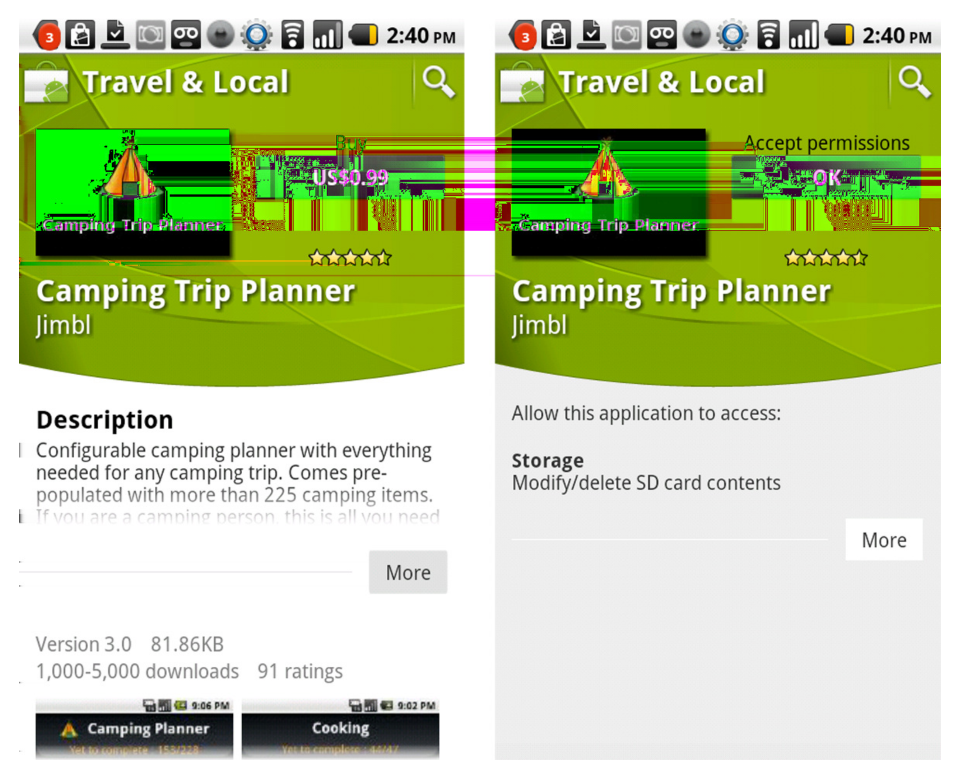
The Throne of Fire (Unabridged) Part 2
By Rick Riordan
Narrated by Kevin R. Free, Kath...
6 hrs 19 mins

The Throne...dged) Part 1
Downloading: swipe to cancel
4 MB of 89 MB, 3:59 remaining

The Throne of Fire (Unabridged) Part 2
By Rick Riordan
Narrated by Kevin R. Free, Kath...
6 hrs 19 mins

Figure 5-22. Audible

The Apple App Store and Android Market use this pattern for Buy and Update buttons.



Description

Configurable camping planner with everything needed for any camping trip. Comes pre-populated with more than 225 camping items. If you are a camping person, this is all you need

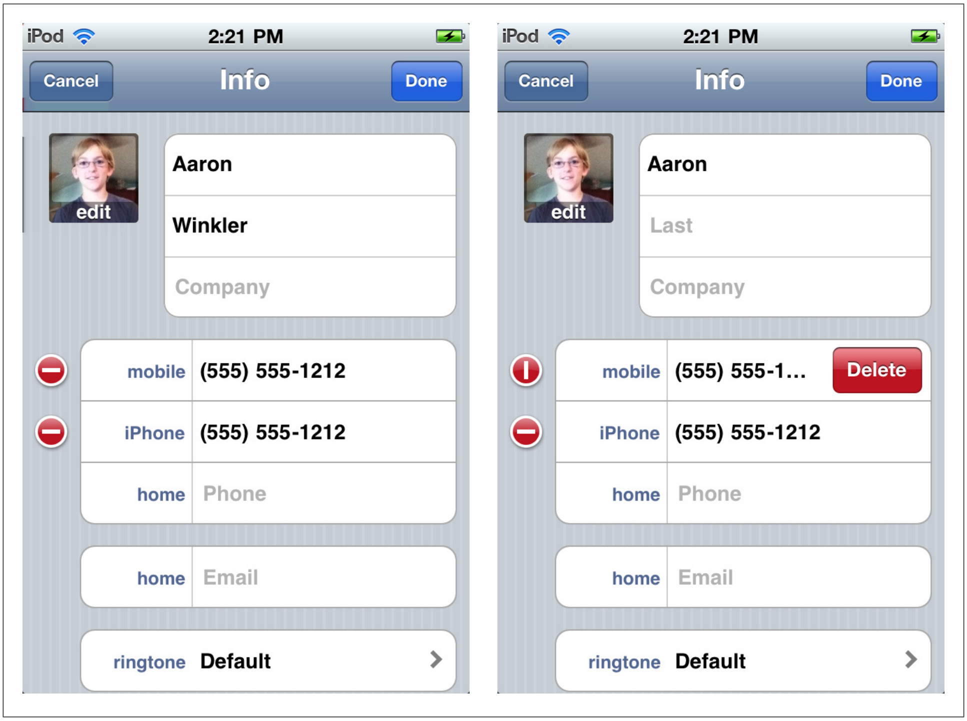
Version 3.0 81.86KB
1,000-5,000 downloads 91 ratings

Allow this application to access:

Storage
Modify/delete SD card contents

Figure 5-23. Android Market

Another common case for a Multi-State Button is to delete or remove an object. It would break the users’ flow to pop up a delete confirmation, see Chapter 10, Idiot Boxes. But it makes sense to require confirmation before an irreparable action is taken.

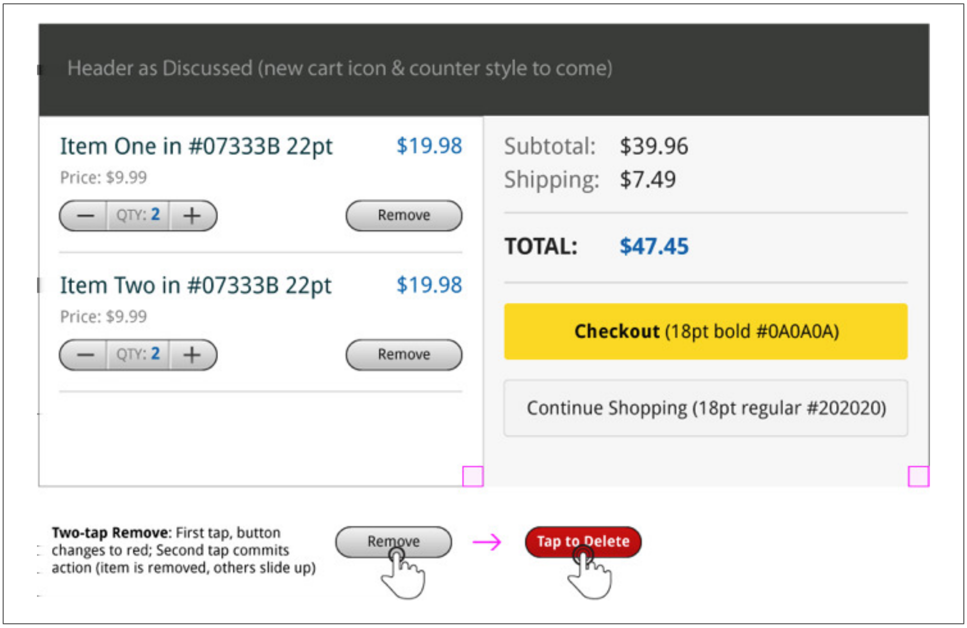


Aaron
Winkler
Company
mobile (555) 555-1212
iPhone (555) 555-1212
home Phone
home Email
ringtone Default

Aaron
Last
Company
mobile (555) 555-1...

iPhone (555) 555-1212
home Phone
home Email
ringtone Default

Figure 5-24. Contacts on iOS



Two-tap Remove: First tap, button changes to red; Second tap commits action (item is removed, others slide up)

Figure 5-25. Interaction notes from Adobe Flex 4.5 Reference application

Multi-State Buttons work well for a series of tightly correlated actions that will to be performed in succession with limited screen real-estate.

Bulk Actions

Common bulk actions include: selection, adding/deleting, and reordering. Instead of cluttering the main screen with all of these options, provide a mode for bulk actions.

The native Photos app for iOS offers a “selection” mode for choosing photos from the camera roll to share. Likewise, Animoto provides a mode for reordering, and/or removing, clips in a video.

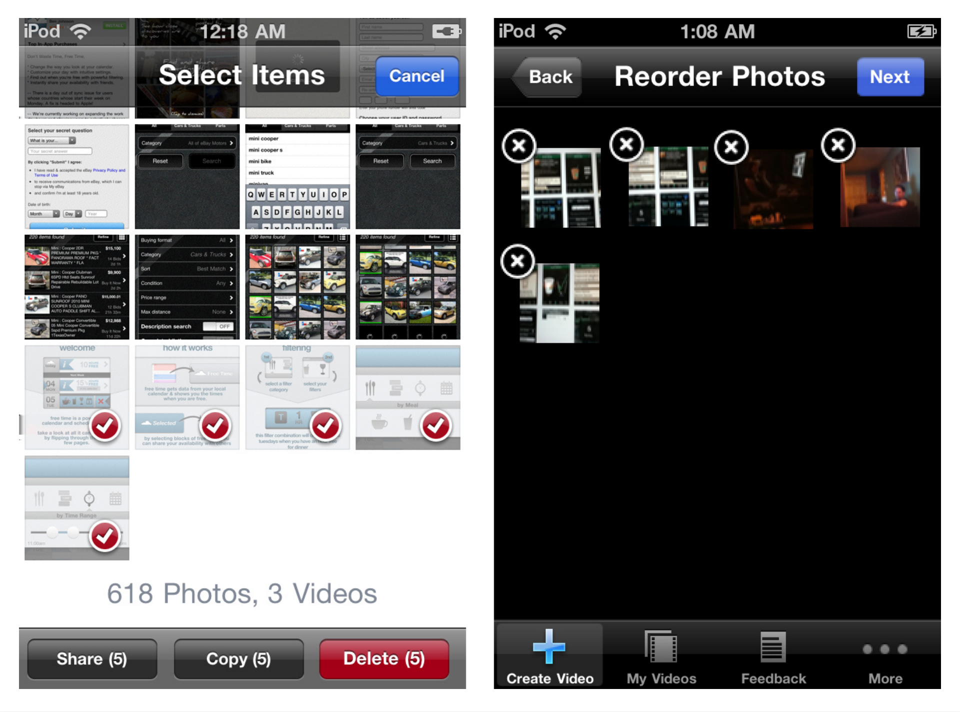


Figure 5-26. Photos on iOS and Animoto

ShoppingList has a simple design for editing a list:

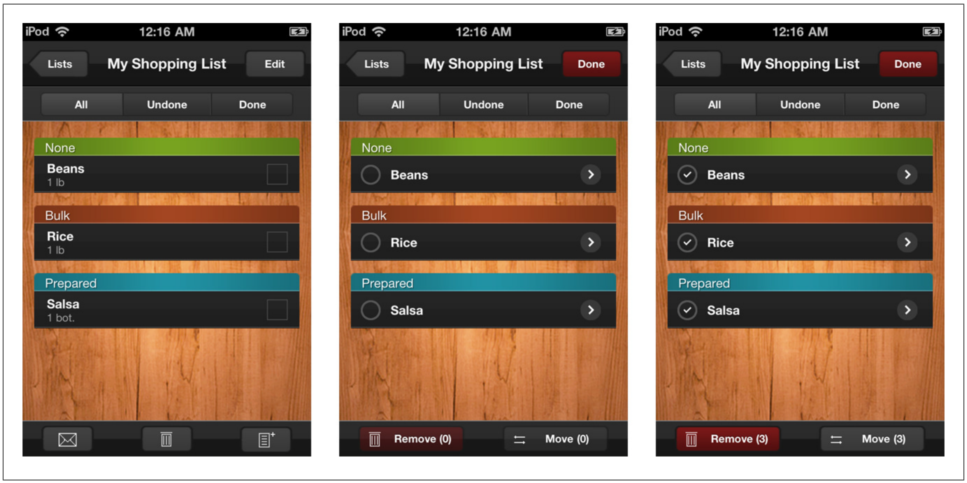


Figure 5-27. Shopping List

And tools like Path and Pulse will provide simple configuration screens for bulk actions like add, remove, and reorder.

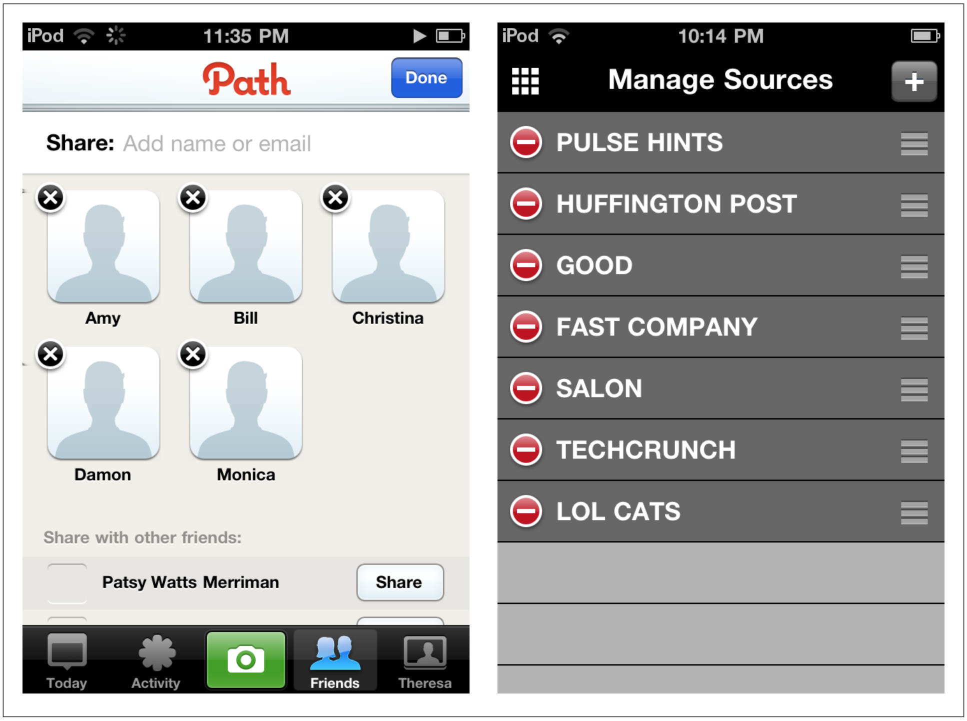


Figure 5-28. Path, edit mode; Pulse, drag handle to reorder sources

Bulk actions like delete and reorder are best handled in an edit mode. Provide an obvious option for exiting the mode.

CHAPTER 6
Charts

Patterns: Chart with Filters, Overview + Data, Scrolling with Preview, Data Point Details, Drill Down, Zoom In, Pivot Table, Sparklines

Mobile chart design inherits many of the same guidelines and best practices as print and desktop chart design. A great introductory book for this topic is *The Wall Street Journal Guide to Information Graphics: The Dos and Don'ts of Presenting Data, Facts, and Figures*, by Dona M. Wong. I also recommend Stephen Few's books on chart design.

All of these patterns build on a basic chart design. At a minimum, charts should include a title, axis labels, and data. The data may be displayed as a pie, bar, column, area, line, bubble, scatter plot, bullet, radar, gauge, or mixed chart. Depending on the type of chart, a legend may be necessary.

Some basic charts are used in RunKeeper Pro and GasLogto illustrate a runner's pace over the course of their run, and cost of gas over time, respectively.

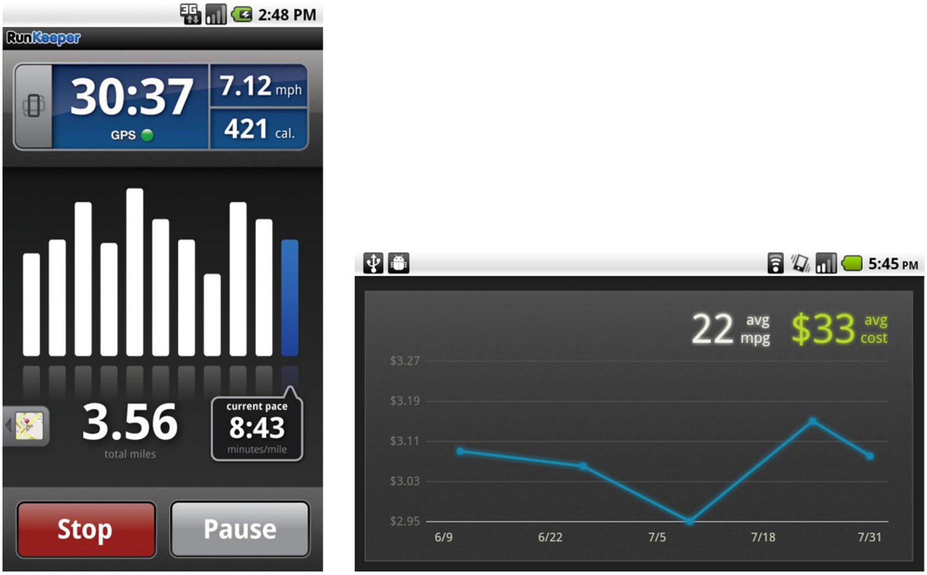


Figure 6-1. RunKeepr Pro and Gas Log

Once the basic chart design is established, watch for *Chart Junk* that might sneak in. Chart Junk refers to visual elements in charts and graphs that are not necessary to comprehend the information represented on the graph or that distract the viewer from this information [wikipedia]. See Chapter 9, for more information on Chart Junk.

Another tip to consider before opening up Photoshop is to get familiar with the charting library your developers will be using. Some libraries like ZingChart and Sencha Touch Charts have good charts right out of the box, others may require custom code to make them usable.

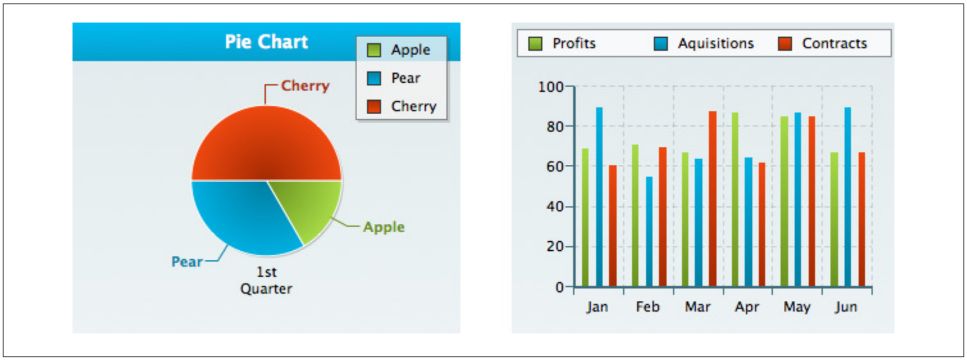


Figure 6-2. ZingCharts

Patterns we'll explore in this chapter include:

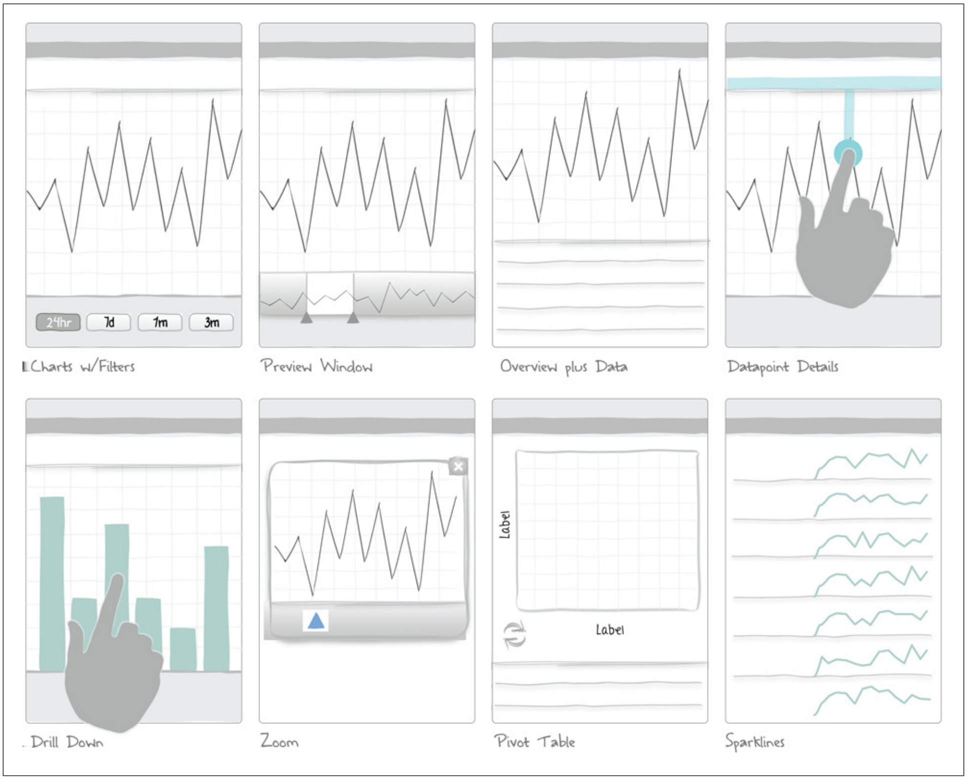


Figure 6-3. Patterns for charts

Chart with Filters

A basic chart can be enhanced with time controls or other filtering capabilities. In these examples from Fidelity and AccuFuel, the data can be analyzed from different time frames.

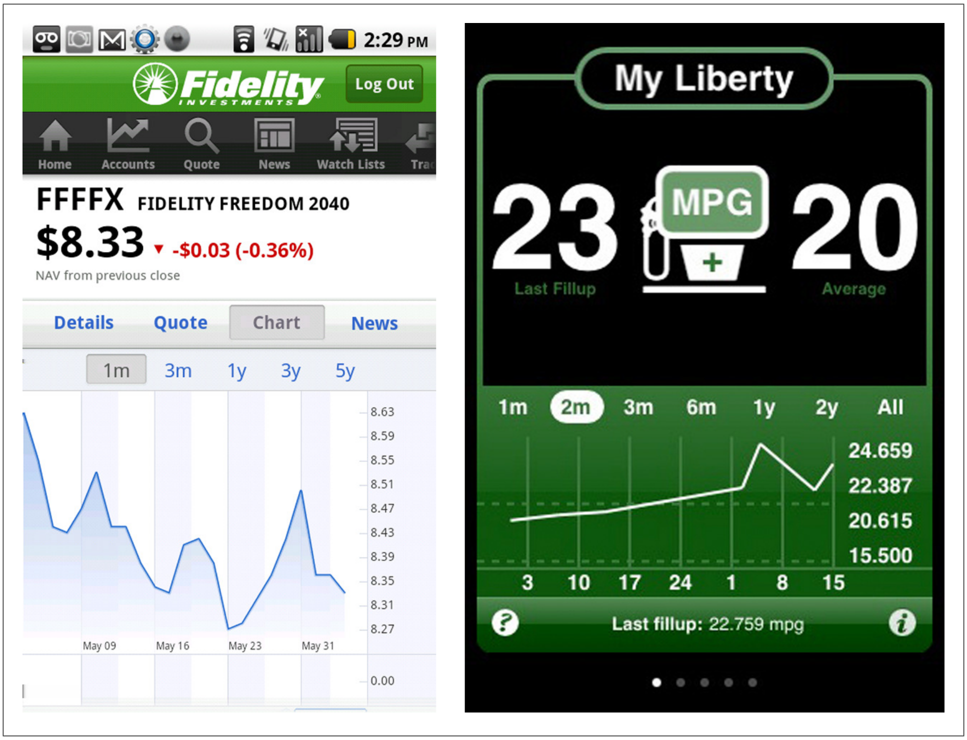
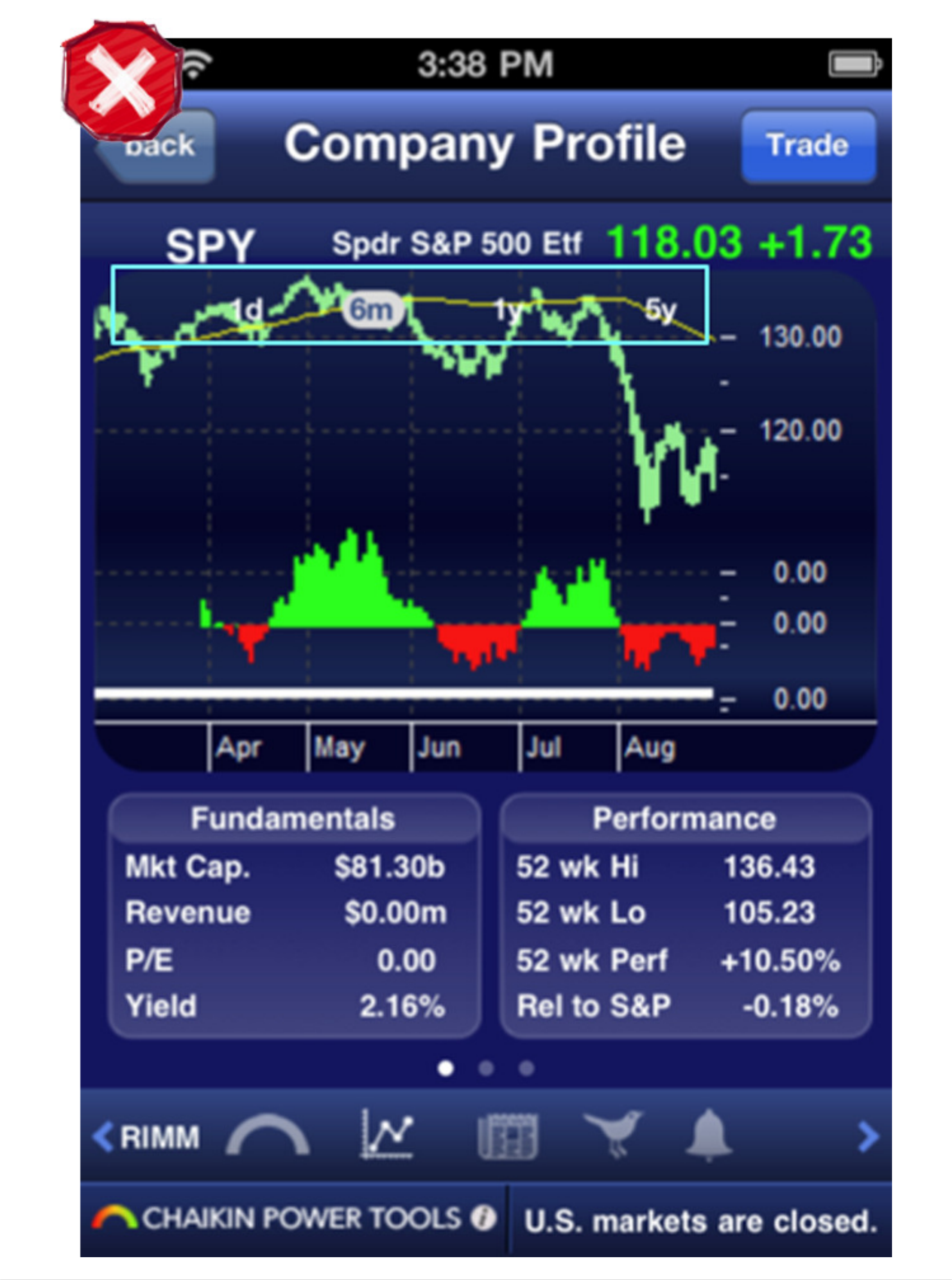


Figure 6-4. Fidelity and AccuFuel

If you're going to offer time control filters, provide plenty of space for the touch target. In this example from Chaikin, it is difficult to even see the filter controls since they are in the chart.



SPY Spdr S&P 500 Etf 118.03 +1.73

Fundamentals	
Mkt Cap.	$81.30b
Revenue	$0.00m
P/E	0.00
Yield	2.16%

Performance	
52 wk Hi	136.43
52 wk Lo	105.23
52 wk Perf	+10.50%
Rel to S&P	-0.18%

U.S. markets are closed.

Figure 6-5. Chaikin

I recommend bottom-aligned controls, like SmartGlance and Blue Mobile, because they are easier to access with the thumb and don't require the user to cover up the data with their hand.

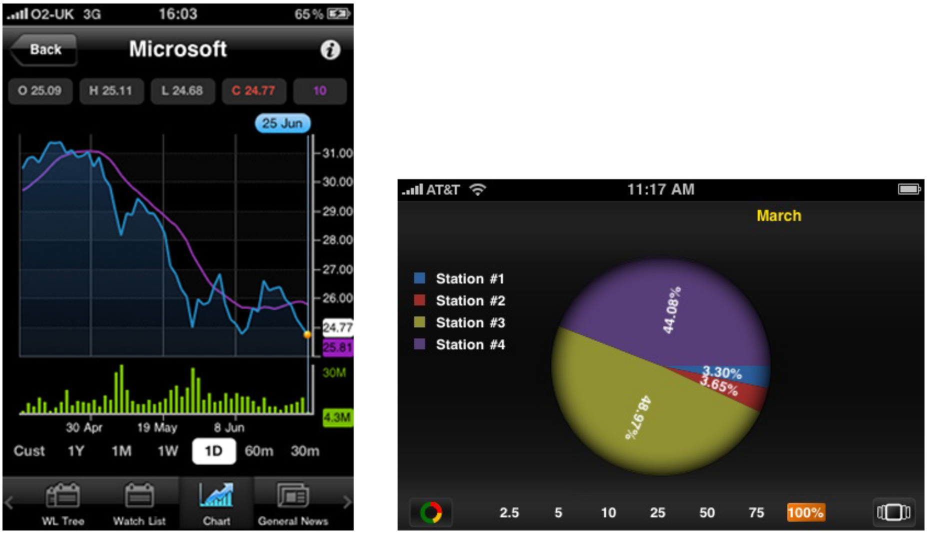


Figure 6-6. Blue Mobile and SmartGlance

The Android NewsWeather app and Daylight Calendar app uses date and times to filter the chart view.

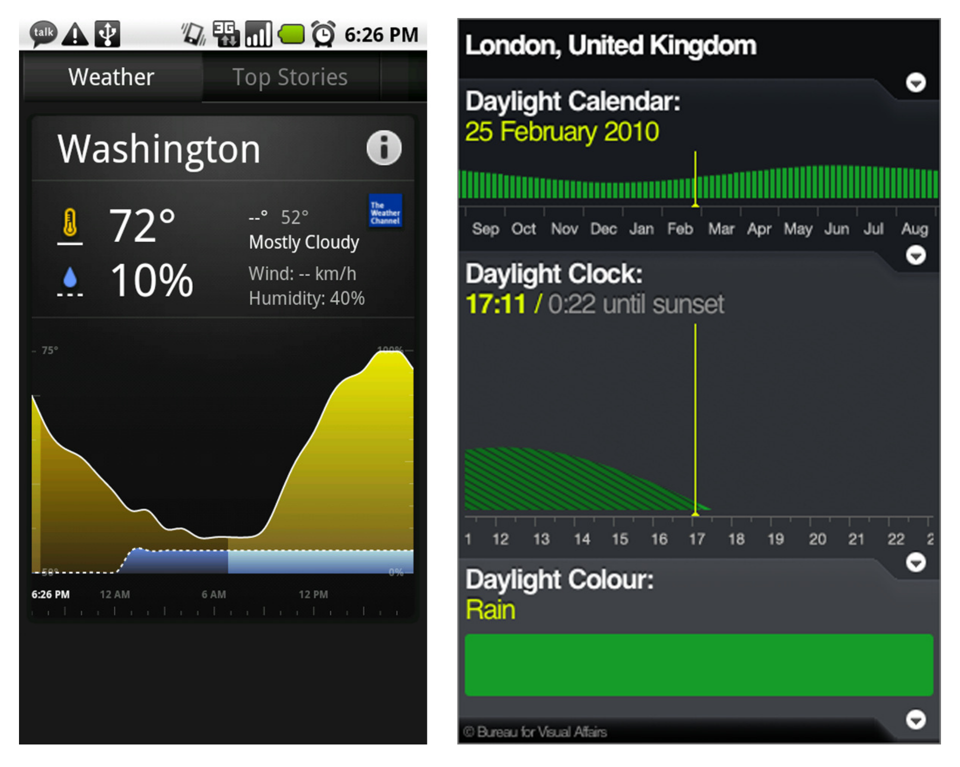


Figure 6-7. Android NewsWeather and DayLightCal

Filters can be applied to different aspects of the chart. This example from Sencha Touch Charts shows how a legend can be used to filter the data displayed. Tapping the icon slides out the legend. Tapping on “Coal” dynamically removes that variable from the chart about US Energy Consumption.

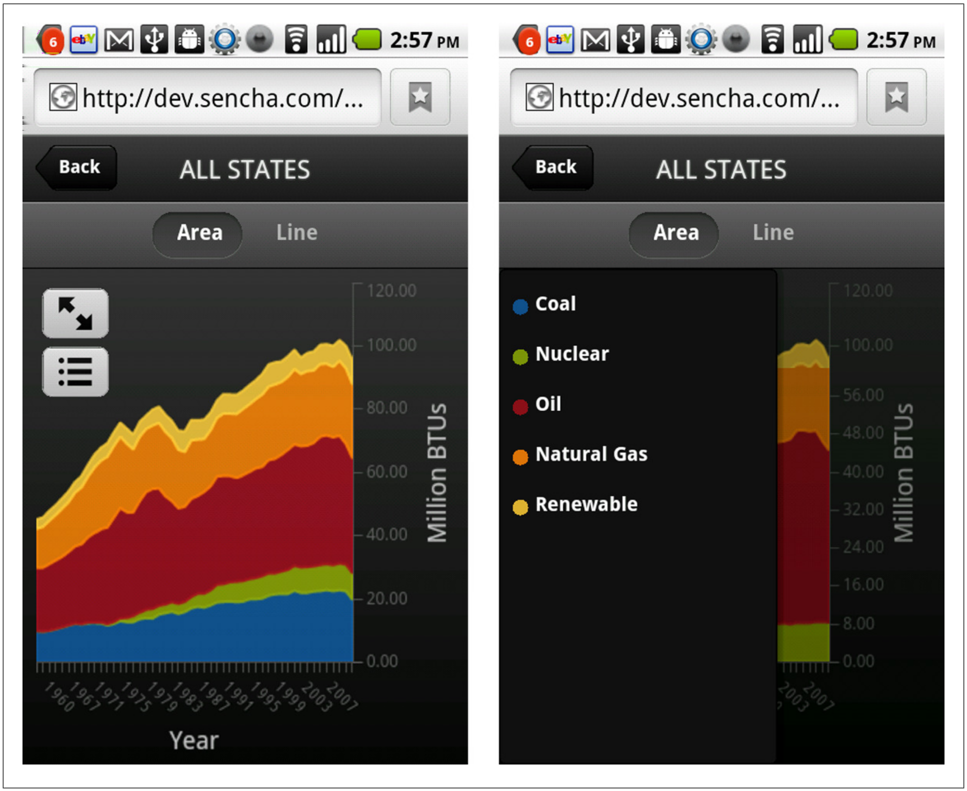


Figure 6-8. Sencha Touch Demo

Use standard UI filter controls and patterns, see Chapter 4. Dynamically update the chart instead of using an "Apply" button.

Preview Window

This pattern is useful for communicating changes in data over time by providing more context and historical information than can fit nicely on a mobile screen without flicking.

Roambi offers handles for changing what is shown in the preview area. Once the "window" is set, it can be dragged (a rolling window), or the handles can be adjusted autonomously.

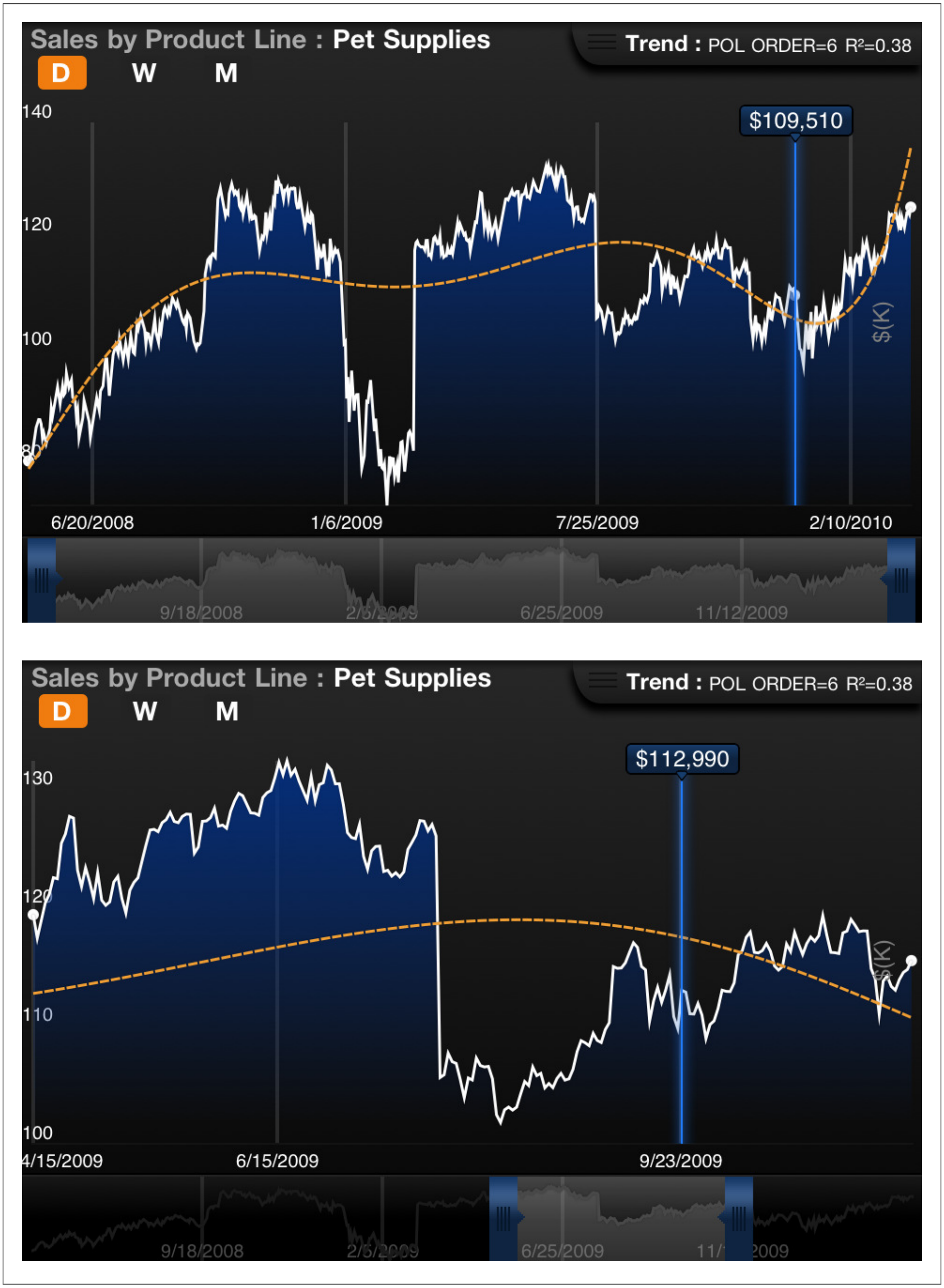
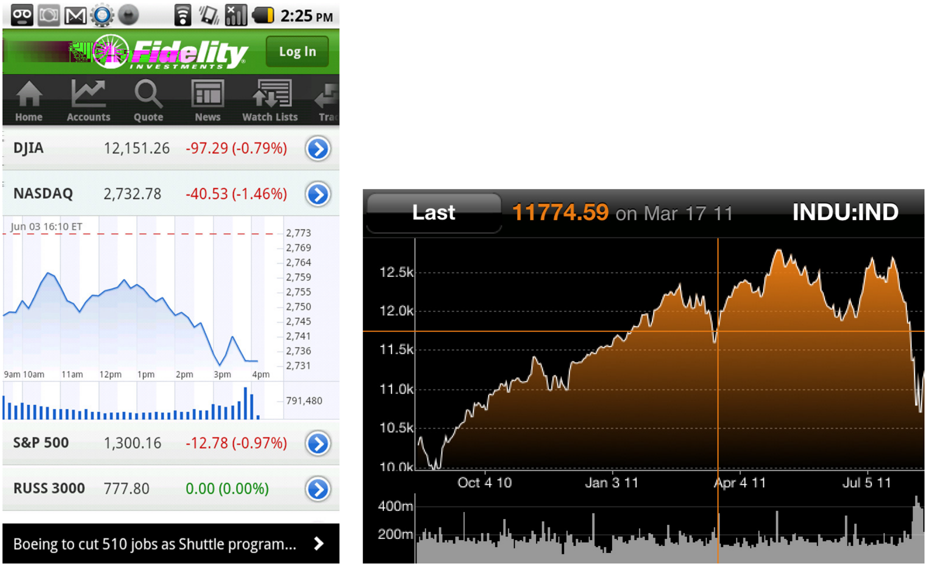


Figure 6-9. Roambi

Most financial applications use a read-only version of this pattern to show current numbers within the context of a longer period of time (i.e., the prices are up for today, but down for the month or year). More examples are in the Datapoint Details pattern.



DJIA	12,151.26	-97.29 (-0.79%)
NASDAQ	2,732.78	-40.53 (-1.46%)
S&P 500	1,300.16	-12.78 (-0.97%)
RUSS 3000	777.80	0.00 (0.00%)

Boeing to cut 510 jobs as Shuttle program...

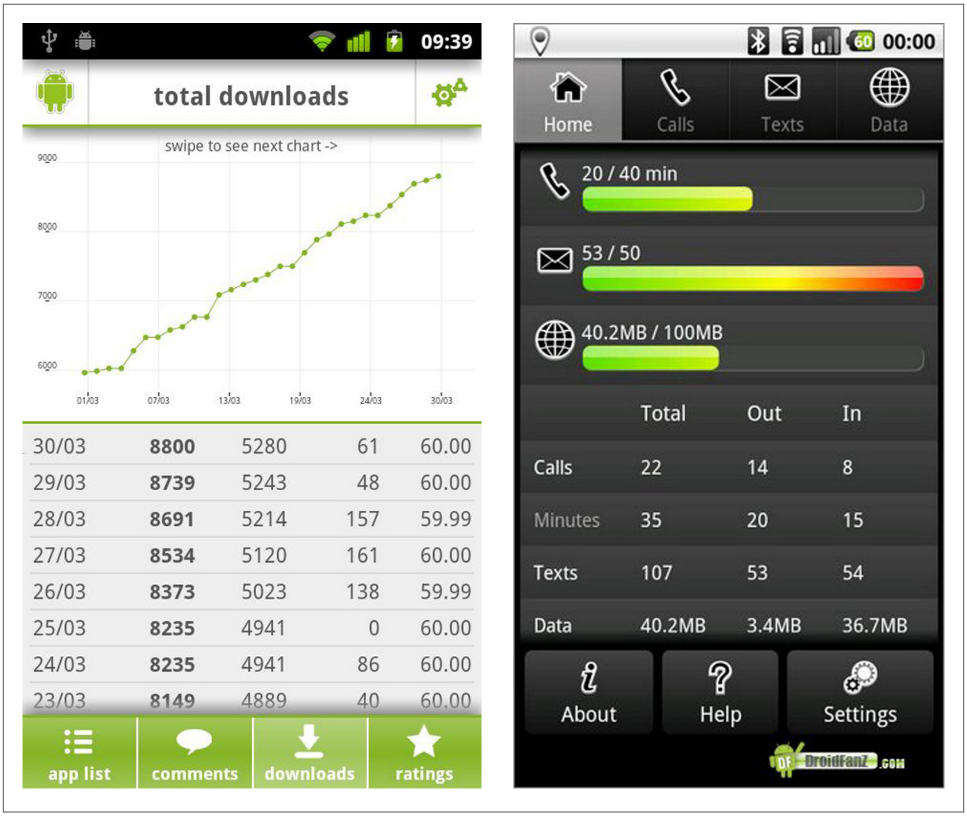
Last 11774.59 on Mar 17 11 INDU:IND

Figure 6-10. Fidelity and Bloomberg

The nature of the chart should determine if the preview window is read-only or interactive. If it is interactive, use large enough touch targets for easy manipulation.

Overview plus Data

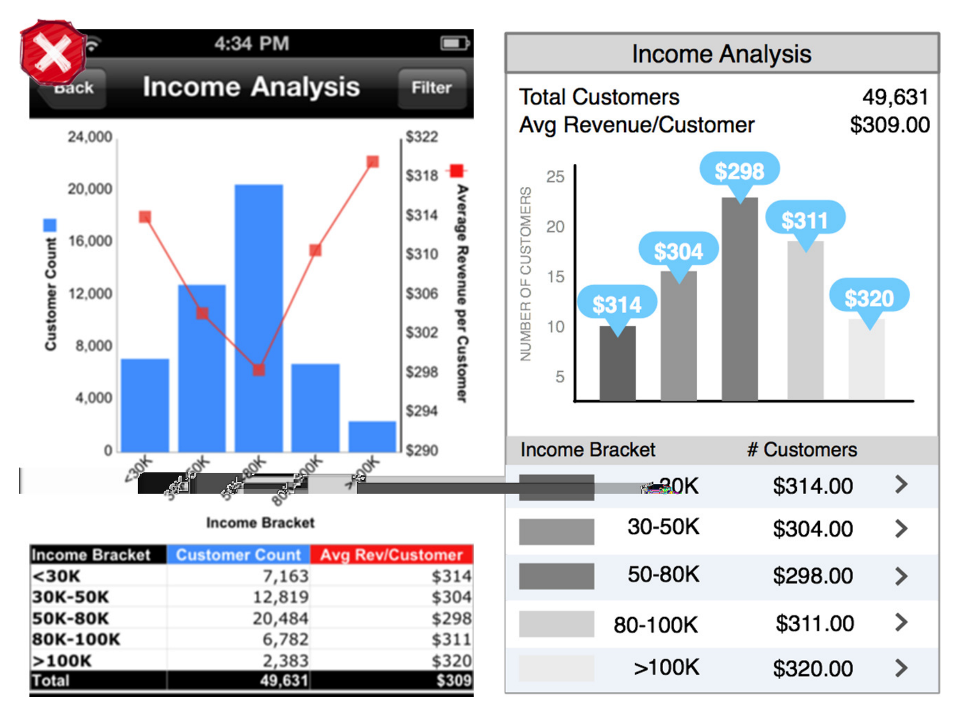
This pattern is also covered in Chapter 3, but in this chapter it refers specifically to using a chart for the overview. Both of these examples use charts to summarize the most important information, and a table below with the detailed data.



30/03	**8800**	5280	61	60.00
29/03	**8739**	5243	48	60.00
28/03	**8691**	5214	157	59.99
27/03	**8534**	5120	161	60.00
26/03	**8373**	5023	138	59.99
25/03	**8235**	4941	0	60.00
24/03	**8235**	4941	86	60.00
23/03	**8149**	4889	40	60.00

	Total	Out	In
Calls	22	14	8
Minutes	35	20	15
Texts	107	53	54
Data	40.2MB	3.4MB	36.7MB

Figure 6-11. Andlytics and PhoneUsage



Income Bracket	Customer Count	Avg Rev/Customer
<30K	7,163	$314
30K-50K	12,819	$304
50K-80K	20,484	$298
80K-100K	6,782	$311
>100K	2,383	$320
Total	49,631	$309

Income Analysis

Total Customers	49,631
Avg Revenue/Customer	$309.00

Income Bracket	# Customers	
<30K	$314.00	>
30-50K	$304.00	>
50-80K	$298.00	>
80-100K	$311.00	>
>100K	$320.00	>

Figure 6-12. Microstrategy and alternate design (wirefram)

The overview should be simple and concise, and the table should be designed for an easy read. This example fromMicroStrategy is cramped, and the font is smaller than the recommended size for mobile. The alternative is easy to read and summarizes the key metrics at the top of the screen: Total Customers and Average Revenue per Customer.

Test the chart to see if people can answer three simple questions: what is the topic, what is the important information, what are the values for the important information.

Datapoint Details

Since onHover doesn't exist in mobile, a different interaction is needed to show details for a data point. In this example, touching the chart will display details about the page views for the selected date.

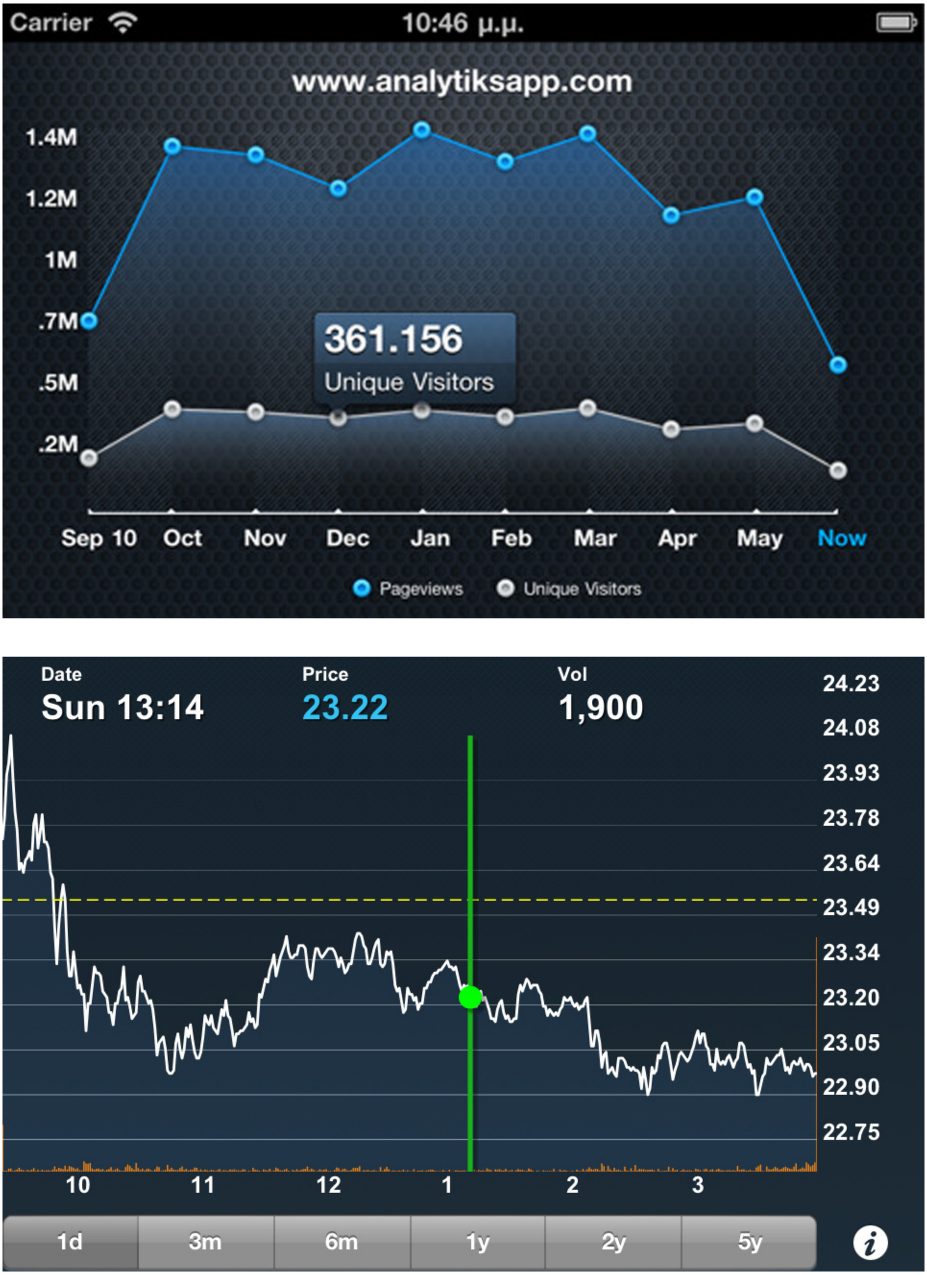


Figure 6-13. Analytiks and NASDAQ QMX

In these two example from NASDAQ QMX and Yahoo! Finance, the data point is also highlighted in the preview window at the bottom of the chart.

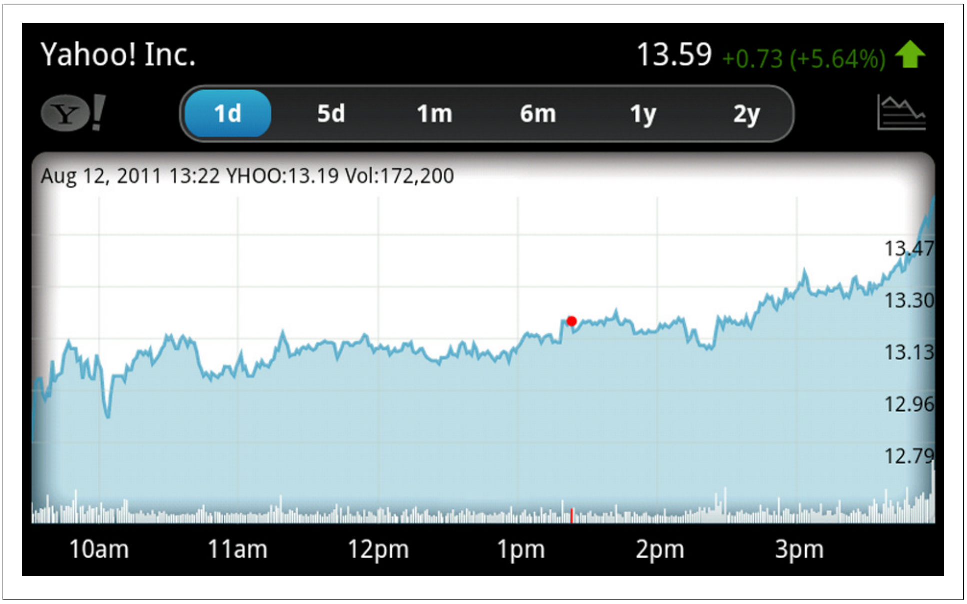
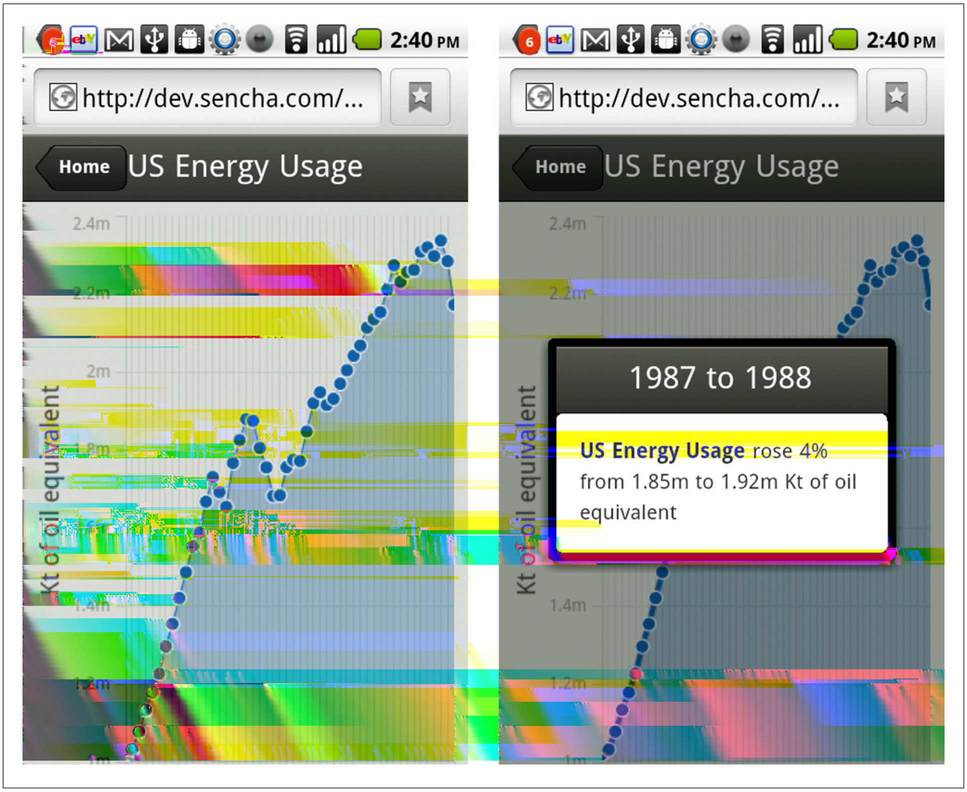


Figure 6-14. Yahoo! Finance

Providing the details in proximity to the datapoint is preferable over using a modal dialog like this Sencha Touch example.



1987 to 1988

US Energy Usage rose 4% from 1.85m to 1.92m Kt of oil equivalent

Figure 6-15. Sench Touch demo

Roambi offers a "detail mode" that can be accessed by tapping the + icon. The mode window or frame has a scrollbar for sliding to a certain datapoint. The folks at Roambi call this a "viewtron."

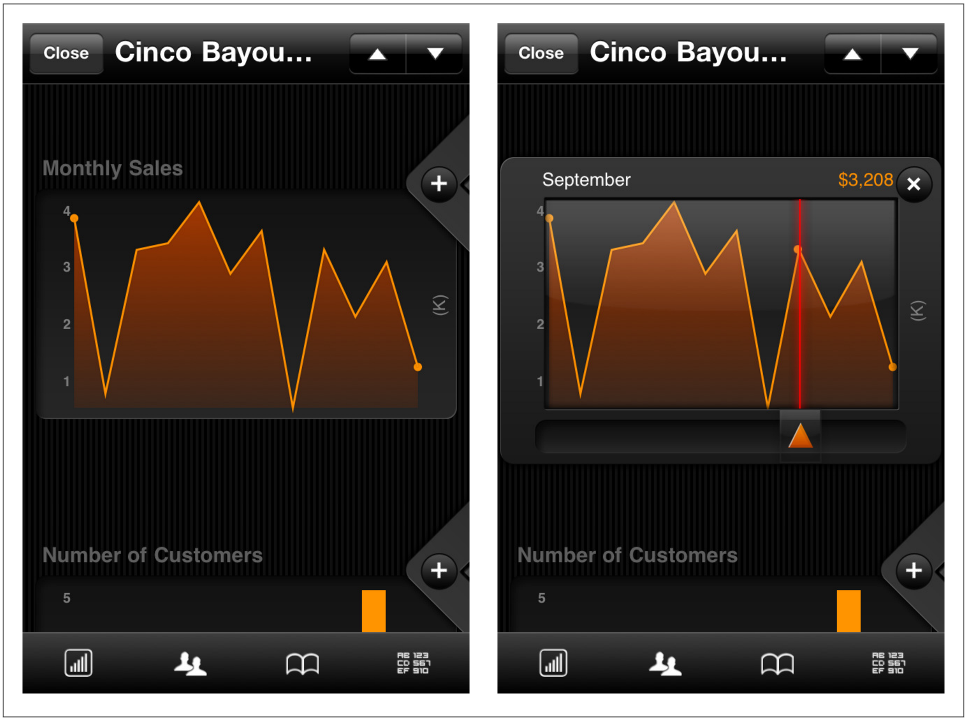


Figure 6-16. Roambi

Charts on the Web have created an expectation for details to be displayed onHover. Consider implementing datapoint details onTap to provide the additional information users want.

Drill Down

Following the usability maxim "let there be input where there is output." It makes sense that a user will want to tap on the chart to drill down into the data. Drill Down and Datapoint Details can't co-exist, so determine which feature provides the most value and then select the appropriate pattern.

The Adobe Flex Sales Dashboard application my team designed uses Drill Down to show the data "behind" the bars in the first chart. Clearly show the drill down path as part of the page or chart title. In this example, we also kept the coloring consistent throughout the drilling. Depending on the OS, a back button in the UI may also be necessary.

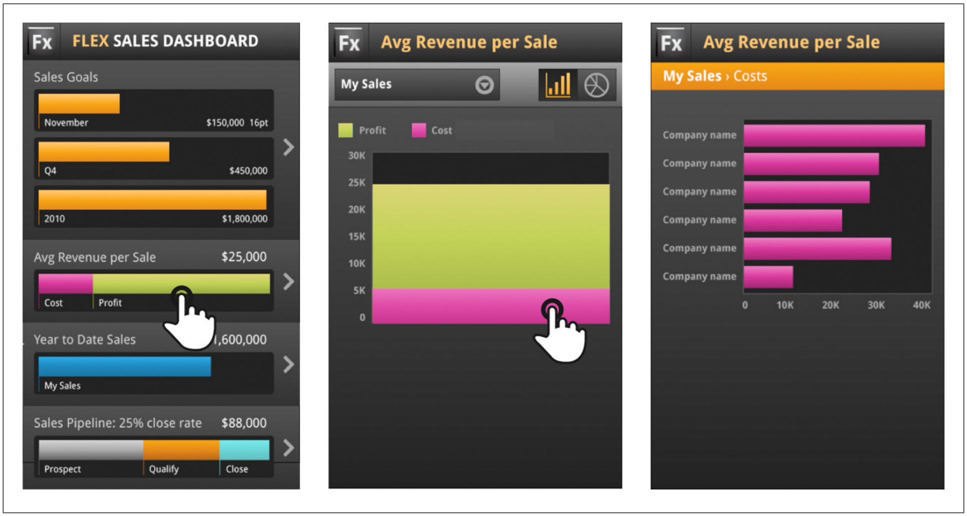


Figure 6-17. Adobe Flex Sales Dashboard reference application

An invitation should also be included to encourage first time users to tap to drill down, see Chapter 8. Roambi displays help text with instructions to "Touch any bar to view data."

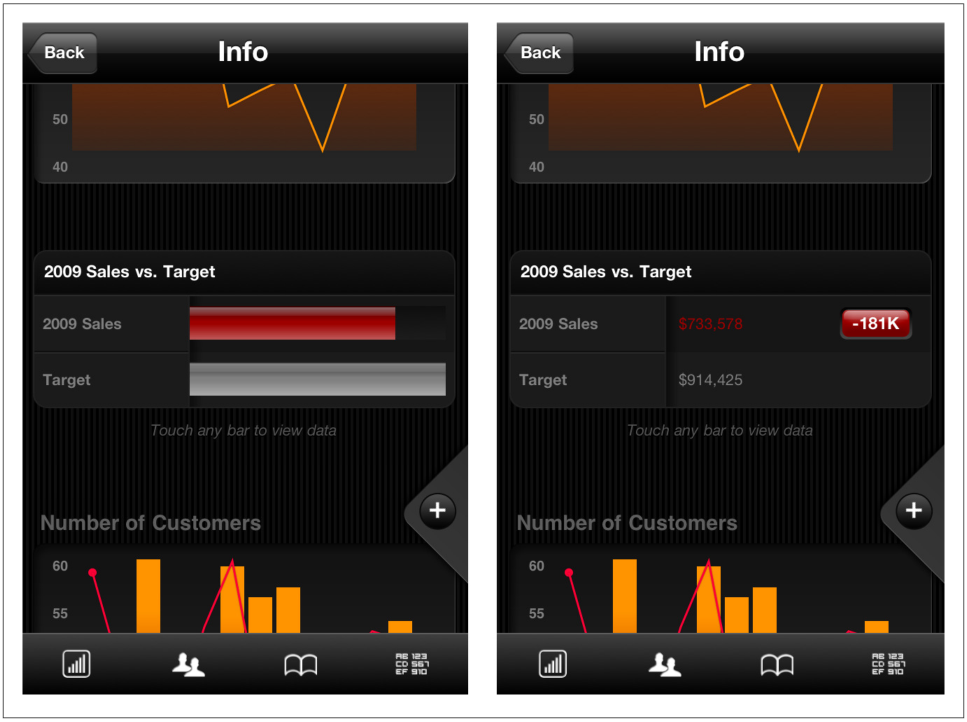
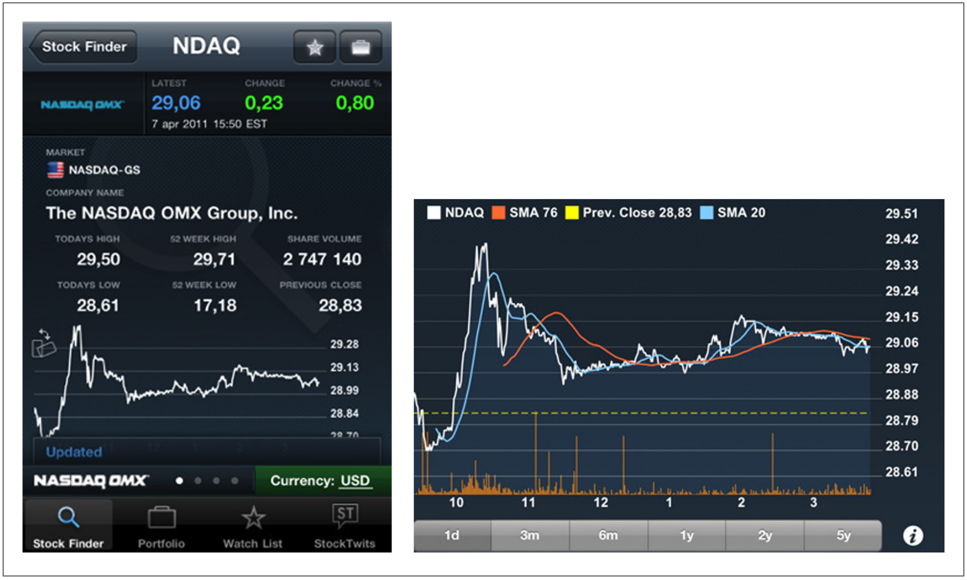


Figure 6-18. Roambi, invite to touch any bar to view data

Invite the user drill down for more data. Use breadcrumbs to show the hierarchy.

Zoom

The chart might be only one of many elements on the screen, making it too small to read easily. It is common practice to invite the user to rotate their phone for a fullscreen, landscape view. The title and navigation elements are hidden to give the chart as much space as possible. Rotating the device back to portrait restores the navigation and other controls.



LATEST 29,06 CHANGE 0,23 CHANGE % 0,80

7 apr 2011 15:50 EST

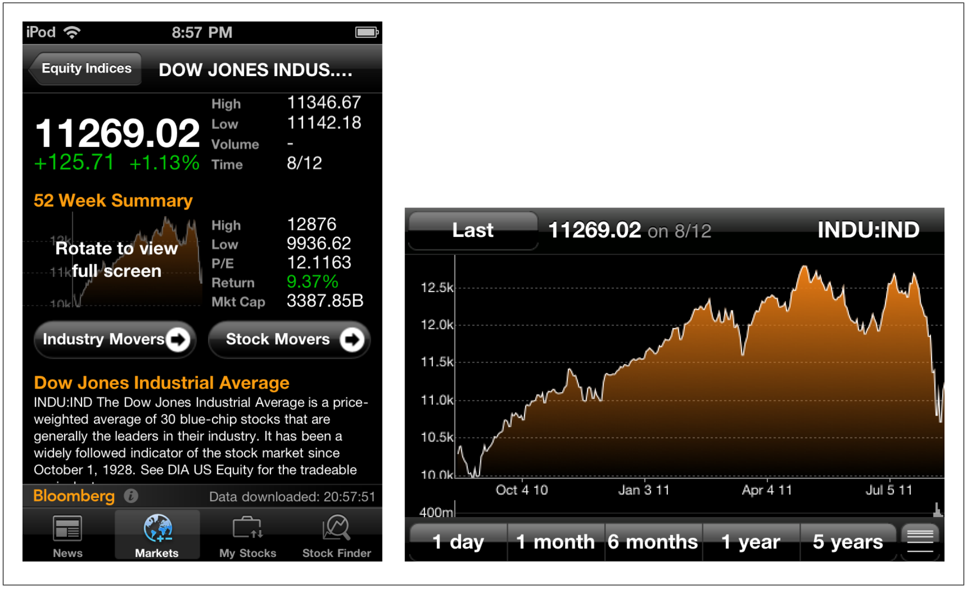
MARKET NASDAQ-GS

COMPANY NAME The NASDAQ OMX Group, Inc.

TODAYS HIGH	52 WEEK HIGH	SHARE VOLUME
29,50	29,71	2 747 140
TODAYS LOW	52 WEEK LOW	PREVIOUS CLOSE
28,61	17,18	28,83

Figure 6-19. NASDAQ QMX

It is important to provide an invitation to rotate the device for the immersive chart view. NASDAQ QMX (above) uses a little illustration of a rotated phone, whereas Bloomberg (below) uses a label telling users to "Rotate to View Full Screen." This invitation is displayed only when the chart is tapped.



11269.02 +125.71 +1.13%

High	11346.67
Low	11142.18
Volume	-
Time	8/12

52 Week Summary

High	12876
Low	9936.62
P/E	12.1163
Return	9.37%
Mkt Cap	3387.85B

Dow Jones Industrial Average

INDU:IND The Dow Jones Industrial Average is a price-weighted average of 30 blue-chip stocks that are generally the leaders in their industry. It has been a widely followed indicator of the stock market since October 1, 1928. See DIA US Equity for the tradeable

Data downloaded: 20:57:51

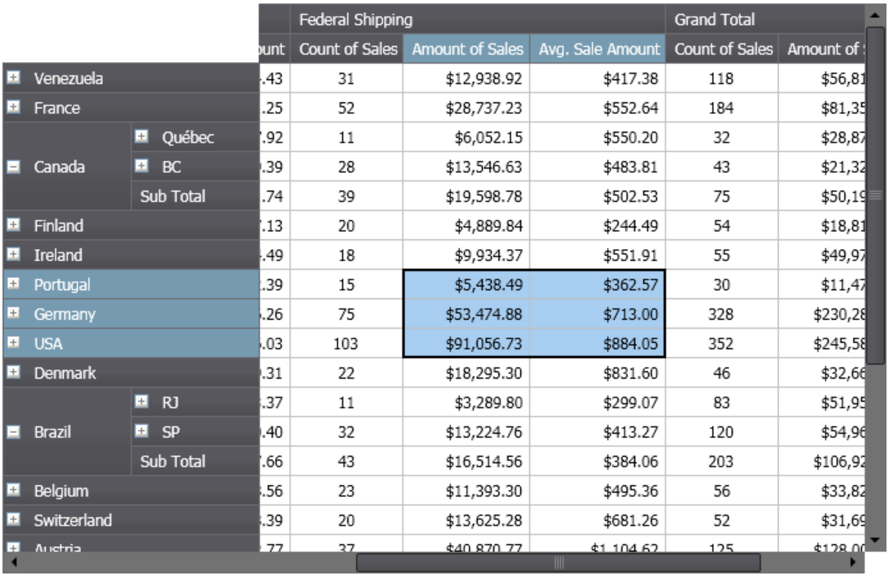
11269.02 on 8/12

Figure 6-20. Bloomberg

Invite the user to rotate to landscape for a full screen view; automatically restore navigation when the device rotates back to portrait.

Pivot Table

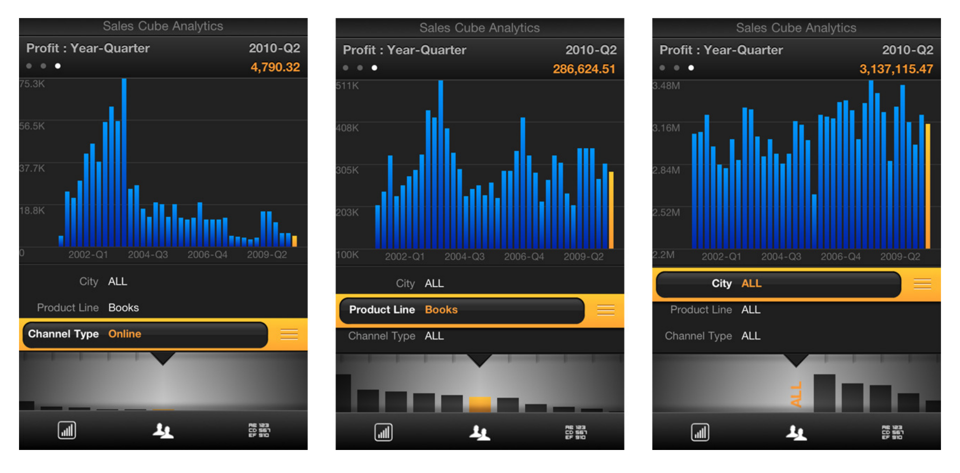
Pivot tables, also referred to as *OLAP cubes*, are useful for creating unweighted cross tabulations. In desktop and web applications, the user can set up and change the summary structure by dragging and dropping graphically. This “rotation” or pivoting of the summary table gives the concept its name. [Wikipedia]



			Federal Shipping			Grand Total	
		ount	Count of Sales	Amount of Sales	Avg. Sale Amount	Count of Sales	Amount of
⊞ Venezuela		.43	31	$12,938.92	$417.38	118	$56,81
⊞ France		.25	52	$28,737.23	$552.64	184	$81,35
⊟ Canada	⊞ Québec	.92	11	$6,052.15	$550.20	32	$28,87
	⊞ BC	.39	28	$13,546.63	$483.81	43	$21,32
	Sub Total	.74	39	$19,598.78	$502.53	75	$50,19
⊞ Finland		.13	20	$4,889.84	$244.49	54	$18,81
⊞ Ireland		.49	18	$9,934.37	$551.91	55	$49,97
⊞ Portugal		.39	15	$5,438.49	$362.57	30	$11,47
⊞ Germany		.26	75	$53,474.88	$713.00	328	$230,28
⊞ USA		.03	103	$91,056.73	$884.05	352	$245,58
⊞ Denmark		.31	22	$18,295.30	$831.60	46	$32,66
⊟ Brazil	⊞ RJ	.37	11	$3,289.80	$299.07	83	$51,95
	⊞ SP	.40	32	$13,224.76	$413.27	120	$54,96
	Sub Total	.66	43	$16,514.56	$384.06	203	$106,92
⊞ Belgium		.56	23	$11,393.30	$495.36	56	$33,82
⊞ Switzerland		.39	20	$13,625.28	$681.26	52	$31,69
⊞ Austria		.77	37	$40,870.77	$1,104.62	125	$128,00

Figure 6-21. Viblend Pivot Table control for Microsoft Silverlight

Roambi has developed a simple interface for exploring data in a style similar to a pivotal table. The y-axis remains fixed; however, any dimension can be selected for the x-axis (see highlighted orange frame). For each dimension, a specific category can also be selected. This example shows how easy it is to explore the Year by Quarter Profit of All Cities, and then quickly refine the chart to just see this info for a specific Product Line: Books. With one more selection, the chart now shows information for All Cities, Books, via the Online Channel.



City ALL
Product Line Books
Channel Type Online

City ALL
Product Line Books
Channel Type ALL

City ALL
Product Line ALL
Channel Type ALL

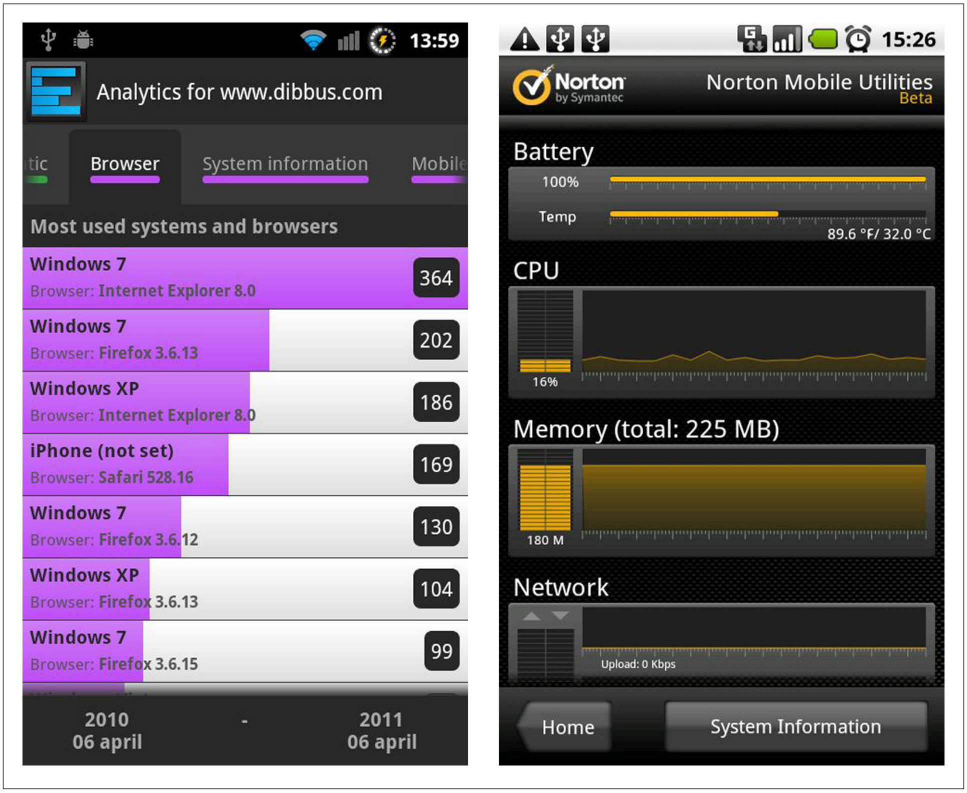
Figure 6-22. Roambi

Keep the pivot table selection and resulting chart in a single screen. Apply the selections dynamically.

Sparklines

Sparklines, also called *microcharts*, are defined as an “information graphic characterized by its small size and high data density. Sparklines present trends and variations associated with some measurement, such as average temperature or stock market activity, in a simple and condensed way.” [Wikipedia]

Sparklines are particularly well suited for mobile since they provide an overview of the shape or state of the data, but don’t require the space of a full chart.



Most used systems and browsers

Windows 7 Browser: Internet Explorer 8.0	364
Windows 7 Browser: Firefox 3.6.13	202
Windows XP Browser: Internet Explorer 8.0	186
iPhone (not set) Browser: Safari 528.16	169
Windows 7 Browser: Firefox 3.6.12	130
Windows XP Browser: Firefox 3.6.13	104
Windows 7 Browser: Firefox 3.6.15	99

Figure 6-23. Analytix for Google Analytics and Norton Mobile Utilities

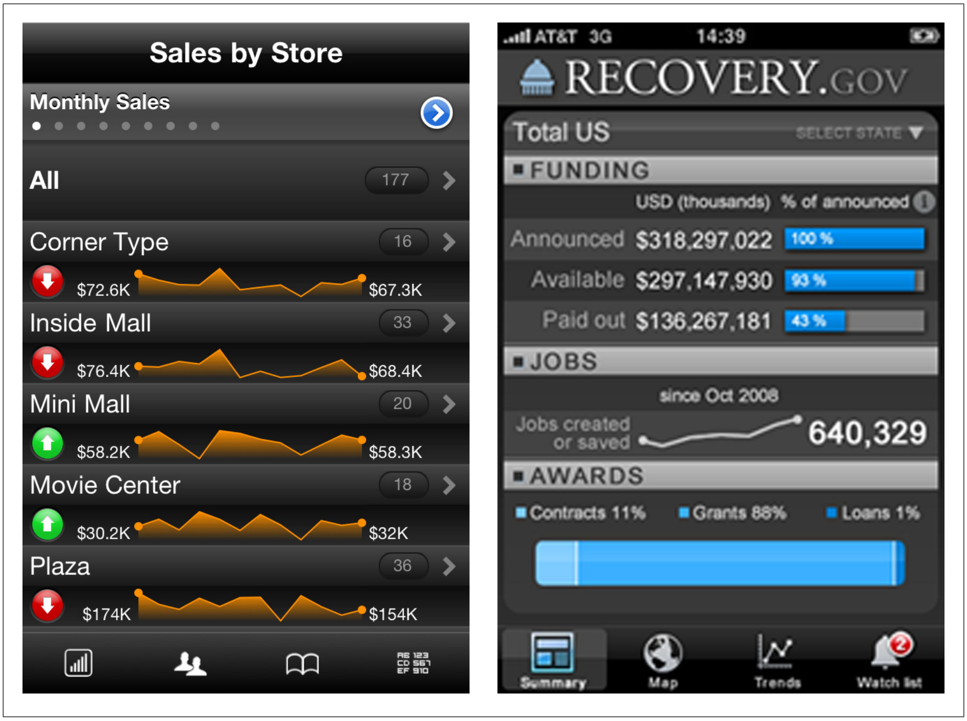


Figure 6-24. Roambi and Recover.gov

Follow sparkline design conventions. Validate the designs with your users. Consider combining Sparklines plus the Drill Down pattern to reveal the full chart details.

CHAPTER 7
Invitations

Patterns: Dialog, Tip, Tour, Demo, Transparency, 1st Time Through, Persistent, Discoverable

Do you remember the first time you used Photoshop? I remember opening the application and seeing a blank canvas and a vast array of powerful tools.

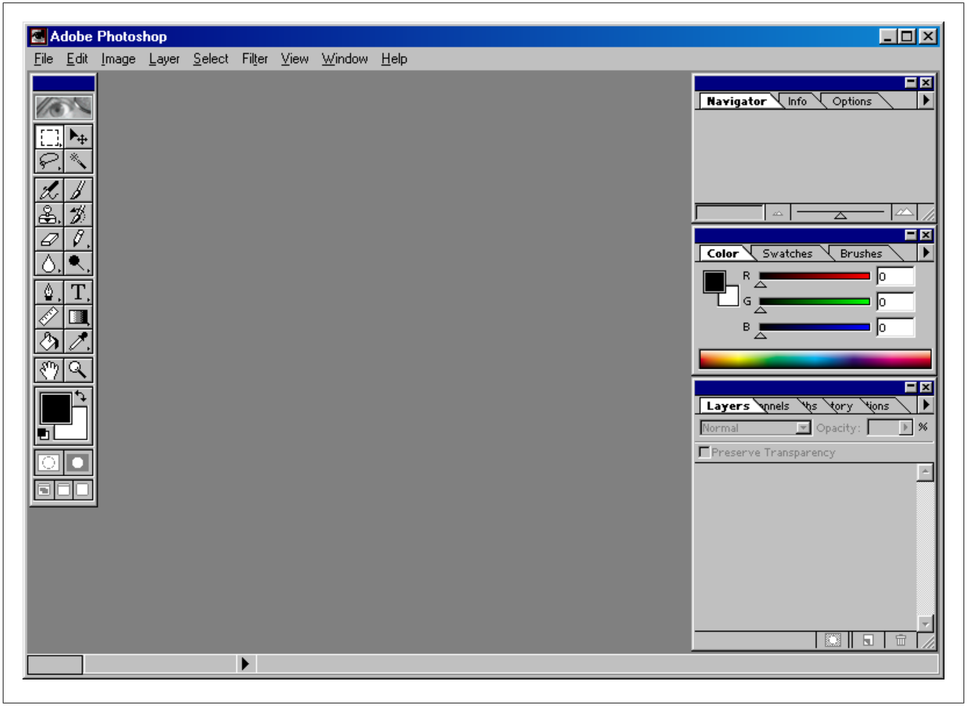


Figure 7-1. Photoshop 5.5

Well, I assumed the tools were powerful, but didn't know for sure. In fact, I didn't know how to get started at all. But I had quite a bit of money invested in the software and needed to learn it for work. So I bought *Sam's Teach Yourself Photoshop 5 in 24 Hours*, by Carla Rose and started learning.

Fast forward a decade or so. There are hundreds of thousands of mobile applications readily available in the marketplace. In any one category there are dozens of apps for the same purpose. Many of them are free, making it just as practical to download and try another app as it is to struggle for 5 minutes with an unintuitive interface.

Consider the initial experience with Layar Reality Browser, an augmented reality app.

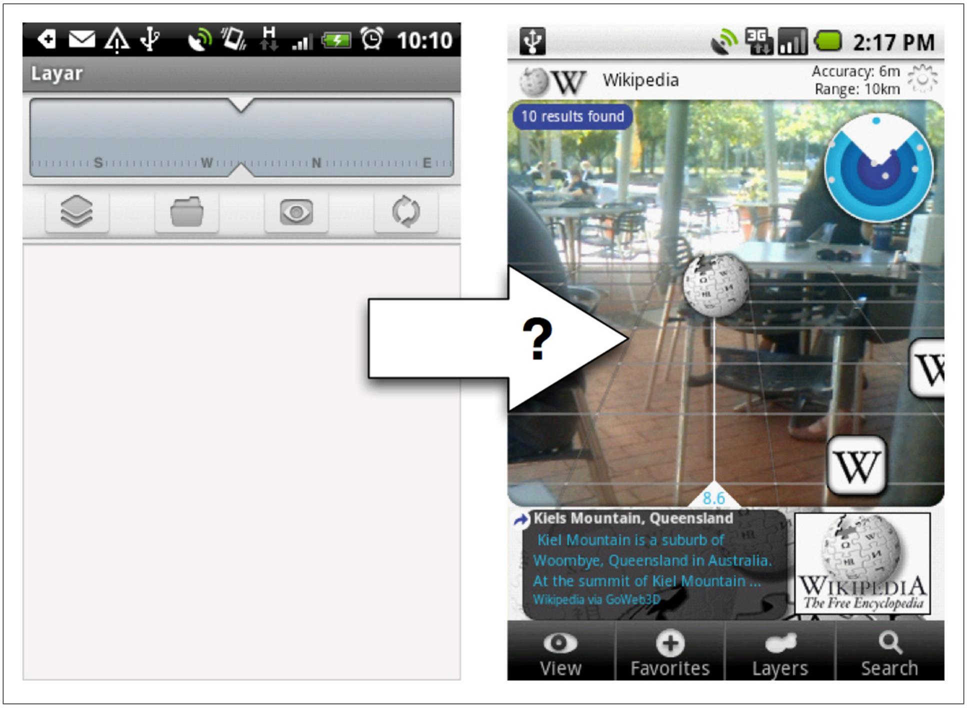


Figure 7-2. Layar Reality Browser

What would help me get from this gray screen to augmented reality? An invitation. Invitations are helpful tips that are displayed the first time a user opens an application or arrives at a new place. They suggest actions and guide the user to the intended functionality. A simple invitation can turn an otherwise discouraging first time experience into a satisfying one.

Mobile Invitation patterns include:

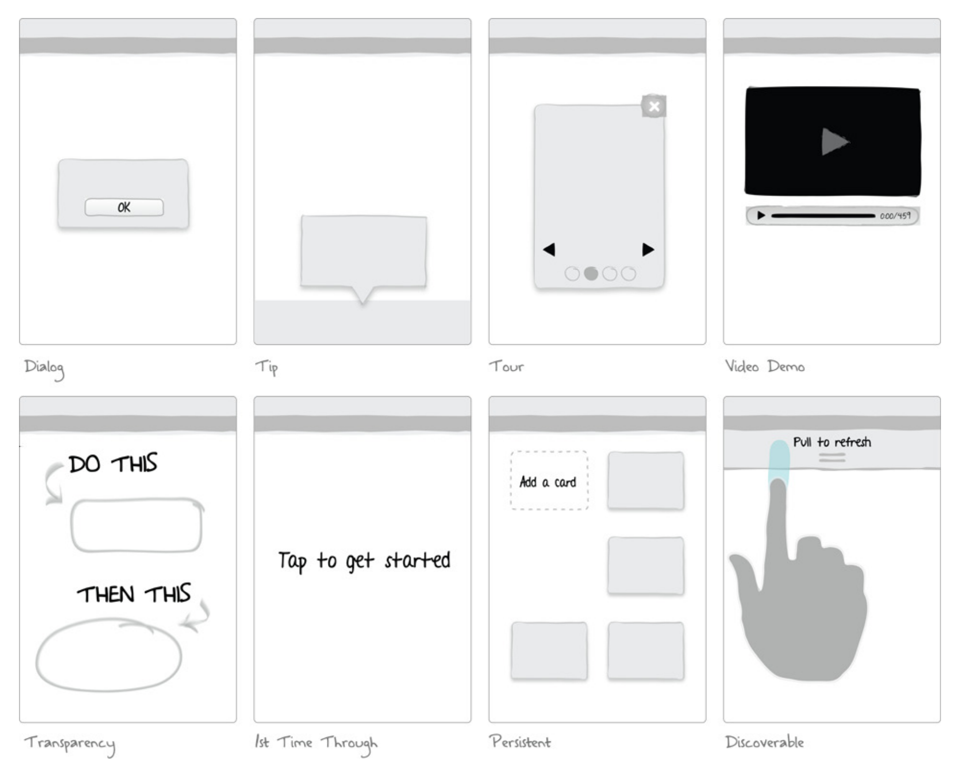
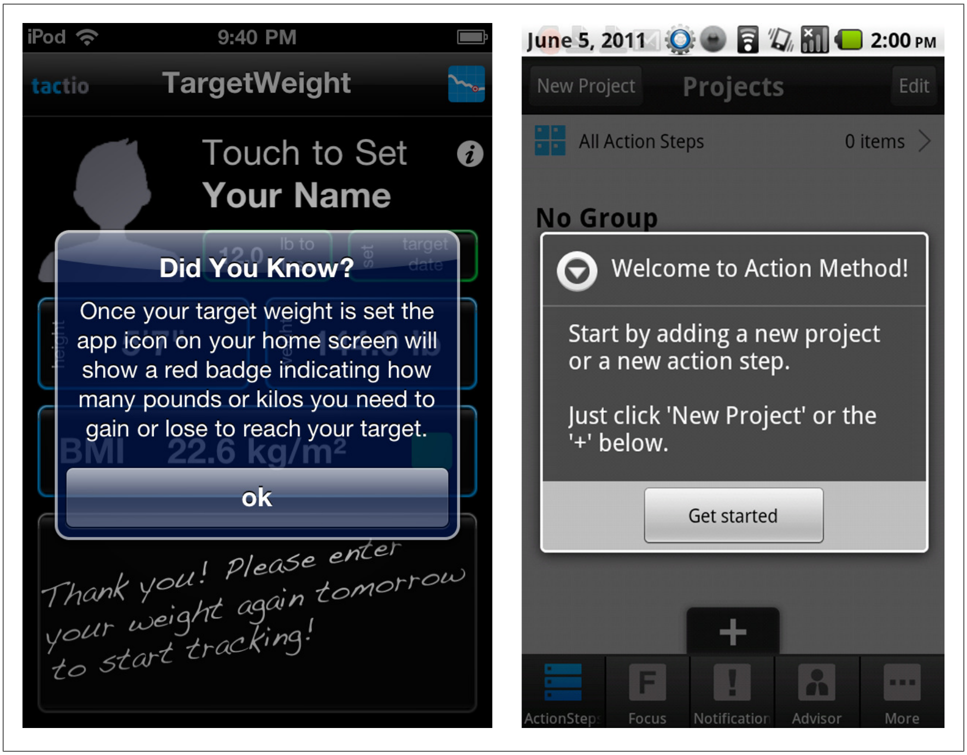


Figure 7-3. Patterns for Invitations

Dialog

A simple dialog with instructions is the most common type of invitation in mobile apps, probably because it is the easiest to program. It is also most likely to be dismissed and ignored.



Did You Know?

Once your target weight is set the app icon on your home screen will show a red badge indicating how many pounds or kilos you need to gain or lose to reach your target.

Thank you! Please enter your weight again tomorrow to start tracking!

Welcome to Action Method!

Start by adding a new project or a new action step.

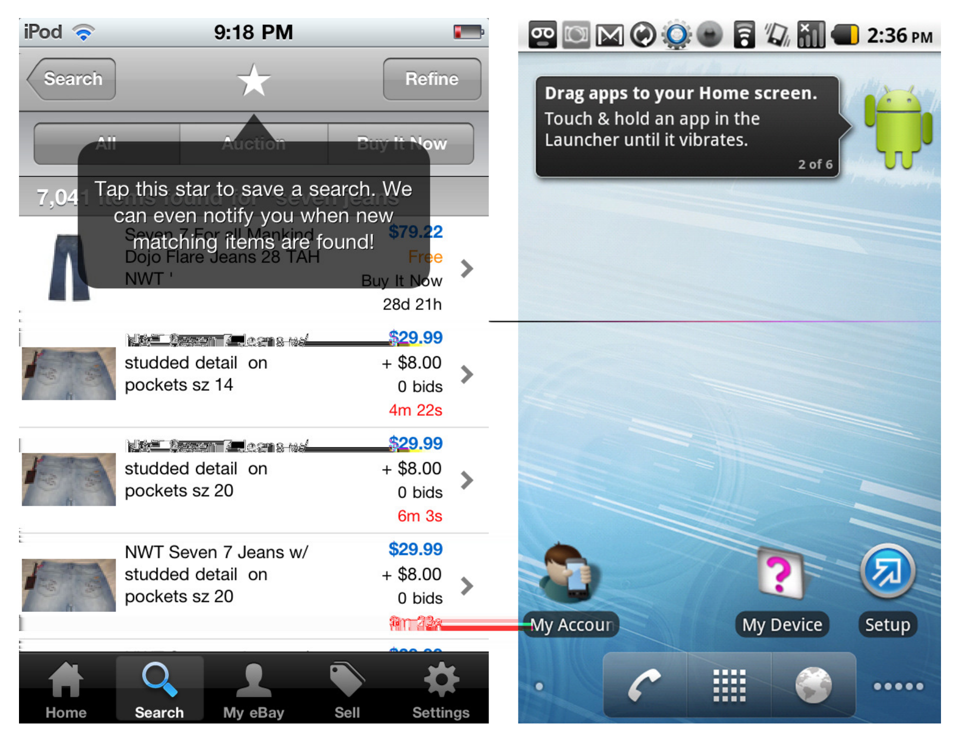
Just click 'New Project' or the '+' below.

Figure 7-4. Target Weight and ActionMethod

Keep dialog content short, and make sure there is an alternate way to access instructions from within the application.

Tip

A tip can be implemented anywhere in the screen, making it more contextually relevant than a dialog. And tips can be used on any screen, not just the home screen. In the eBay app, a tip is used to draw attention to the "save a search" feature, which could otherwise be overlooked since it is where the page title is normally displayed.



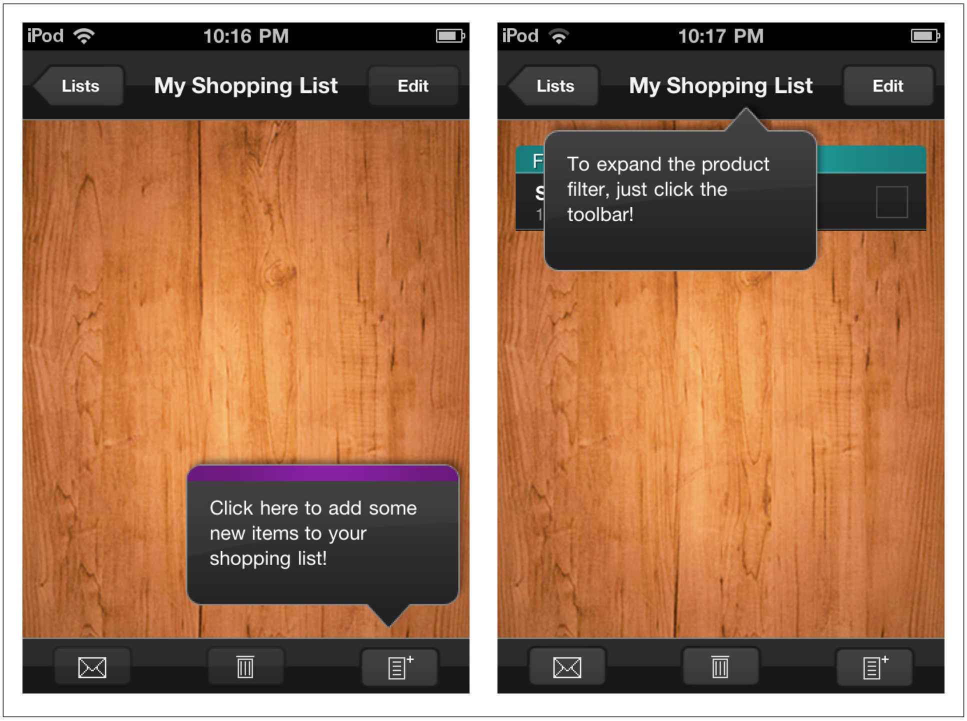
Tap this star to save a search. We can even notify you when new matching items are found!

Drag apps to your Home screen.
Touch & hold an app in the Launcher until it vibrates.
2 of 6

iPod
9:18 PM
Search
Refine
All
Auction
Buy It Now
7,041 items found for "seven jeans"
Seven 7 For all Mankind Dojo Flare Jeans 28 TAH NWT
$79.22
Free
Buy It Now
28d 21h
studded detail on pockets sz 14
$29.99
+ $8.00
0 bids
4m 22s
studded detail on pockets sz 20
$29.99
+ $8.00
0 bids
6m 3s
NWT Seven 7 Jeans w/ studded detail on pockets sz 20
$29.99
+ $8.00
0 bids
Home
Search
My eBay
Sell
Settings
2:36 PM
My Accour
My Device
Setup

Figure 7-5. eBay and Android OS

ShoppingList reveals tips in each main section of their application.



Click here to add some new items to your shopping list!

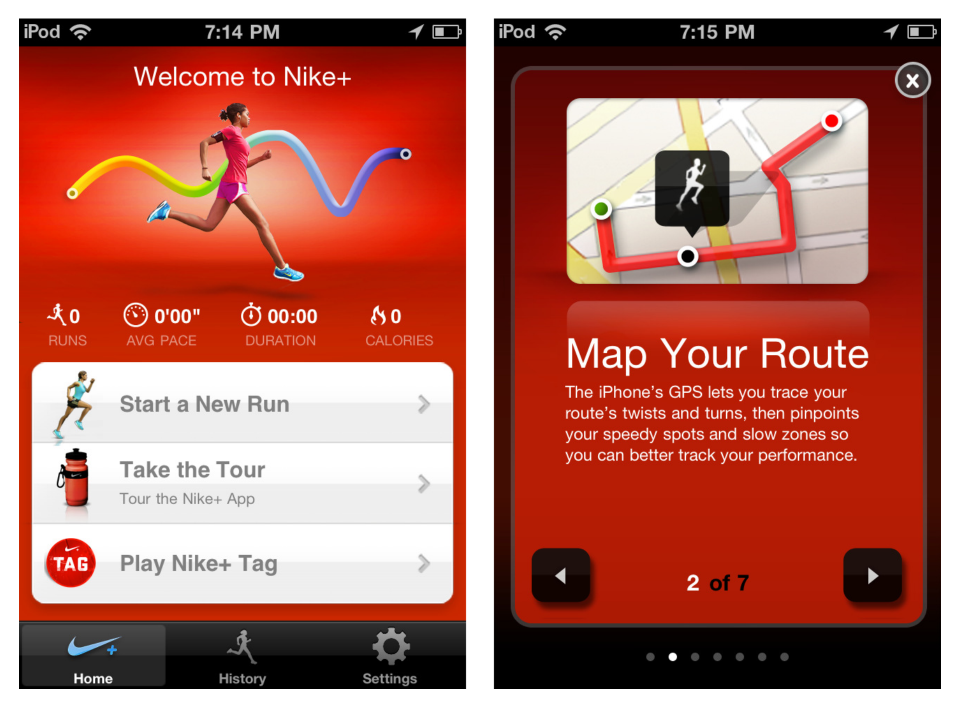
To expand the product filter, just click the toolbar!

Figure 7-6. Shoppng List

Place tips in proximity to the feature they refer to, keep the content short, and remove the tip once interaction begins (i.e., when the screen is touched).

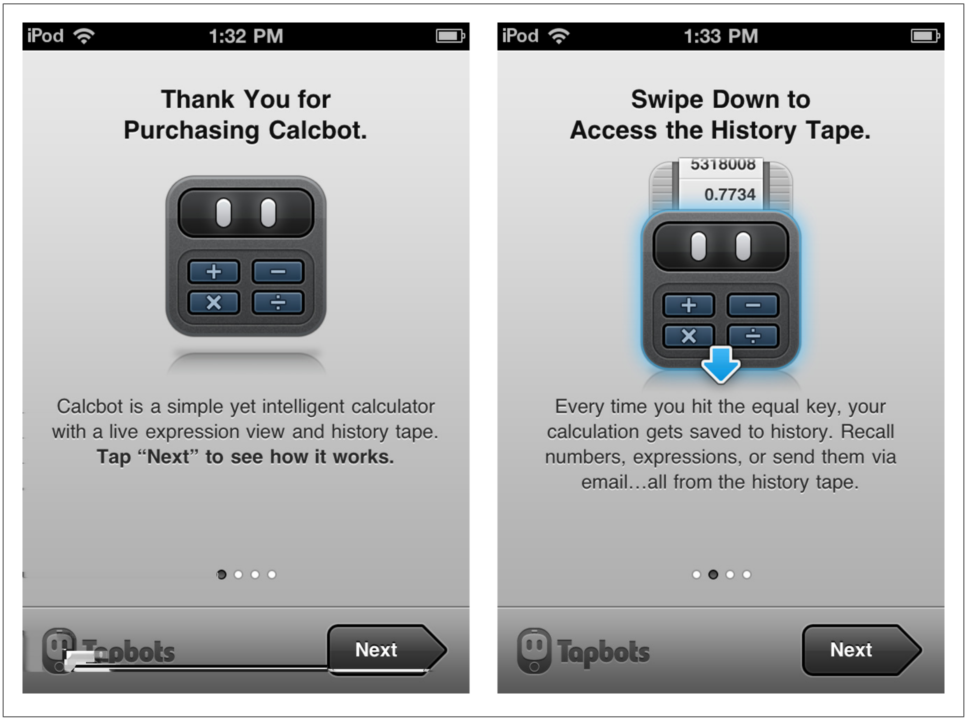
Tour

A tour provides the ultimate invitation by offering a screen-by-screen, feature-by-feature exploration of the application. The Nike GPS tour is an excellent example of this pattern. The tour is optimized for mobile with concise copy, vivid graphics, simple navigation, and a clearly marked exit. The Tour is offered on the home screen, and once launched you can tap through each of the seven tips. Nike and CalcBot use page *indicators*, Apple's term for the little dots, to indicate the current step in the tour.



The iPhone's GPS lets you trace your route's twists and turns, then pinpoints your speedy spots and slow zones so you can better track your performance.

Figure 7-7. Nike GPS



iPod 1:32 PM

Thank You for Purchasing Calcbot.

Calcbot is a simple yet intelligent calculator with a live expression view and history tape. **Tap "Next" to see how it works.**

iPod 1:33 PM

Swipe Down to Access the History Tape.

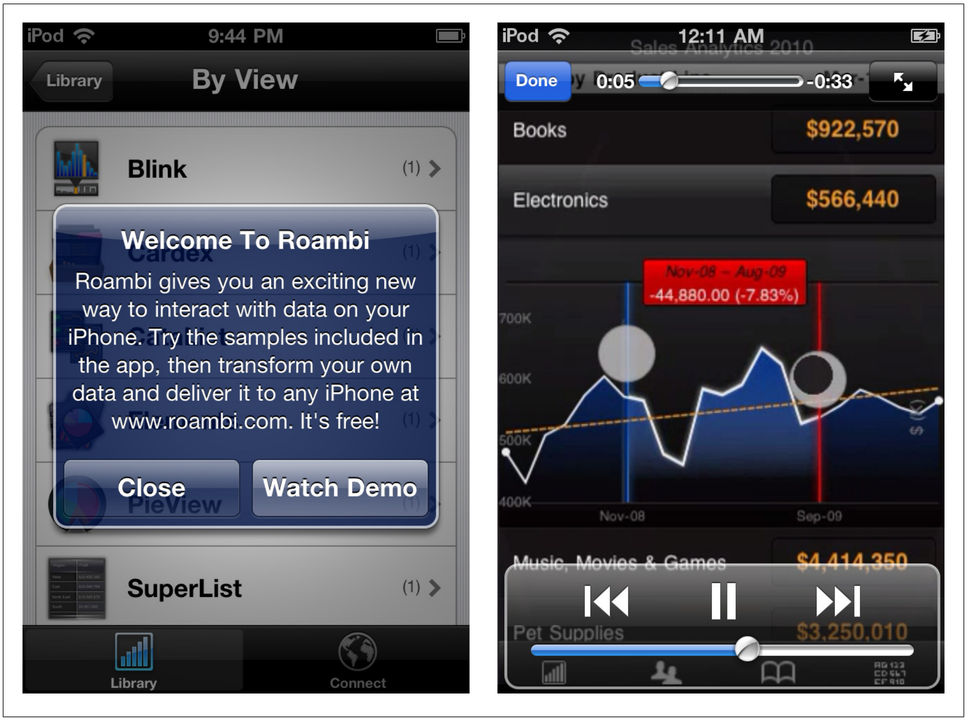
Every time you hit the equal key, your calculation gets saved to history. Recall numbers, expressions, or send them via email…all from the history tape.

Figure 7-8. CalcBot

A tour should highlight key features of the application, preferably from a (user) goal perspective. Keep it short and visually engaging.

Video Demo

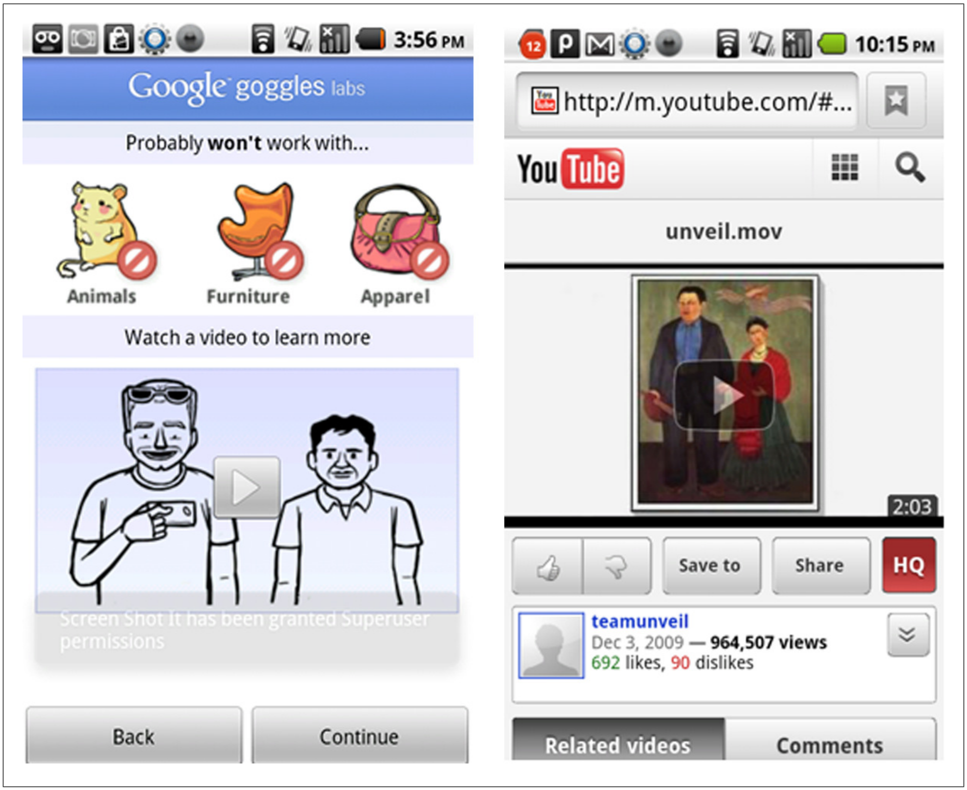
A video demo may be the best form of invitation for applications that rely on specific actions/interactions since it demonstrates the application in action. Roambi uses a custom demo to showcase its wide selection of data visualizations and the use of certain gestures for optimal navigation and exploration. Google Goggles has a demo in their tour that can be opened and viewed in YouTube.



Welcome To Roambi

Roambi gives you an exciting new way to interact with data on your iPhone. Try the samples included in the app, then transform your own data and deliver it to any iPhone at www.roambi.com. It's free!

Figure 7-9. Roambi



Probably **won't** work with...

Watch a video to learn more

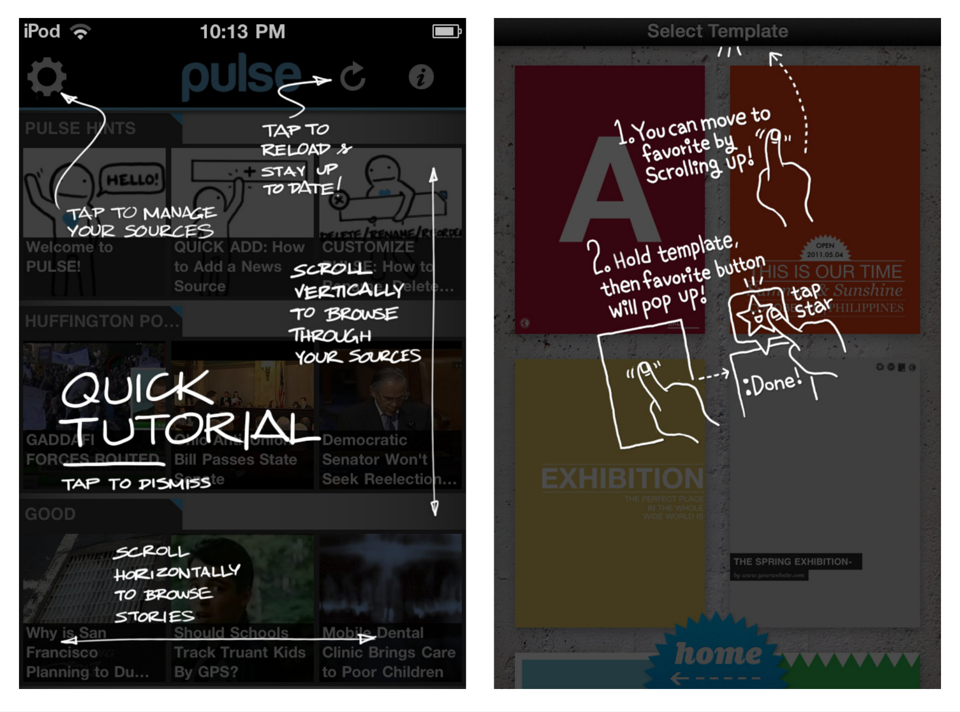
Screen Shot It has been granted Superuser permissions

Figure 7-10. Google Goggles

Demos should showcase key features or show how to use the application from a standard workflow perspective. Common video features (stop, pause, volume controls...) should be provided.

Transparency

While the rest of these patterns exist on the Web, the transparency is unique to touchscreen devices (so far). Typically seen on home screens, a transparency is a see-through layer with a usage diagram positioned over the actual screen content. Pulse and Phoster both use this invitation pattern to quickly and visually explain how to navigate content in the apps.


iPod
10:13 PM
pulse
PULSE HINTS
HELLO!
Welcome to PULSE!
QUICK ADD: How to Add a News Source
CUSTOMIZE
HUFFINGTON PO...
GADDAFI FORCES ROUTED
Bill Passes State Senate
Democratic Senator Won't Seek Reelection...
GOOD
Why is San Francisco Planning to Du...
Should Schools Track Truant Kids By GPS?
Mobile Dental Clinic Brings Care to Poor Children
Select Template
EXHIBITION
THE SPRING EXHIBITION-
THIS IS OUR TIME
home

TAP TO MANAGE YOUR SOURCES

TAP TO RELOAD & STAY UP TO DATE!

SCROLL VERTICALLY TO BROWSE THROUGH YOUR SOURCES

QUICK TUTORIAL

TAP TO DISMISS

SCROLL HORIZONTALLY TO BROWSE STORIES

1. You can move to favorite by Scrolling up!

2. Hold template, then favorite button will pop up!

tap star

:Done!

Figure 7-11. Pulse and Phoster

Transparencies should be used judiciously and are not meant to compensate for poor screen designs. Remove the transparency once interaction begins (i.e., when the screen is touched).

1st Time Through

Unlike the other invitations, 1st Time Through invitations don't precede the screen they refer to. 1st Time Through invitations are built into the screen design. They remain in the interface until they are overwritten with content or the action is performed. Many note taking apps, like Mini Diary and PageOnce, use 1st Time Through invitations to immediately engage the user to add content.

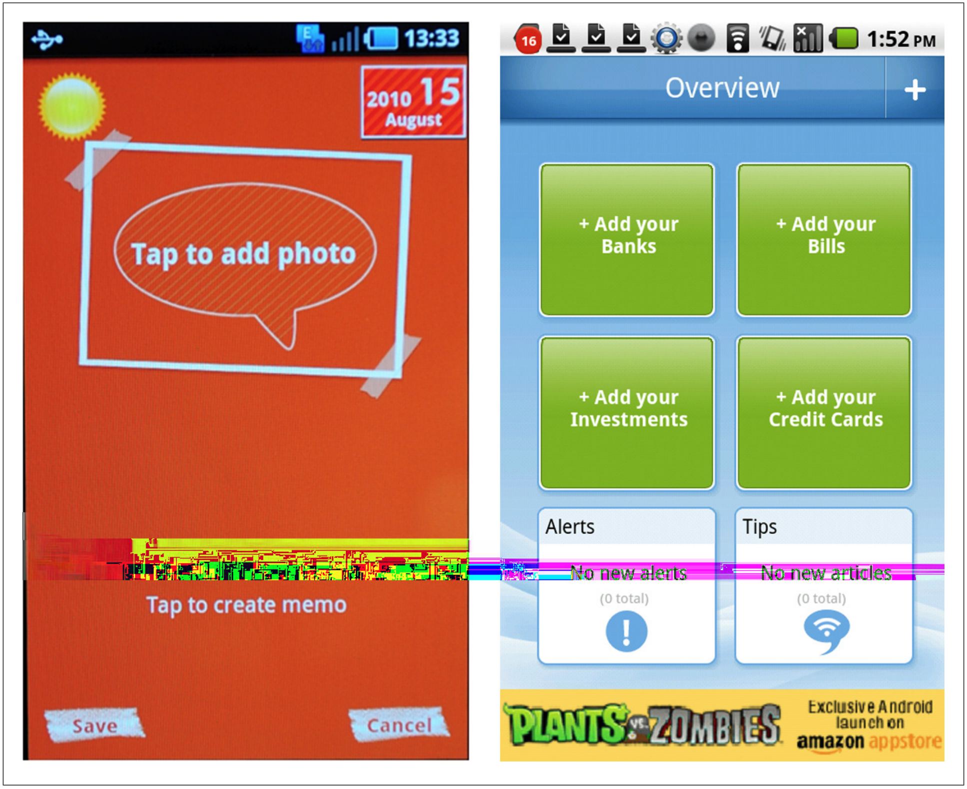
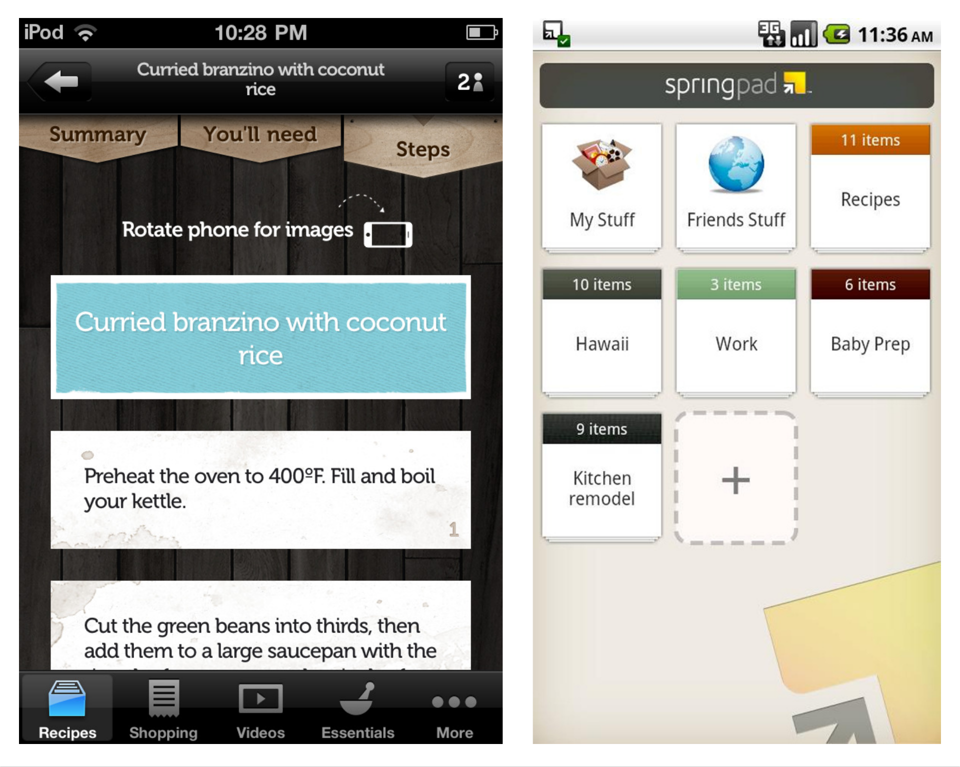


Figure 7-12. Mini Diary and PageOnce

Clearly differentiate the invitation from other content with images or other visual cues (i.e., don't use the same color and size text for the invitation as is used for regular content).

Persistent

Persistent invitations are built into the screen and remain visible. This example from Jamie Oliver Recipes suggests switching to landscape mode to uncover an additional feature. Whether this is your first time on this screen, or 10th time, the prompt is still displayed. Spring Pad uses an embedded, persistent invitation to show that more notes can be added by tapping on the "+".



Preheat the oven to 400ºF. Fill and boil your kettle.

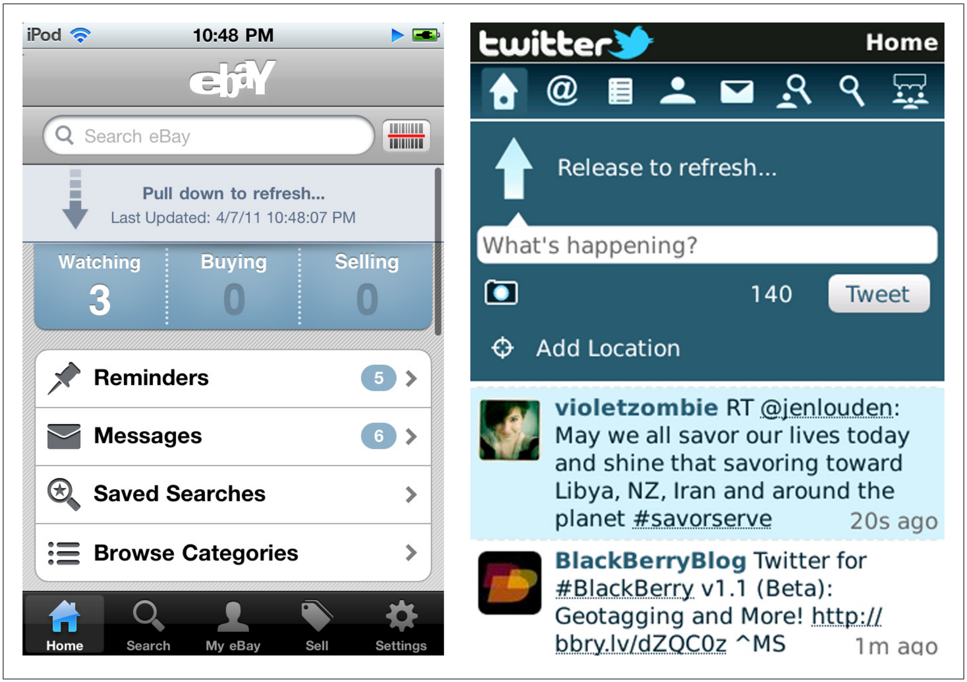
Cut the green beans into thirds, then add them to a large saucepan with the

Figure 7-13. Jamie Oliver Recipes and Spring Pad

Keep it short. Clearly differentiate the invitation from other content with images or other visual cues (i.e., don't use the same color and size text for the invitation as is used for regular content).

Discoverable

A discoverable invitation might seem like an oxymoron, but it is an effective way to encourage specific interactions without cluttering the screen. These invitations are meant to be discovered when performing a common gesture, like flicking or swiping.



Pull down to refresh...
Last Updated: 4/7/11 10:48:07 PM

Release to refresh...

violetzombie RT @jenlouden: May we all savor our lives today and shine that savoring toward Libya, NZ, Iran and around the planet #savorserve 20s ago

BlackBerryBlog Twitter for #BlackBerry v1.1 (Beta): Geotagging and More! http://bbry.lv/dZQC0z ^MS 1m ago

Figure 7-14. eBay and Twitter

Use Discoverable invitations sparingly. The most common instance of this pattern is for prompting a data refresh.

CHAPTER 8

Feedback & Affordance

Feedback Patterns: Errors, Confirmation, System Status

Affordance Patterns: Tap, Flick, Drag

Feedback

The usability principle of feedback states "Provide appropriate, clear, and timely feedback to the user so that he sees the results of his actions and knows what is going on with the system." Feedback can vary from simple progress indicators and confirmation messages, to more sophisticated animations and effects. Mobile feedback patterns include:

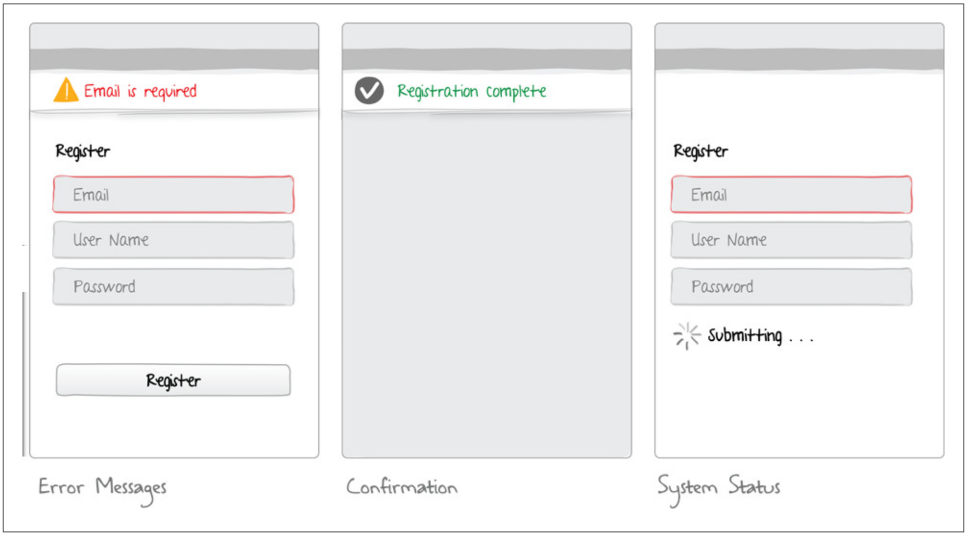
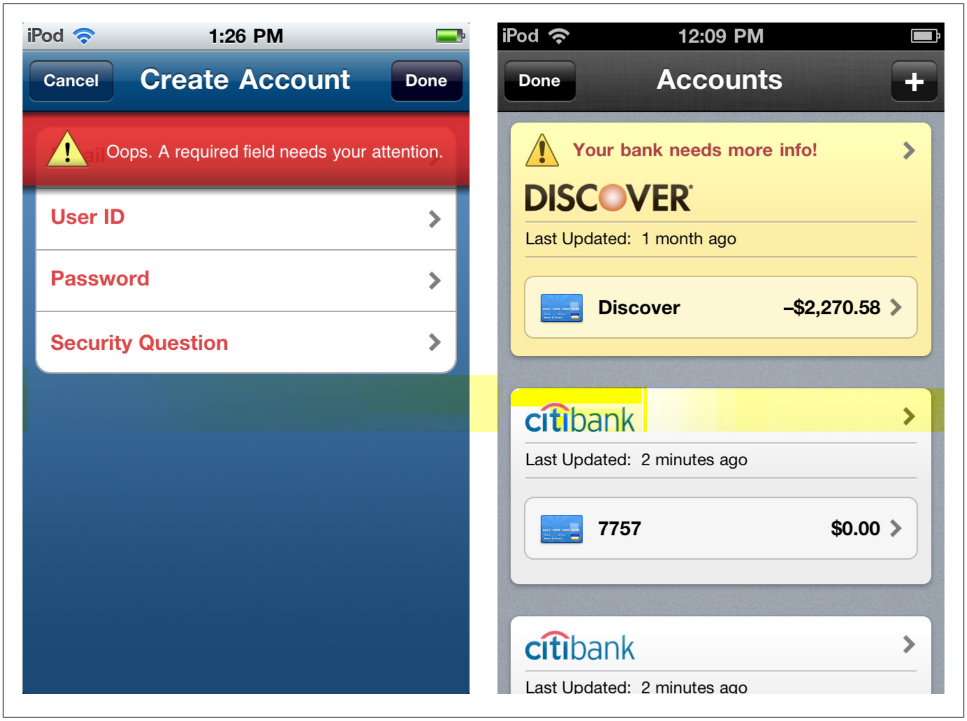


Figure 8-1. Feedback patterns

Error Messages

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution. Highly visible error messages on the screen, like TaxCaster and Mint, are preferable to a modal dialog, since a dialog may cover up the issue.



Oops. A required field needs your attention.

Your bank needs more info!

Last Updated: 1 month ago

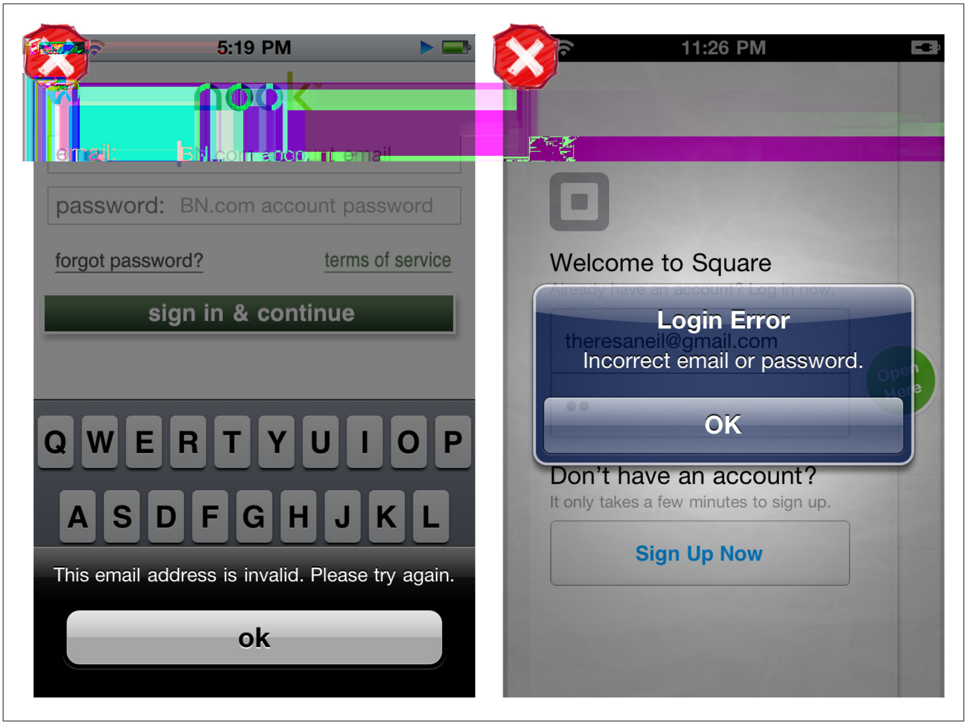
Discover –$2,270.58

Last Updated: 2 minutes ago

7757 $0.00

Last Updated: 2 minutes ago

Figure 8-2. TaxCaster and Mint



This email address is invalid. Please try again.

Login Error

Incorrect email or password.

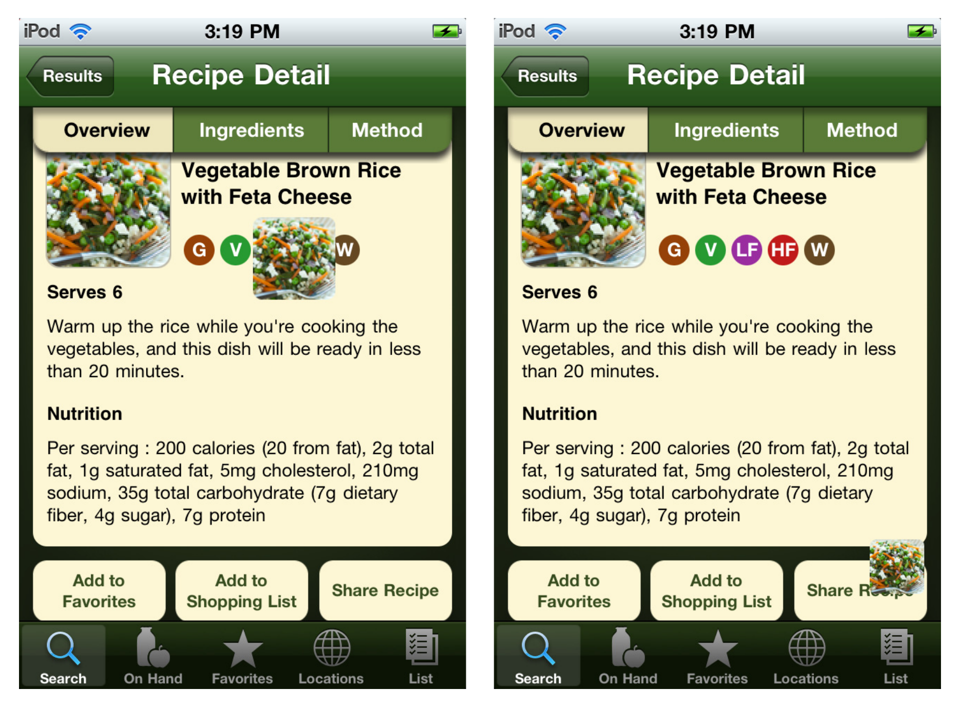
Figure 8-3. Barnes & Noble Nook, error message in Action Sheet; Square, error message in dialog

Use plain language that offers a solution for resolving the issue. Make the error visible; use in-screen messaging instead of modal dialogs.

Confirmation

Confirmation should be provided when an action is taken. But avoid the Idiot Box antipattern (see Chapter 10), and instead look for a way to provide feedback without disrupting the user flow.

For example, Whole Foods and Sprout both use animation to show when an item has been added to a list. Upon tapping the add button, the item "falls" into the list object on the tab bar.



Vegetable Brown Rice with Feta Cheese

Serves 6

Warm up the rice while you're cooking the vegetables, and this dish will be ready in less than 20 minutes.

Nutrition

Per serving : 200 calories (20 from fat), 2g total fat, 1g saturated fat, 5mg cholesterol, 210mg sodium, 35g total carbohydrate (7g dietary fiber, 4g sugar), 7g protein

Vegetable Brown Rice with Feta Cheese

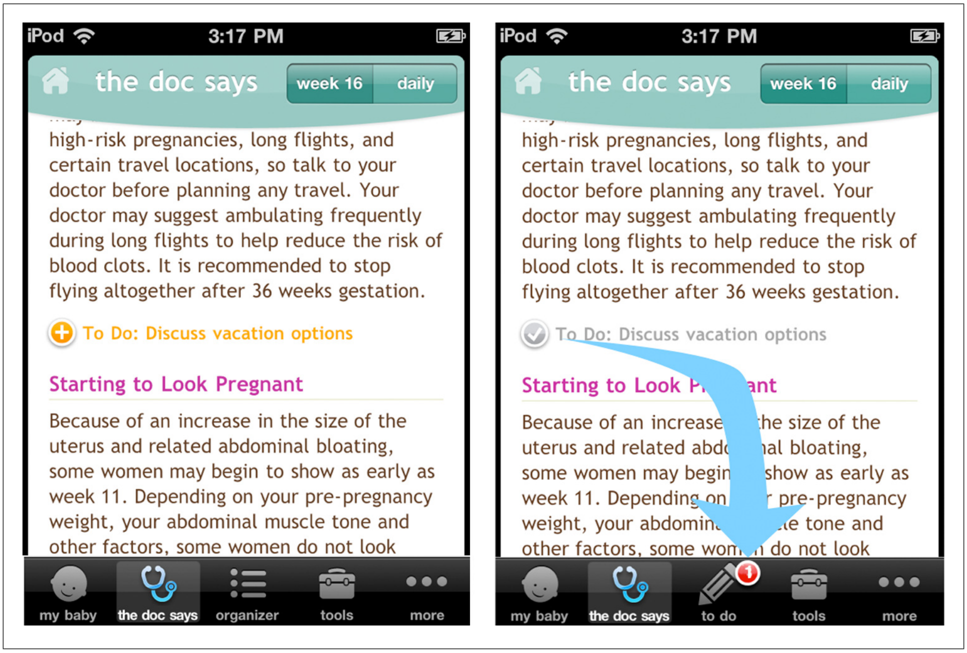
Serves 6

Warm up the rice while you're cooking the vegetables, and this dish will be ready in less than 20 minutes.

Nutrition

Per serving : 200 calories (20 from fat), 2g total fat, 1g saturated fat, 5mg cholesterol, 210mg sodium, 35g total carbohydrate (7g dietary fiber, 4g sugar), 7g protein

Figure 8-4. Whole Foods



high-risk pregnancies, long flights, and certain travel locations, so talk to your doctor before planning any travel. Your doctor may suggest ambulating frequently during long flights to help reduce the risk of blood clots. It is recommended to stop flying altogether after 36 weeks gestation.

To Do: Discuss vacation options

Starting to Look Pregnant

Because of an increase in the size of the uterus and related abdominal bloating, some women may begin to show as early as week 11. Depending on your pre-pregnancy weight, your abdominal muscle tone and other factors, some women do not look

high-risk pregnancies, long flights, and certain travel locations, so talk to your doctor before planning any travel. Your doctor may suggest ambulating frequently during long flights to help reduce the risk of blood clots. It is recommended to stop flying altogether after 36 weeks gestation.

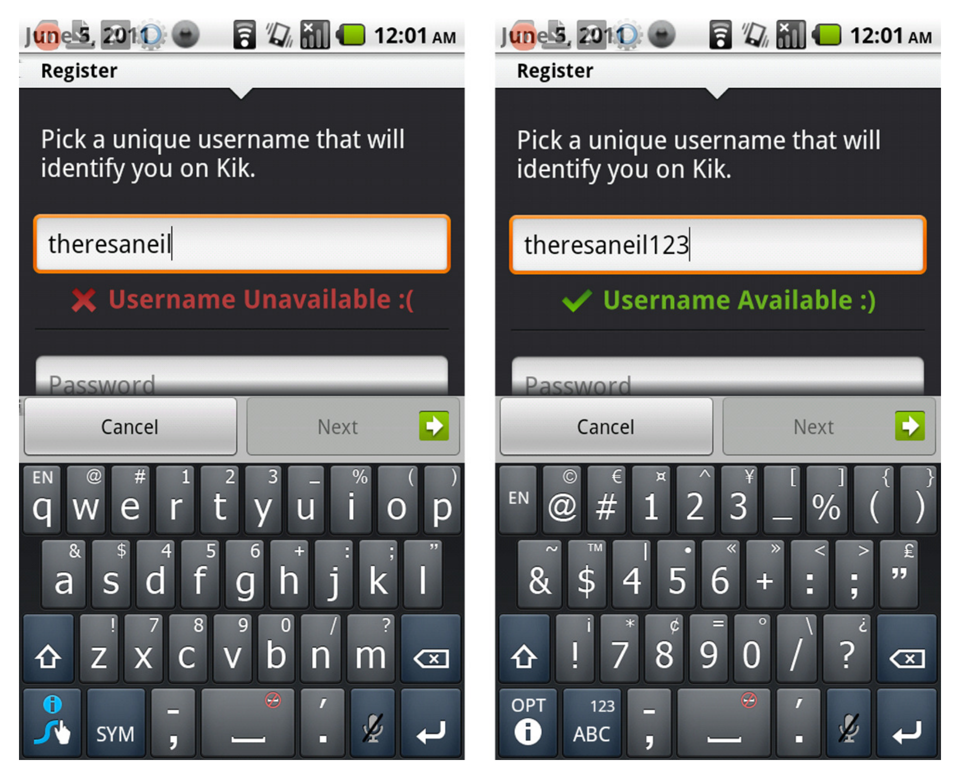
To Do: Discuss vacation options

Starting to Look P ant

Because of an increase he size of the uterus and related abd al bloating, some women may begin show as early as week 11. Depending on r pre-pregnancy weight, your abdomin e tone and other factors, some wom n do not look

Figure 8-5. Sprout

Inline feedback as seen in Kik, and State Changing buttons as seen in the Android Marketplace, are other unobtrusive ways to provide confirmation without interrupting the flow.



June 5, 2011 12:01 AM

Register

Pick a unique username that will identify you on Kik.

theresaneil

✗ Username Unavailable :(

Password

June 5, 2011 12:01 AM

Register

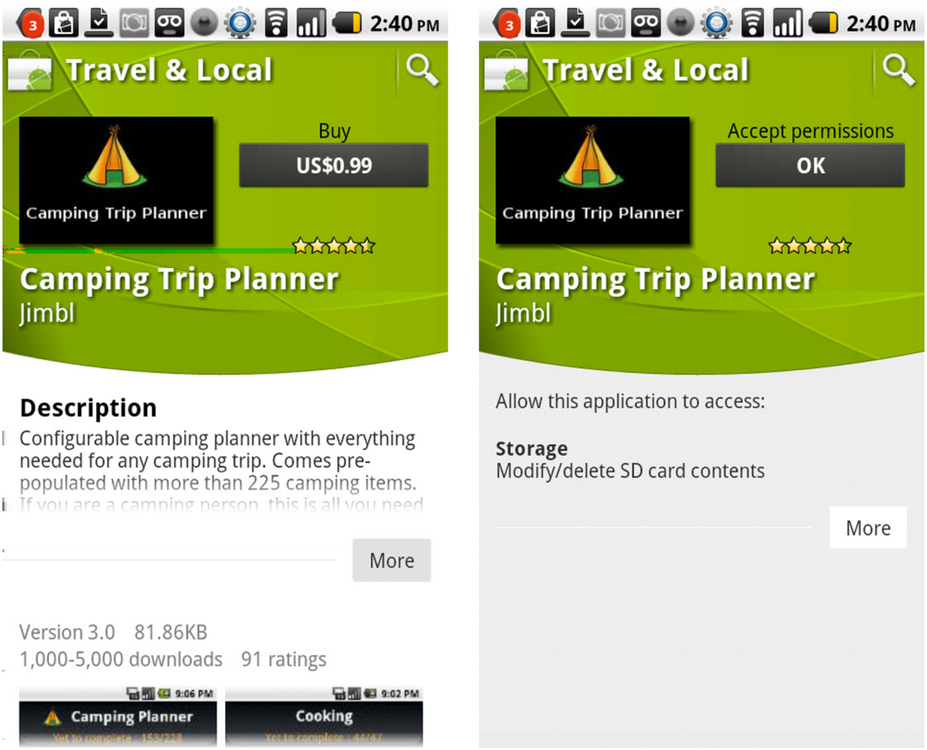
Pick a unique username that will identify you on Kik.

theresaneil123

✓ Username Available :)

Password

Figure 8-6. kik



Description

Configurable camping planner with everything needed for any camping trip. Comes pre-populated with more than 225 camping items. If you are a camping person, this is all you need

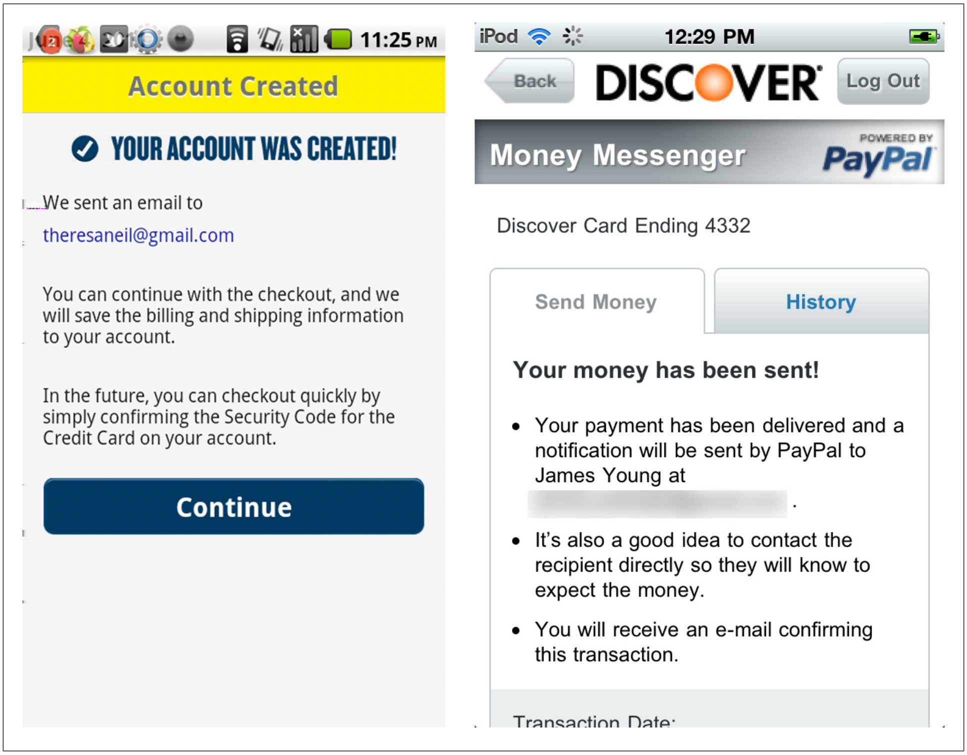
Version 3.0 81.86KB
1,000-5,000 downloads 91 ratings

Allow this application to access:

Storage
Modify/delete SD card contents

Figure 8-7. Android Marketplace

Sometimes confirmation messages need to be prominently displayed, like at the end of a transaction or when information is submitted.



YOUR ACCOUNT WAS CREATED!

We sent an email to theresaneil@gmail.com

You can continue with the checkout, and we will save the billing and shipping information to your account.

In the future, you can checkout quickly by simply confirming the Security Code for the Credit Card on your account.

Discover Card Ending 4332

Your money has been sent!

- Your payment has been delivered and a notification will be sent by PayPal to James Young at [redacted].
- It's also a good idea to contact the recipient directly so they will know to expect the money.
- You will receive an e-mail confirming this transaction.

Transaction Date:

Figure 8-8. Best Buy and Discover card

Provide confirmation when an action is taken, but don't break the user's flow to do so.

System Status

Timely feedback increases users' confidence with an application. Netflix shows that they are "Loading your queue..." instead of leaving one to wonder if the app is frozen. System Status can be portrayed with a simple message, and animated indictor, a loading bar, or combination of elements. The status can be integrated in the page like Netflix, Android Marketplace, and PageOnce, or in an overlay like TaxCaster.

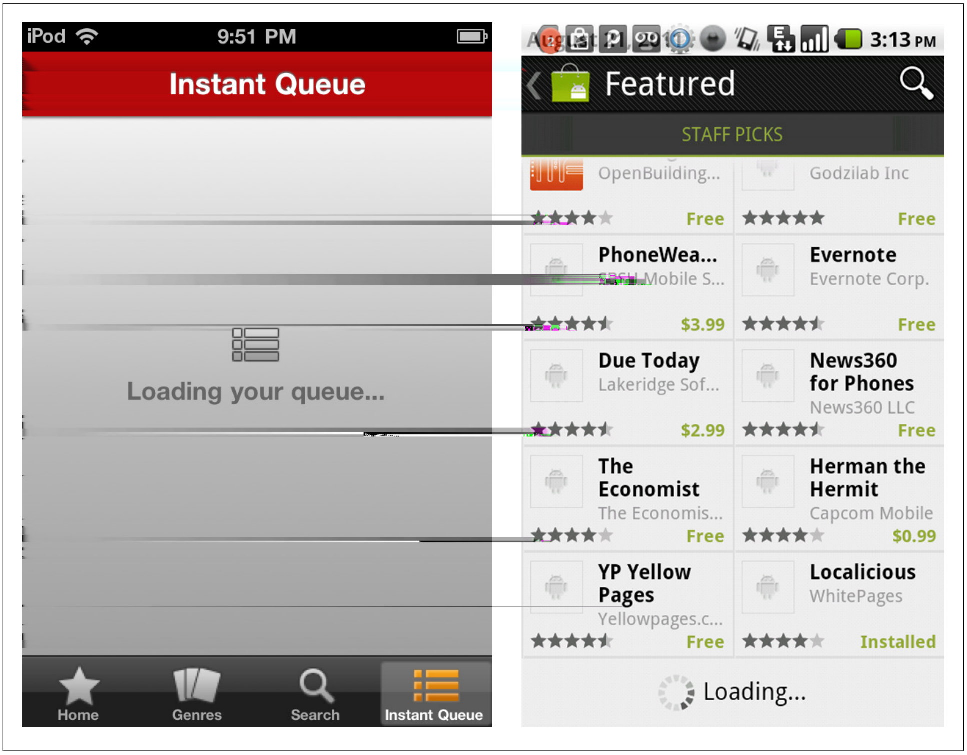
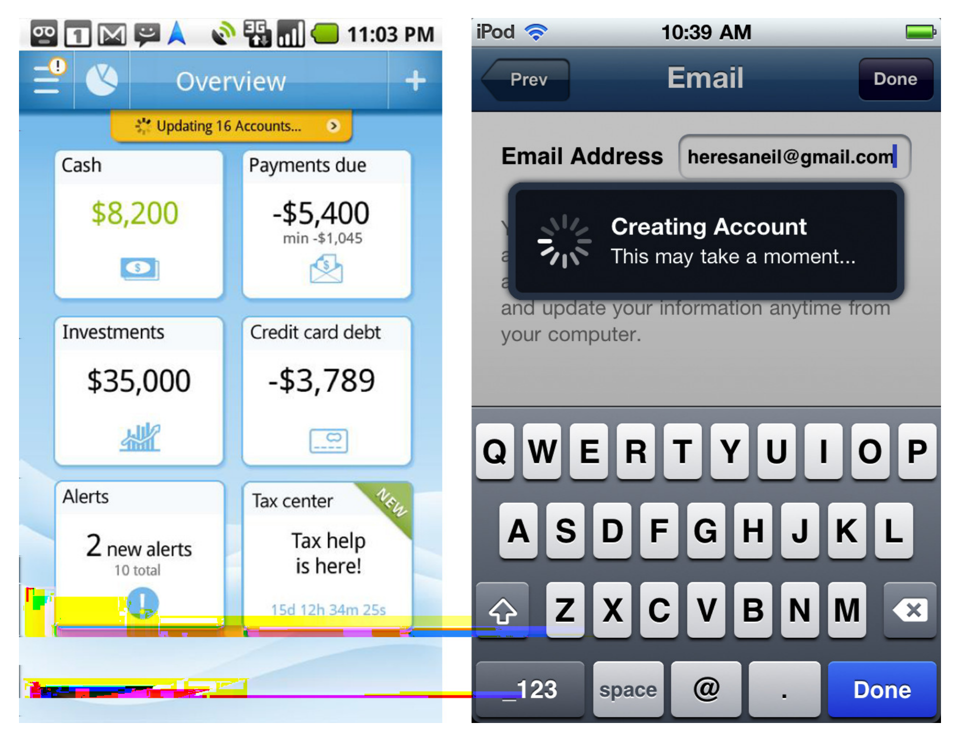


Figure 8-9. Netflix and Android Marketplace



Email Address heresaneil@gmail.com

Creating Account
This may take a moment...

and update your information anytime from your computer.

Figure 8-10. PageOnce and TaxCaster

Kayak uses a progress bar to show the status of flight results. Notice the different treatment in the iOS application and the Android application.

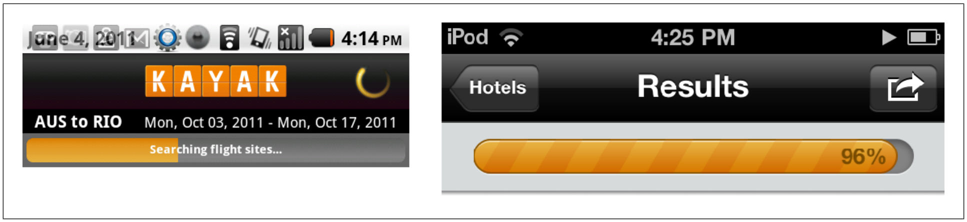
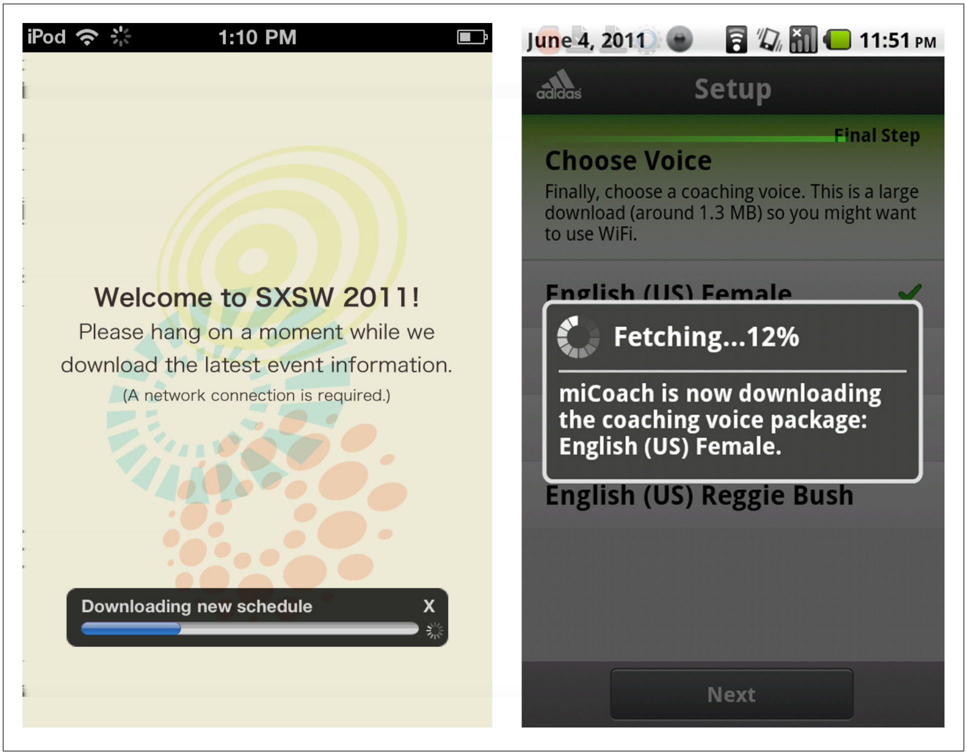

June 4, 2011
4:14 PM
KAYAK
AUS to RIO
Mon, Oct 03, 2011 - Mon, Oct 17, 2011
Searching flight sites...
iPod
4:25 PM
Hotels
Results
96%

Figure 8-11. Kayak on Android and on iOS

For potentially lengthy processes, offer a cancel button, like the SXSW app does for downloading the new schedule. The Adidas miCoach app offers a warning upfront about the file size, but should offer a cancel option as well.



Welcome to SXSW 2011!

Please hang on a moment while we download the latest event information.

(A network connection is required.)

Choose Voice

Finally, choose a coaching voice. This is a large download (around 1.3 MB) so you might want to use WiFi.

Fetching...12%

miCoach is now downloading the coaching voice package: English (US) Female.

Figure 8-12. SXSW and Adidas miCoach

Provide feedback about the system's status. Offer a cancel option for potentially lengthy operations.

Affordance

Affordance is the quality of an object that allows an individual to perform an action, like a handle on a drawer or knob on a door. Common examples in software include: drag handles, page peels, 3D controls like buttons and sliders.

Mobile applications can leverage the same patterns. Here are a few common patterns found on touchscreen UIs:

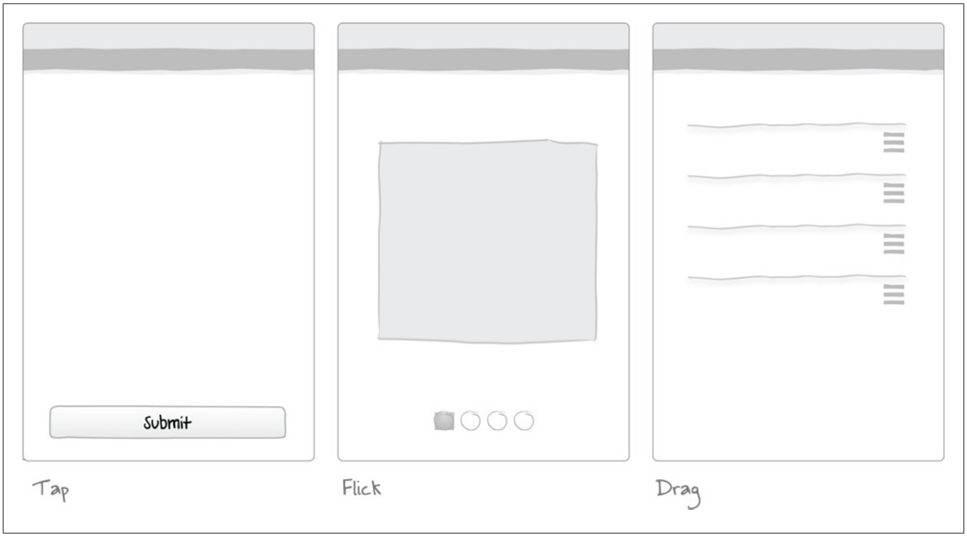
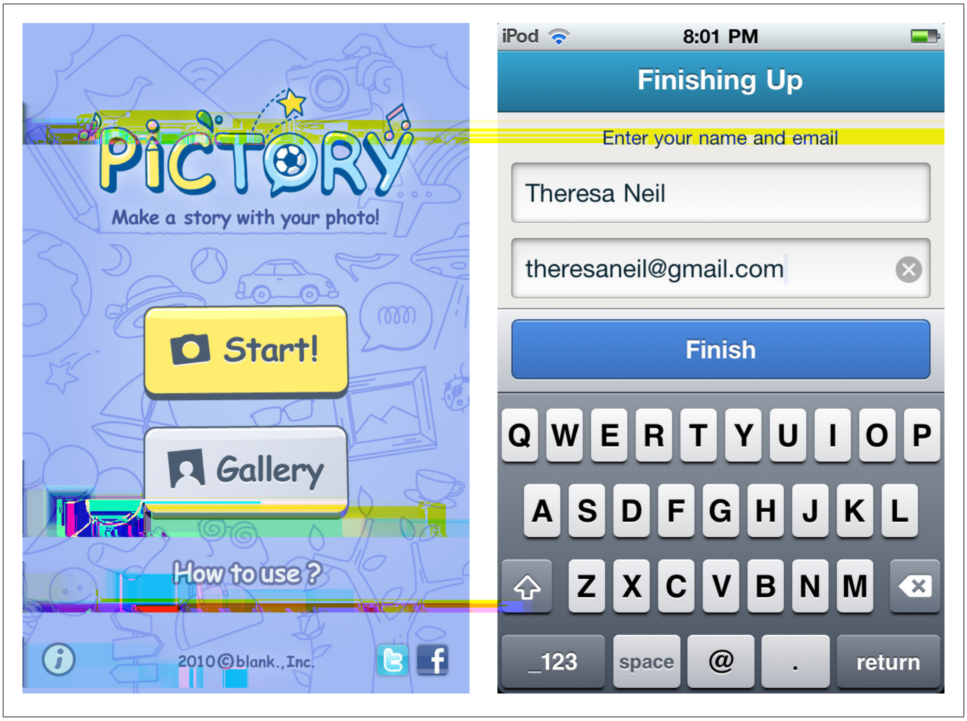


Figure 8-13. Affordance patterns

Tap

Visual design techniques like beveling and shadows can make elements appear tappable. Pictory and GroupMe both use these effects to make it readily apparent which controls can be tapped.



Theresa Neil

theresaneil@gmail.com

Figure 8-14. 3D buttons in Pictory and 3D buttons and fields in GroupMe

It is important to apply this effect properly though. Yelp's search button doesn't look like a button, whereas every element in this form looks like a button, even the field labels.

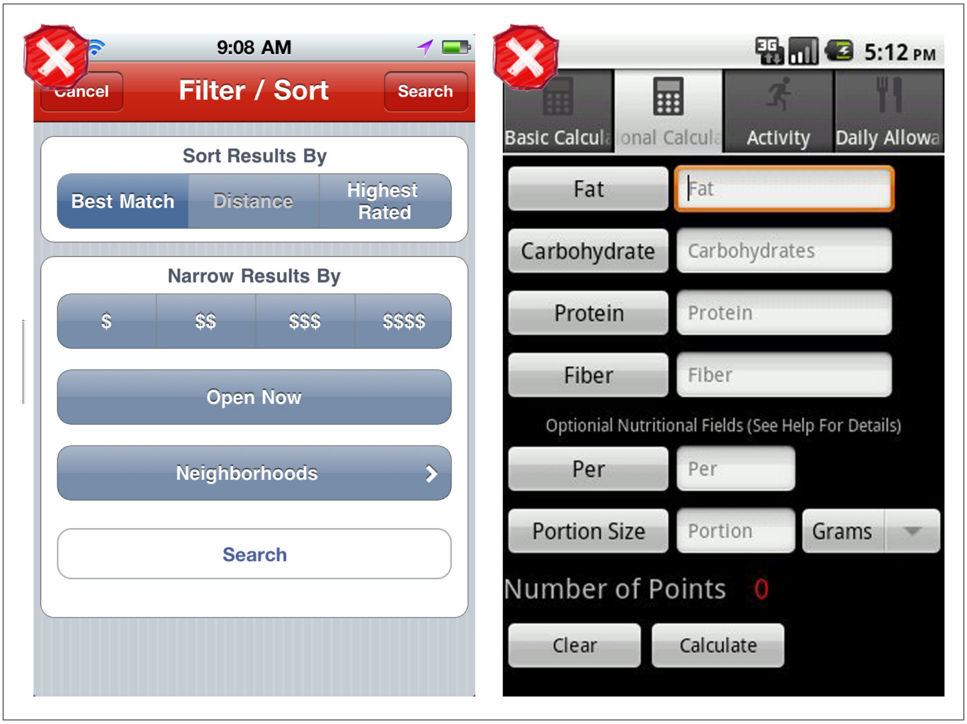
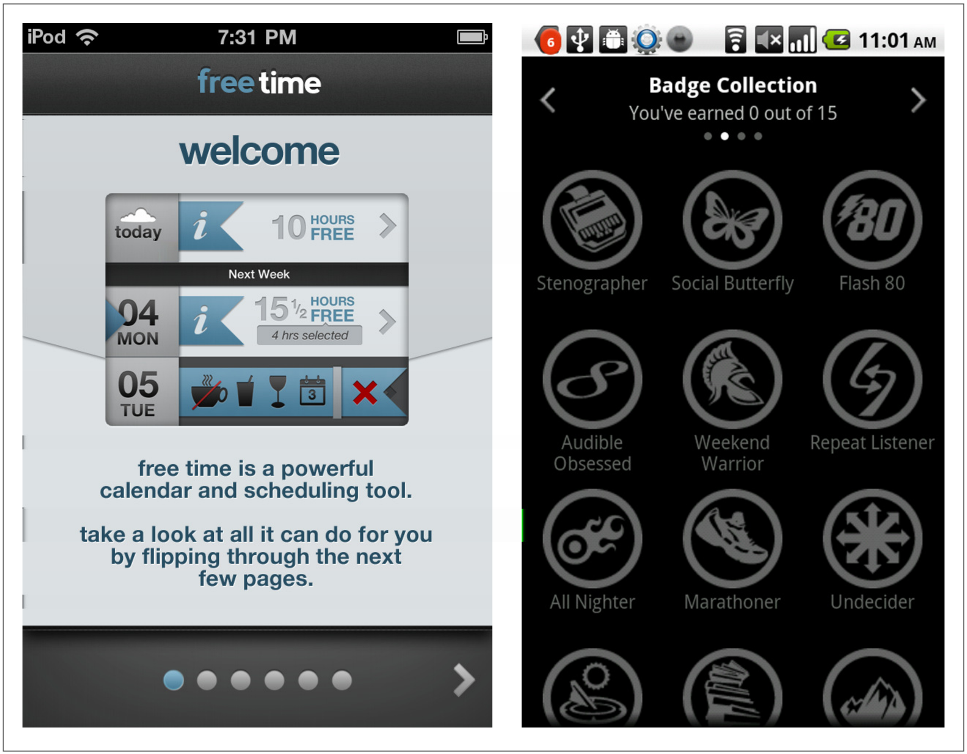


Figure 8-15. (Left) Yelp's search button doesn't look tappable; (Right) all of these labels look tappable

Use common visual design techniques to indicate tappable controls. But apply 3D effects judiciously; extra shadows and bevels can decrease readability.

Flick

There are many ways to provide affordance that there are more things to view. The iOS page indicator control, those little dots, has been widely adopted across web and mobile apps alike.



welcome

free time is a powerful calendar and scheduling tool.

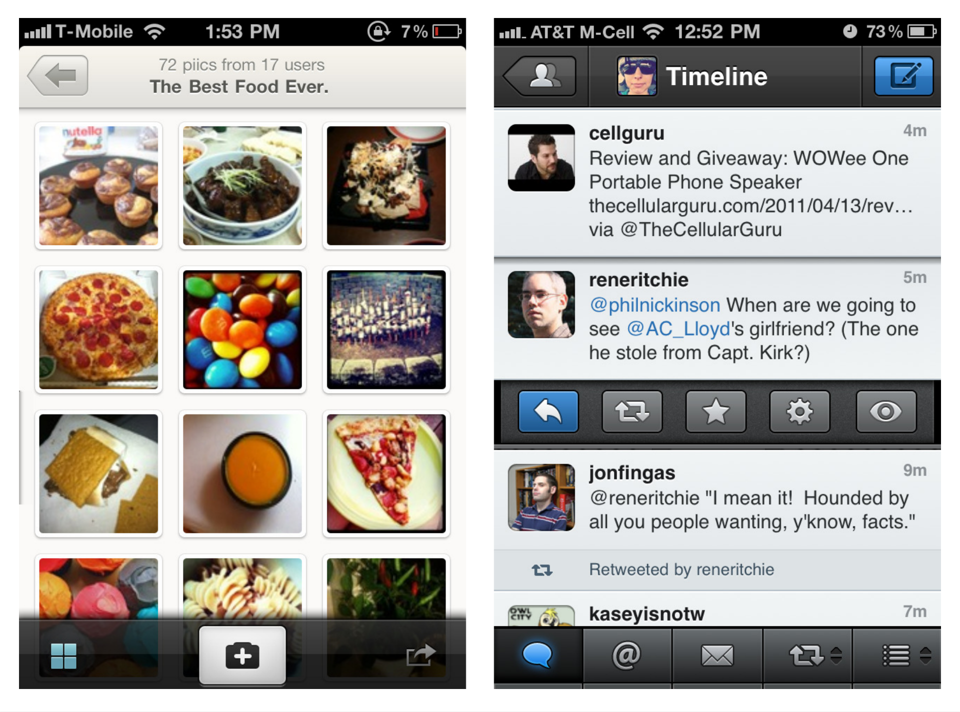
take a look at all it can do for you by flipping through the next few pages.

Badge Collection

You've earned 0 out of 15

Figure 8-16. FreeTime and Audible

Another option is to show a little bit of the next item at the edge of the screen, either the bottom or on the side. Both of these techniques encourage the user to flick the screen to see more.



cellguru 4m
Review and Giveaway: WOWee One Portable Phone Speaker thecellularguru.com/2011/04/13/rev… via @TheCellularGuru

reneritchie 5m
@philnickinson When are we going to see @AC_Lloyd's girlfriend? (The one he stole from Capt. Kirk?)

jonfingas 9m
@reneritchie "I mean it! Hounded by all you people wanting, y'know, facts."

kaseyisnotw 7m

Figure 8-17. Piictu and TweetBot

A less common option is to show a scrollbar. The bar may also act as a touch target for quickly jumping to a certain spot. Roambi uses an almost transparent scroll bar on the right with a green dot to indicate the current spot. Skype uses the alphabet scroll bar, a control commonly found in iOS apps.

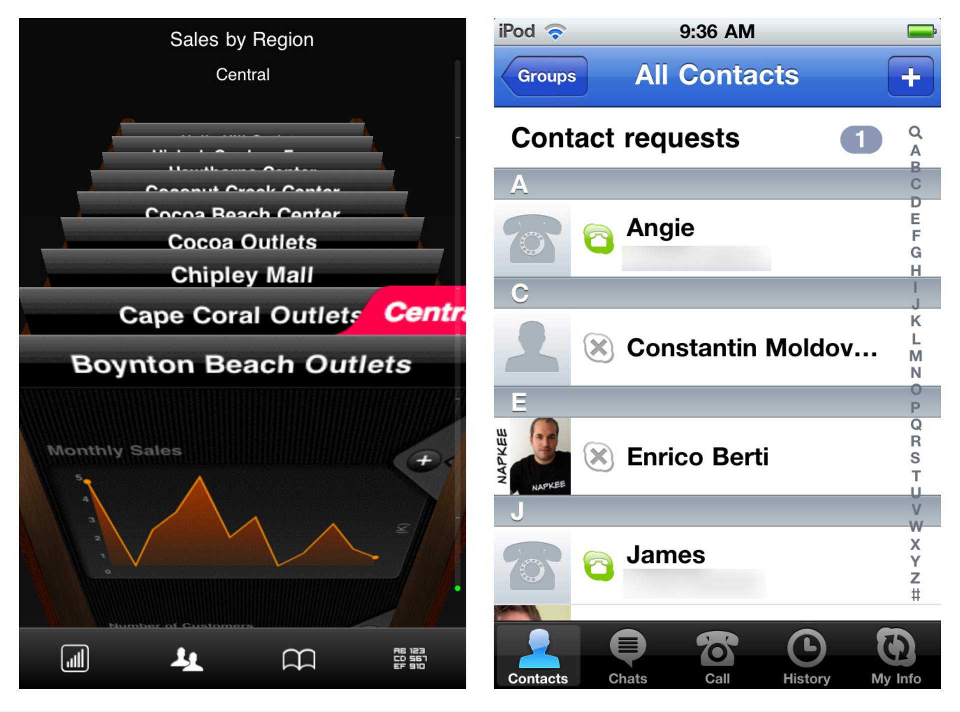


Figure 8-18. Roambi's Cardex and Skype

Use a page indicator or show the edge of the next item to provide affordance that flicking will reveal more items. Avoid heavy weight scroll bars.

Drag

Drag handles indicate that an item can be moved, rearranged, or reordered. They work well on items in a list like in Yahoo Finance and Roambi.

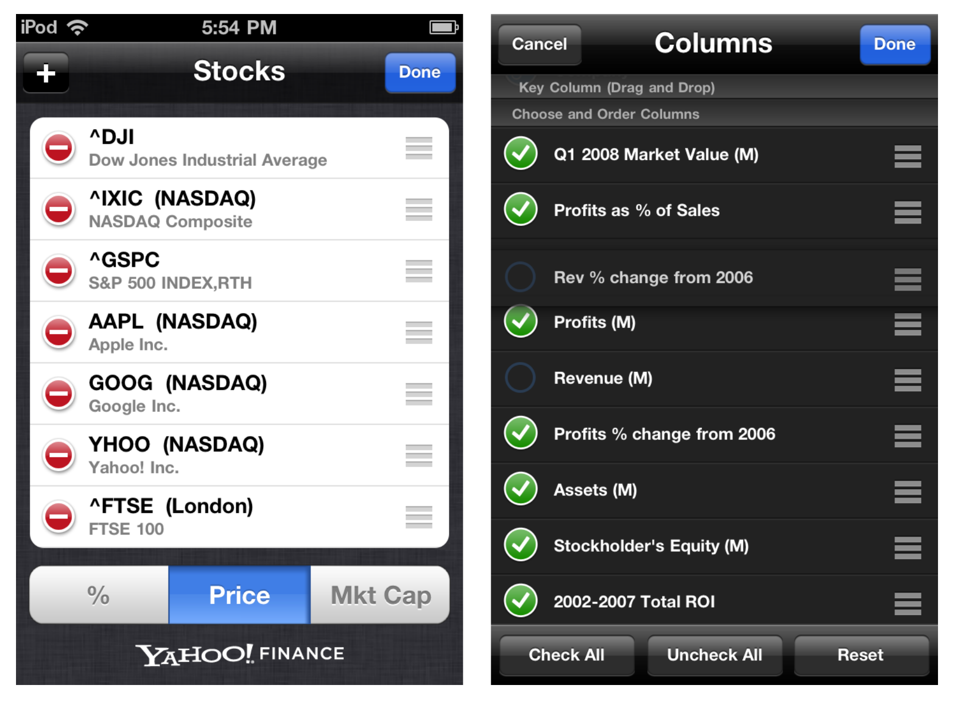


Figure 8-19. Yahoo! Finance and Roambi

Sliders also rely on drag handles, as do preview windows, see Chapter 6.

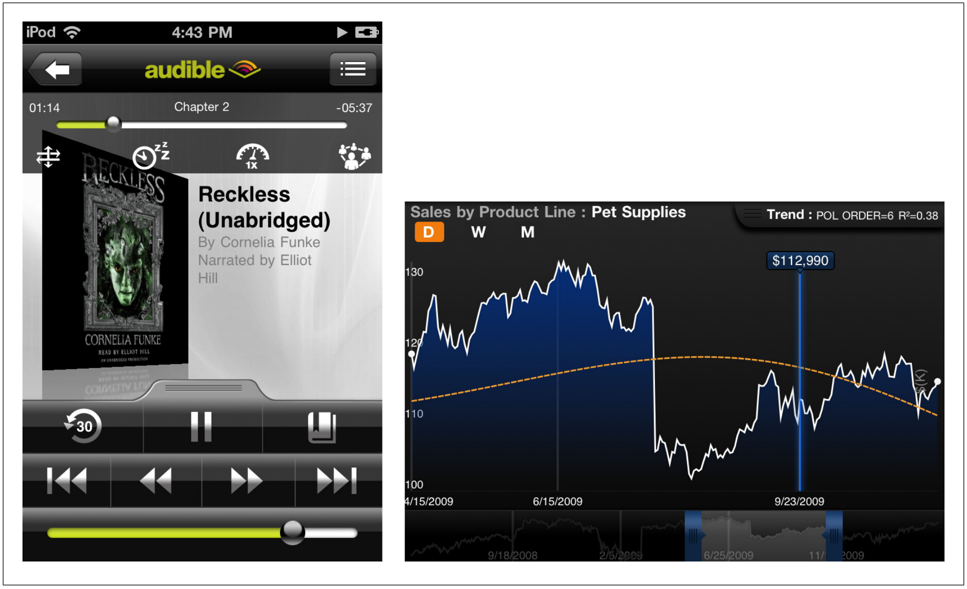


Figure 8-20. Audible and Roambi

Use a recognizable icon for the handle. Consider using an invitation along with the drag handle to let users know this feature is available.

CHAPTER 9

Help

Patterns: How To, Cheat Sheet, Tour

Mobile applications should be easy to learn and quick to master. But no matter how intuitive the application may be, some form of Help should be provided. A couple of common Help patterns are:

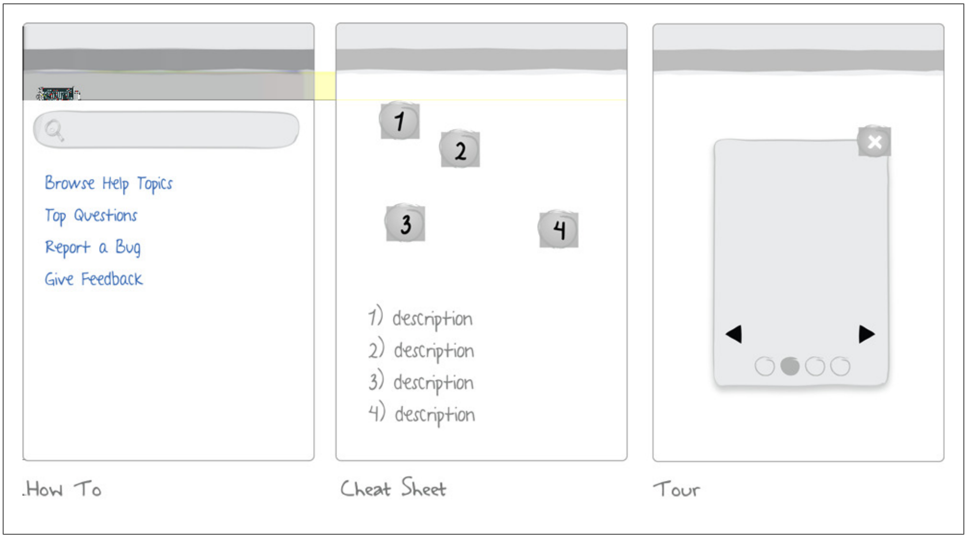


Figure 9-1. Help Patterns

How To

How To's are just simple explanations of how to use the app. They can be one page like Phoster and Pictory or part of a larger help system like Awesome Note.

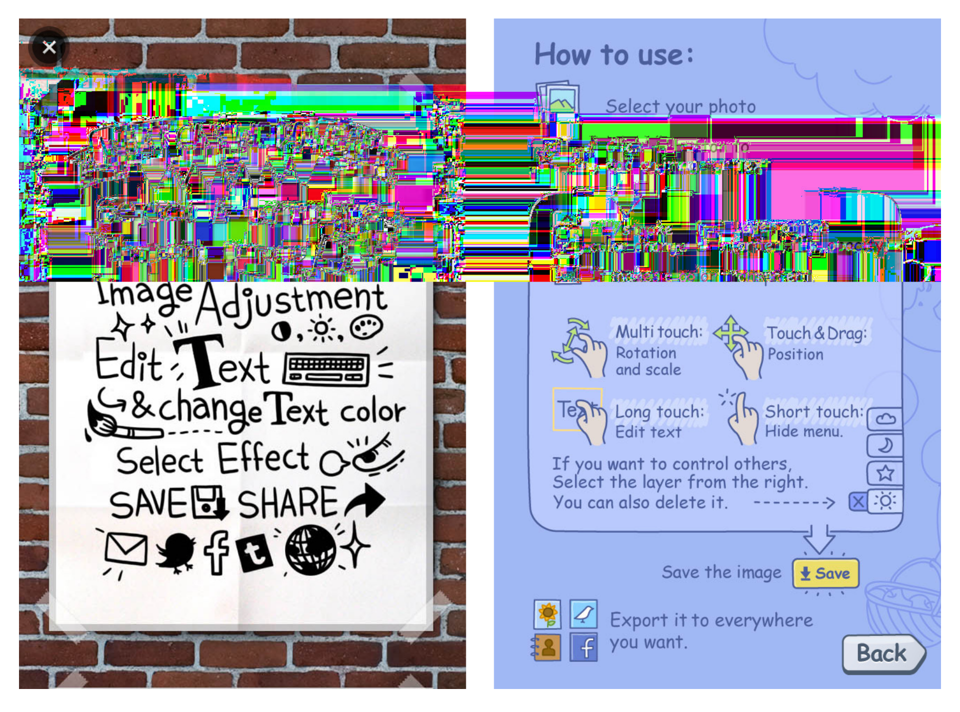


Image Adjustment

Edit Text

& change Text color

Select Effect

SAVE SHARE

How to use:

Select your photo

Multi touch: Rotation and scale

Touch & Drag: Position

Long touch: Edit text

Short touch: Hide menu.

If you want to control others,
Select the layer from the right.
You can also delete it. -------->

Save the image

Export it to everywhere
you want.

Figure 9-2. Phoster and Pictory

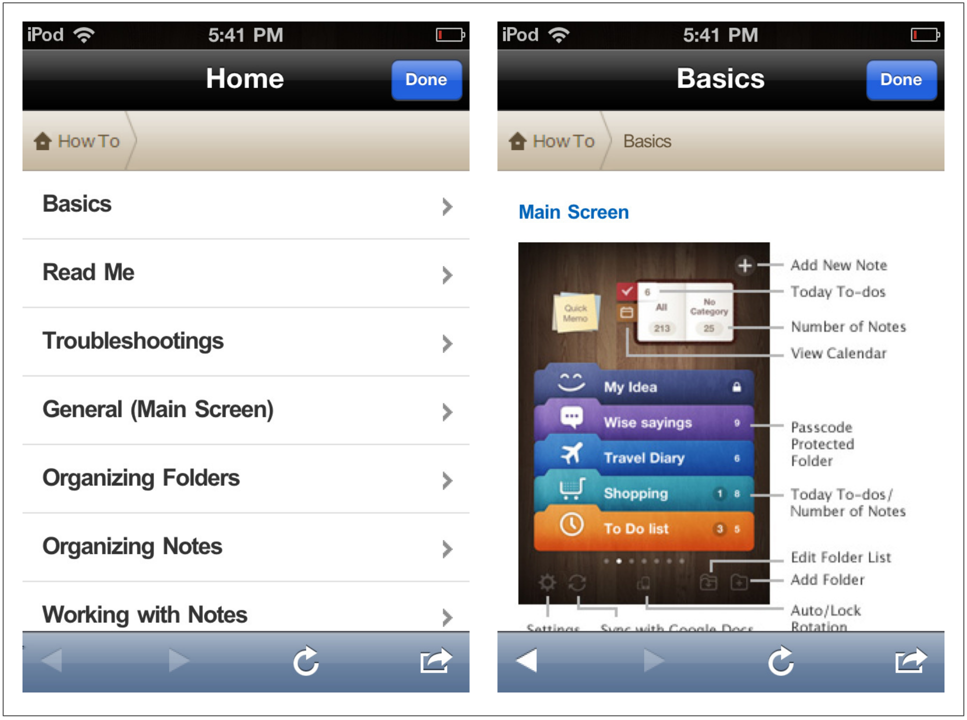
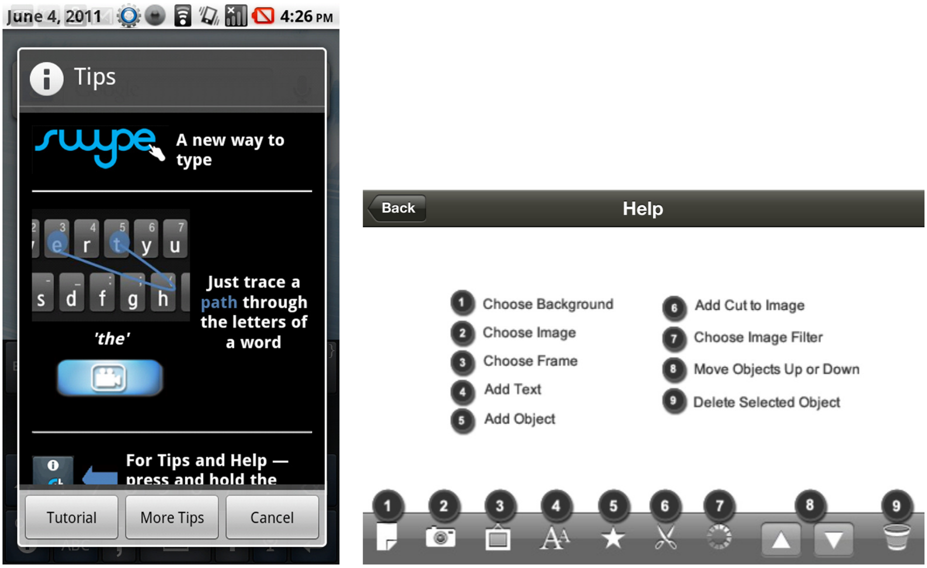


Figure 9-3. Awesome Note

Use a combination of screenshots, illustrations, and text to communicate in a How To.

Cheat Sheet

A Cheat Sheet offers a light weight way to introduce all the elements on the screen. Tap’n’scratch uses a separate page for this, whereas Android Swype opted for a dialog, see Chapter 7.



A new way to type

Just trace a path through the letters of a word

'the'

For Tips and Help — press and hold the

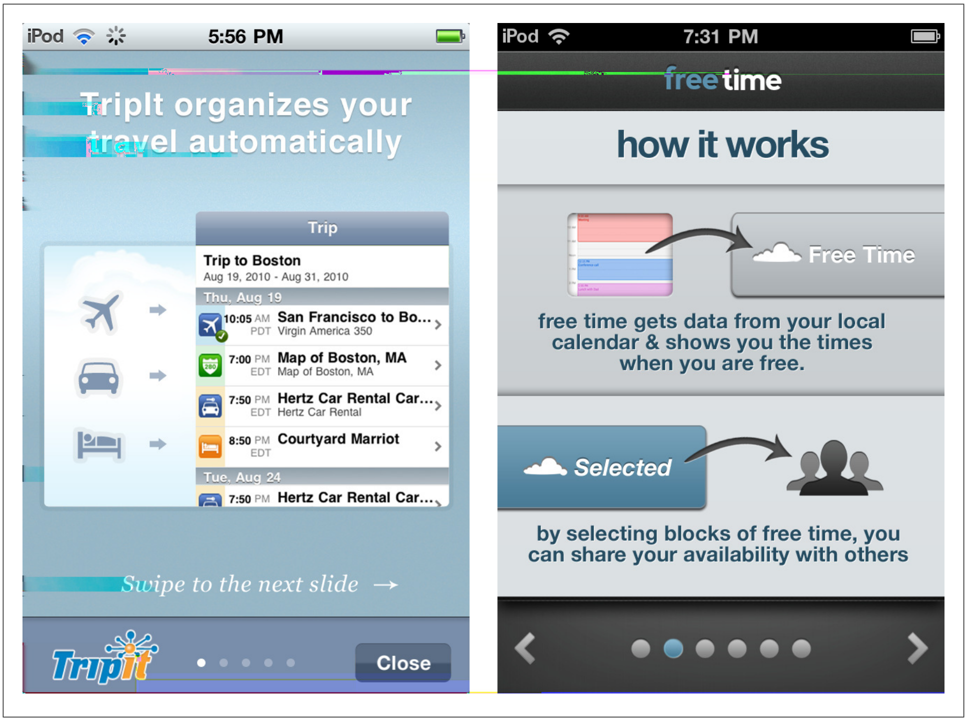
1 Choose Background
2 Choose Image
3 Choose Frame
4 Add Text
5 Add Object
6 Add Cut to Image
7 Choose Image Filter
8 Move Objects Up or Down
9 Delete Selected Object

Figure 9-4. Swype on Android and Tap’n’Scrap

A Cheat Sheet is no substitute for good design, but it can help users get comfortable and productive with the application.

Tour

A Tour is probably the best solution for providing help within the application. It can be offered at first use and should be accessible at any time in the future. More information and examples of Tours are in Chapter 7.



TripIt organizes your travel automatically

Trip to Boston
Aug 19, 2010 - Aug 31, 2010

10:05 AM PDT San Francisco to Bo… Virgin America 350
7:00 PM EDT Map of Boston, MA Map of Boston, MA
7:50 PM EDT Hertz Car Rental Car… Hertz Car Rental
8:50 PM EDT Courtyard Marriot
7:50 PM Hertz Car Rental Car…

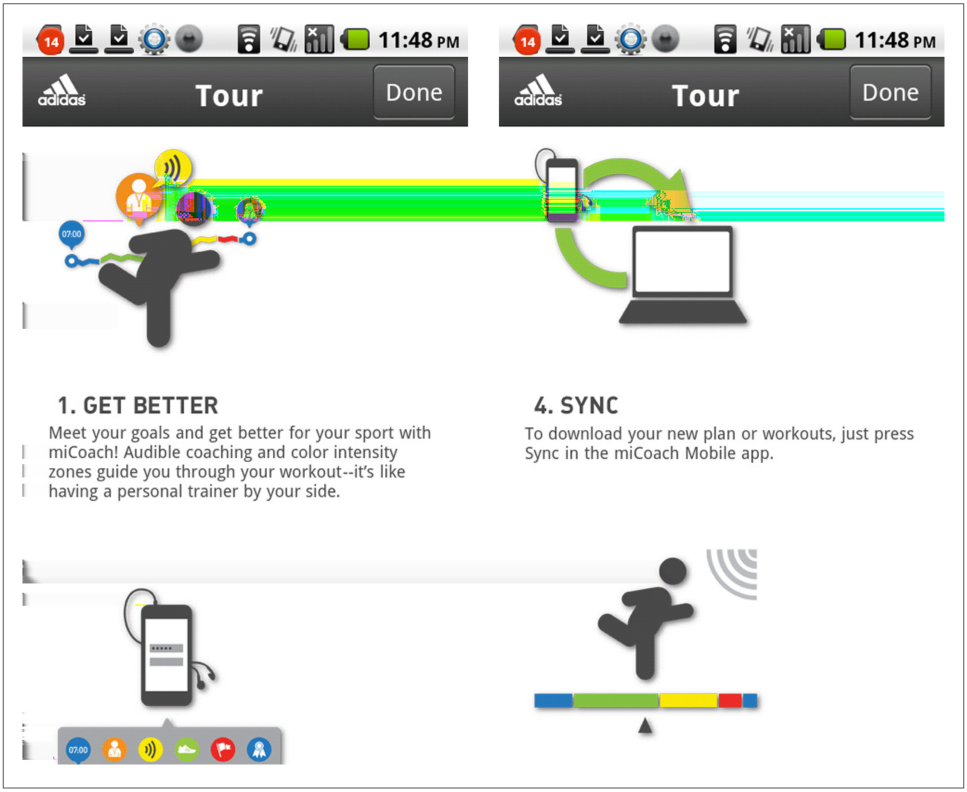
Swipe to the next slide →

how it works

free time gets data from your local calendar & shows you the times when you are free.

by selecting blocks of free time, you can share your availability with others

Figure 9-5. TripIt and FreeTime



1. GET BETTER

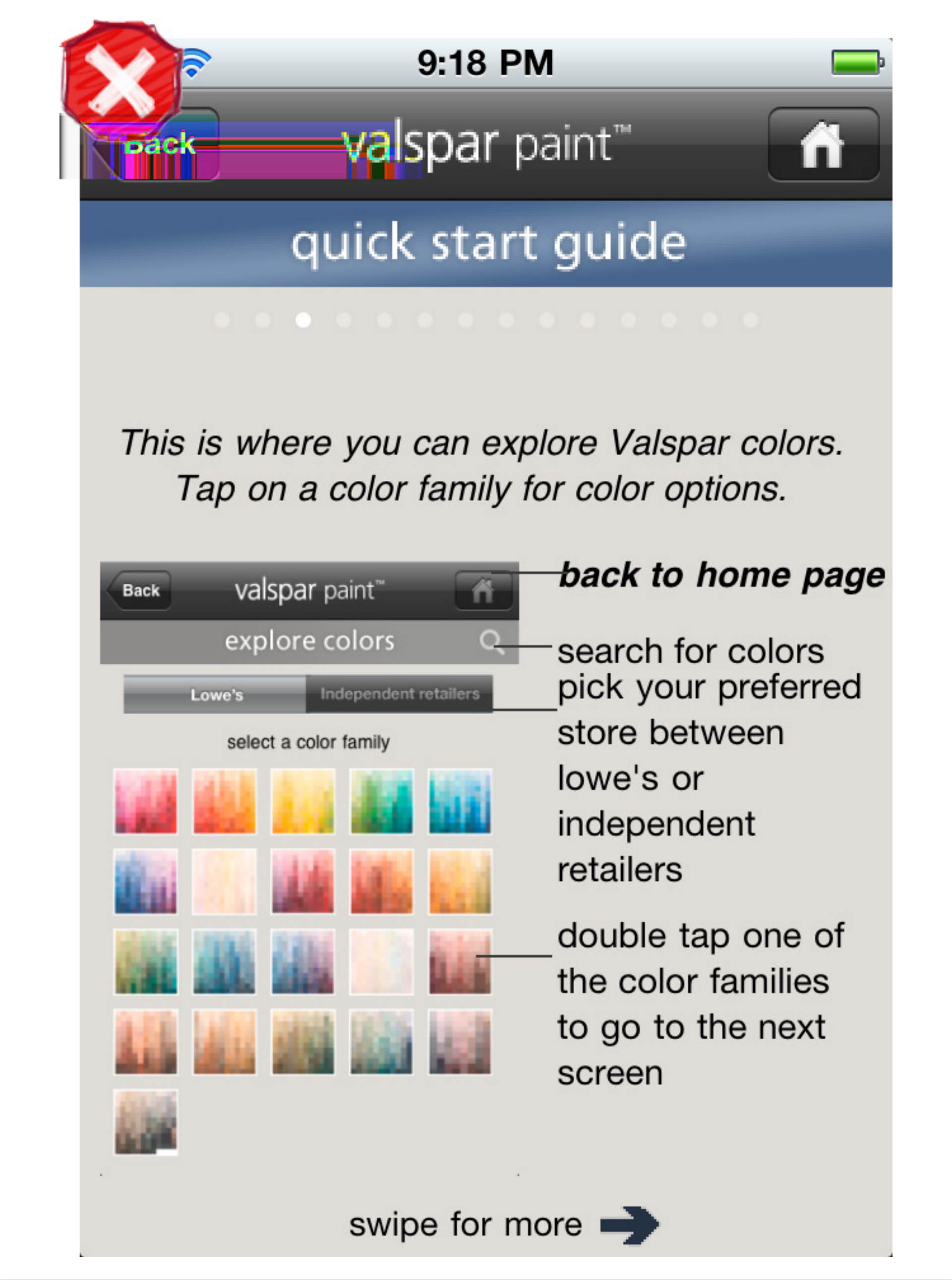
Meet your goals and get better for your sport with miCoach! Audible coaching and color intensity zones guide you through your workout--it's like having a personal trainer by your side.

4. SYNC

To download your new plan or workouts, just press Sync in the miCoach Mobile app.

Figure 9-6. Adidas miCoach

Although Valspar's Quick Start Guide is attractive and full of great content, it might not be so quick; there are +12 pages to swipe through. Try to keep a Tour down to a half dozen pages.



quick start guide

This is where you can explore Valspar colors. Tap on a color family for color options.

back to home page

search for colors

pick your preferred store between lowe's or independent retailers

double tap one of the color families to go to the next screen

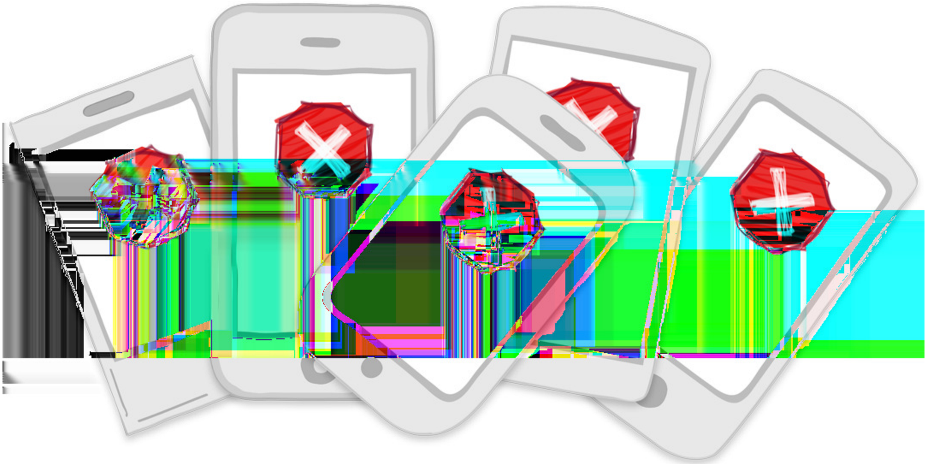
swipe for more

Figure 9-7. Valspar's not so quick guide

The Tour should highlight key features of the application, preferably from a (user) goal perspective. Keep it short and visually engaging.

CHAPTER 10

Anti-Patterns



Anti-Patterns: Novel Notions, Metaphor Mismatch, Idiot Boxes, Chart Junk, Oceans of Buttons

What are anti-patterns? Wikipedia defines them as:

> Anti-patterns, also called pitfalls, are classes of commonly-reinvented bad solutions to problems. They are studied as a category so they can be avoided in the future, and so instances of them may be recognized when investigating non-working systems. The term originates in computer science, apparently inspired by the Gang of Four's book Design Patterns, which displayed examples of high-quality programming methods.
>
> —Wikipedia, Anti-Pattern.

Like the software anti-pattern counterparts, the following design anti-patterns are common pitfalls to avoid.

Novel Notions Anti-Pattern

Novel designs are intended to be new, edgy, creative, and innovative. But most of the time they're just bad, hard to understand, and harder to use. Richard Gunther, creator of the BUI* Gallery, explains it as: "You can usually tell when a mobile app development team comes from an old web development background. They often attempt to translate old user interaction models to the new platform and assert their "creativity" by introducing non-standard UI elements."

Novel Notions can be found anywhere in an application, from primary navigation down to an individual control, interaction, or gesture. Weight Watcher's has a number of Novel Notions in their application, the most obvious being their primary navigation. They created a custom menu drawer that contains a Springboard.

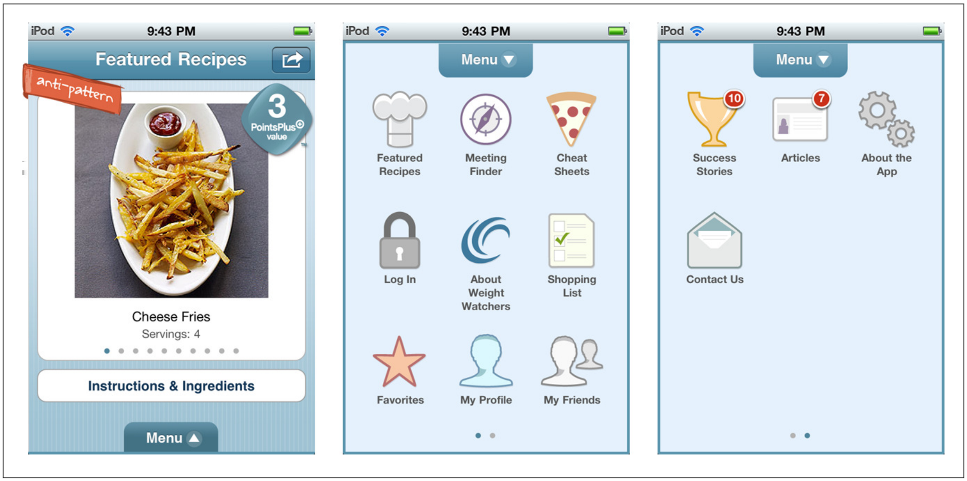


Figure 10-1. Weight Watchers

This is just terrible. It is clunky to use, the organization is random, and important features for converting visitors to paying customers are essentially hidden (in the second page of the Springboard). I can see what Weight Watchers wanted to achieve here, but the application would be easier to learn and navigate if they had used a standard navigation pattern and organized the menu options.

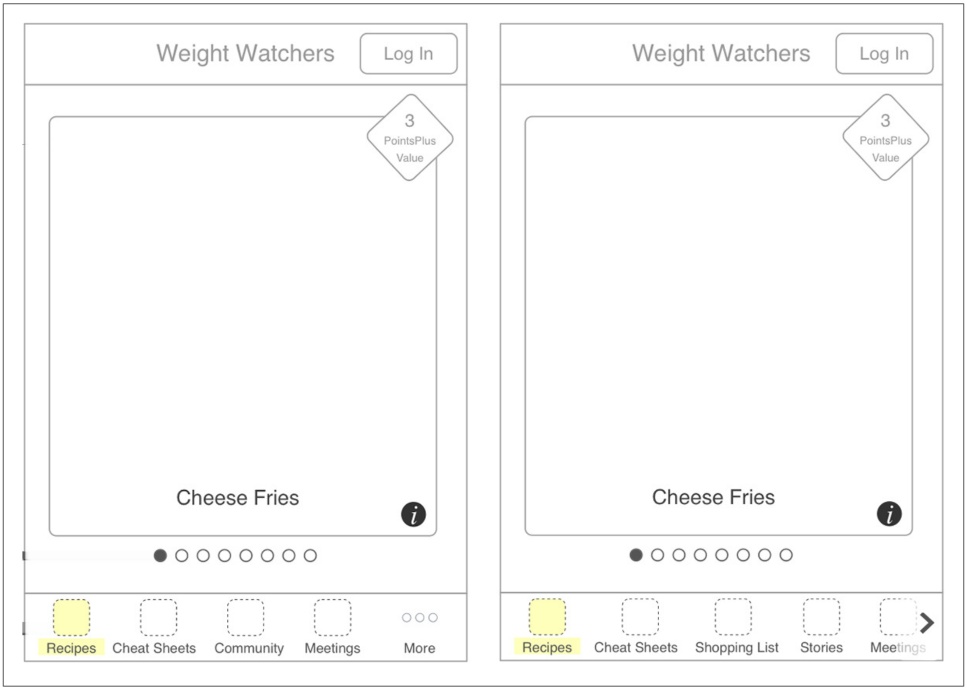


Figure 10-2. Tab menu option, wireframe (left); scrolling tab option, wireframe (right)

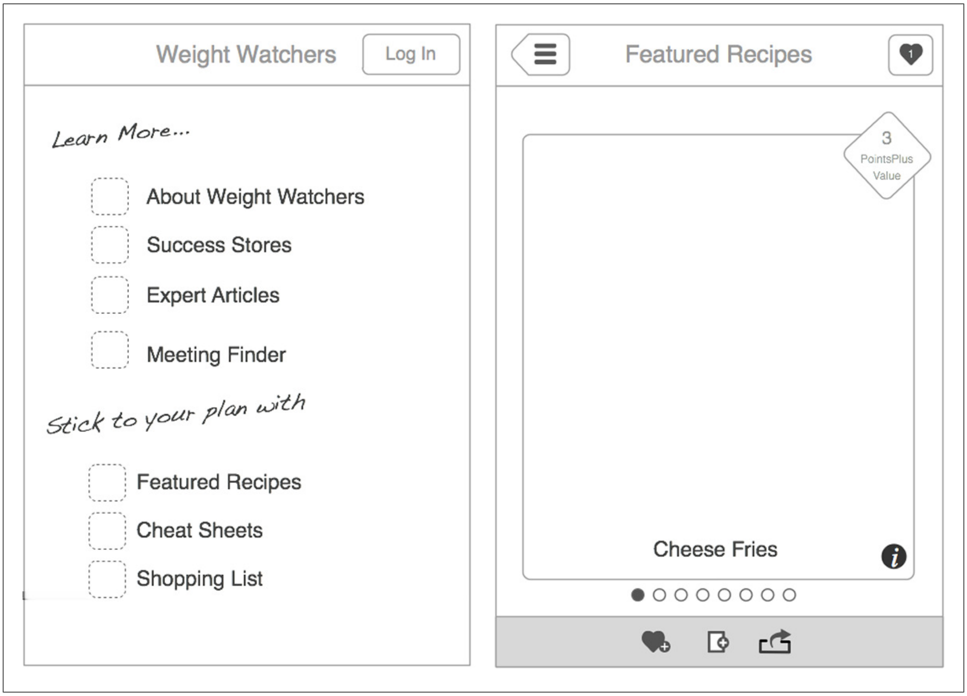


Figure 10-3. List menu option, wireframe (left); interior screen concept (right)

The Fly Delta iPhone had a similarly "novel" menu, but they have since replaced it with another Novel Notion, a discoverable (onFlick) footer with a Home button and a link to "Contact Us."

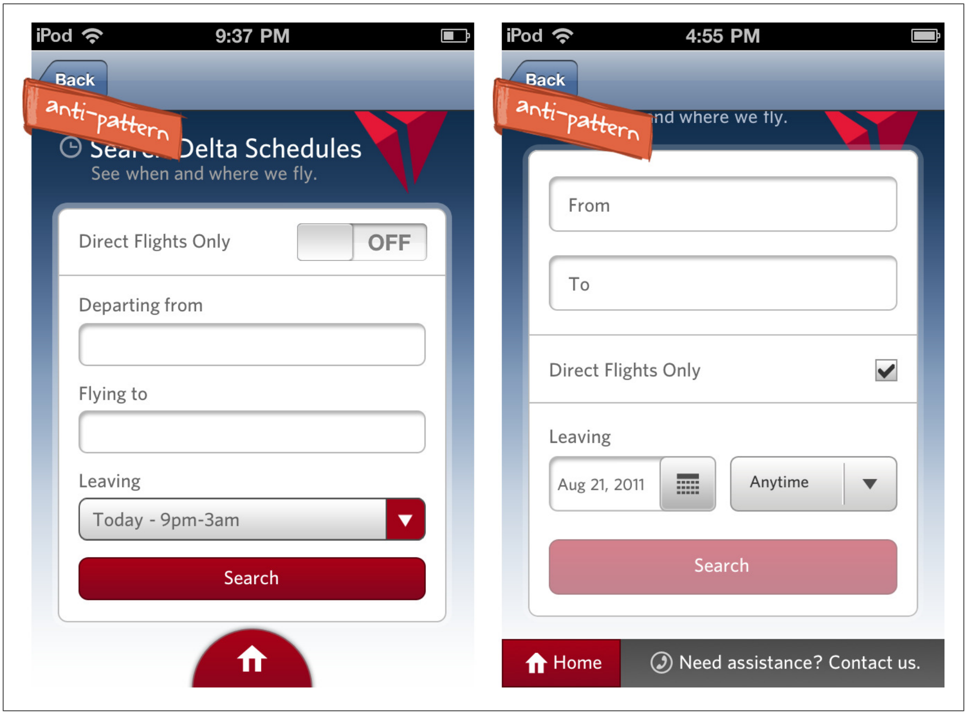
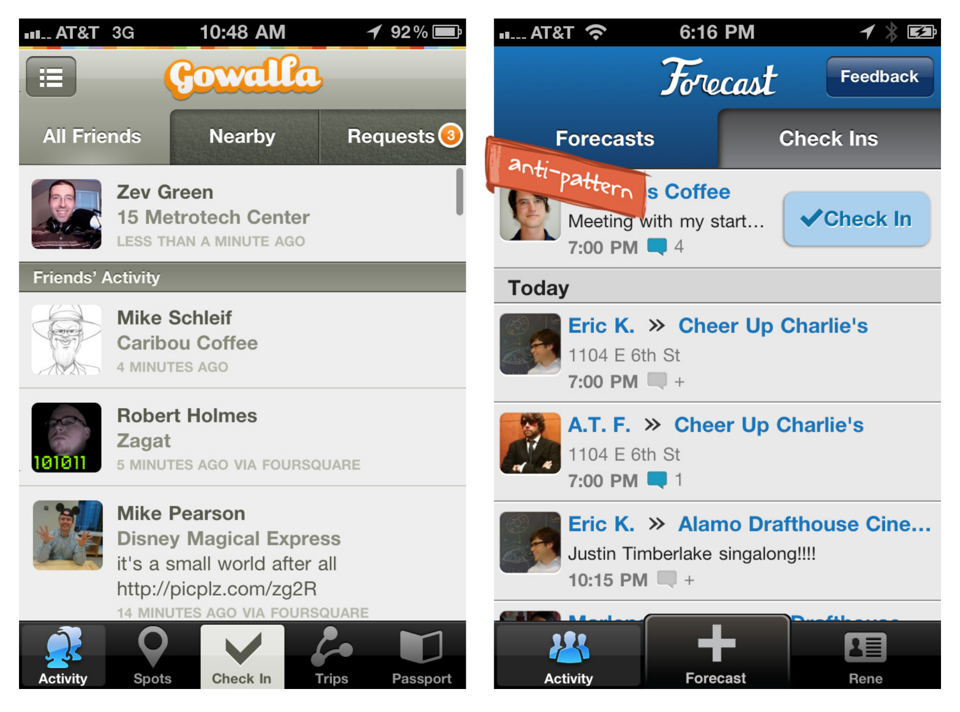


Figure 10-4. Fly Delta, previous menu (left) and new menu (right)

If it was important to offer one-click access to the main page, the standard iOS tabs would work just fine. “Contact us” would be better positioned in the top right than in a hidden footer. Does this menu design make the application innovative? No, just a little harder to use.

Sometimes a talented and experienced design team can pull off a Novel Notion with enough finesse to make it usable. Gowalla's designers took a standard Tab menu and flipped it over making a beautiful and useable menu. Forecast tried to imitate the Gowalla menu without understanding the nuances of the design.



AT&T 3G 10:48 AM 92%

Gowalla

All Friends | Nearby | Requests 3

Zev Green
15 Metrotech Center
LESS THAN A MINUTE AGO

Friends' Activity

Mike Schleif
Caribou Coffee
4 MINUTES AGO

Robert Holmes
Zagat
5 MINUTES AGO VIA FOURSQUARE

Mike Pearson
Disney Magical Express
it's a small world after all
http://picplz.com/zg2R
14 MINUTES AGO VIA FOURSQUARE

Activity | Spots | Check In | Trips | Passport

AT&T 6:16 PM

Forecast | Feedback

Forecasts | Check Ins

s Coffee
Meeting with my start…
7:00 PM 4
✓Check In

Today

Eric K. » Cheer Up Charlie's
1104 E 6th St
7:00 PM +

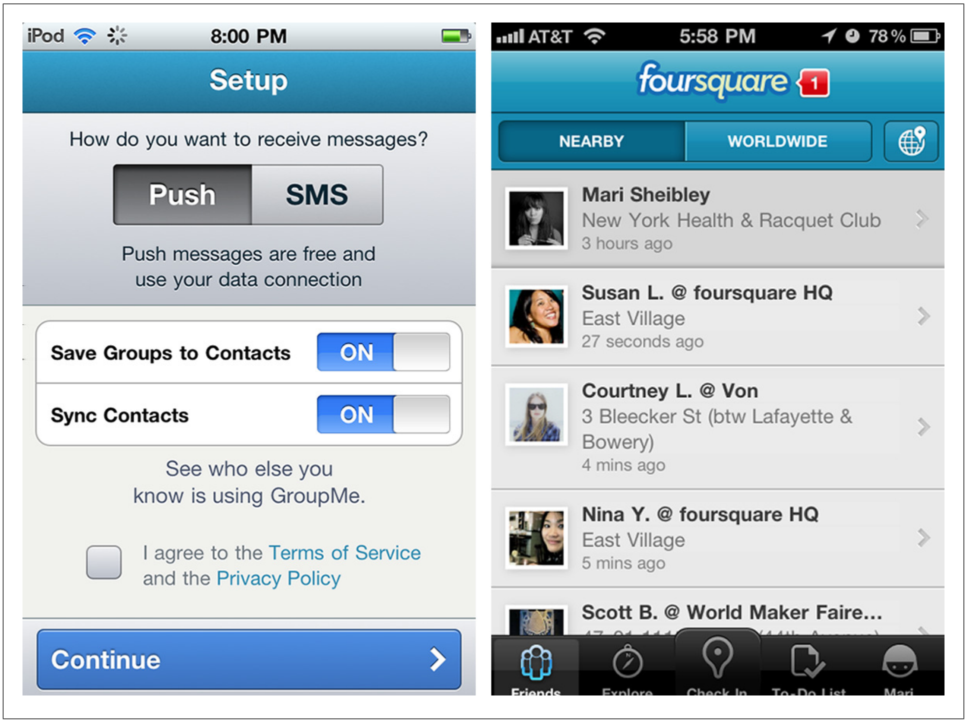
A.T. F. » Cheer Up Charlie's
1104 E 6th St
7:00 PM 1

Eric K. » Alamo Drafthouse Cine…
Justin Timberlake singalong!!!!
10:15 PM +

Activity | Forecast | Rene

Figure 10-5. Gowalla and Forecast

With only two stylized tabs in Forecast, it takes a little longer to figure out, am I looking at Forecasts or Check Ins? The visual design doesn't help; the recessed design of the Check Ins tab make it appear selected when it's not.



How do you want to receive messages?

Push | SMS

Push messages are free and use your data connection

Save Groups to Contacts ON

Sync Contacts ON

See who else you know is using GroupMe.

□ I agree to the Terms of Service and the Privacy Policy

Continue >

Mari Sheibley
New York Health & Racquet Club
3 hours ago

Susan L. @ foursquare HQ
East Village
27 seconds ago

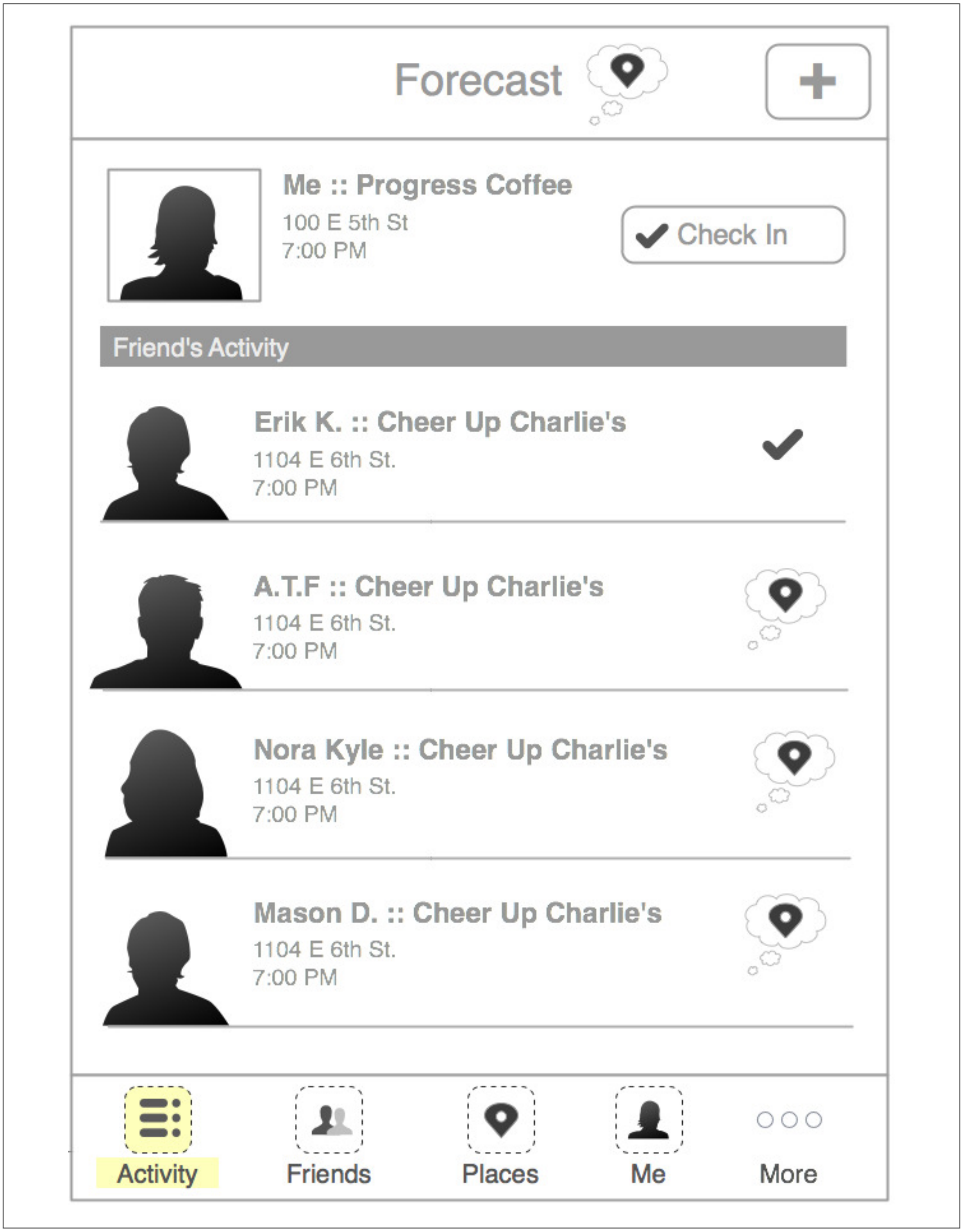
Courtney L. @ Von
3 Bleecker St (btw Lafayette & Bowery)
4 mins ago

Nina Y. @ foursquare HQ
East Village
5 mins ago

Scott B. @ World Maker Faire...

Figure 10-6. Recessed style typically indicates the selected option

A simple toggle bar would alleviate this confusion. Actually, after looking at the flow of this application more closely, I think a single activity feed showing forecasts and check ins combined sorted by time would be the best option. This design relies on Forecast establishing a recognizable "forecast" icon for indicating if friends have forecast a place or checked in to a place.



Me :: Progress Coffee
100 E 5th St
7:00 PM

Erik K. :: Cheer Up Charlie's ✓
1104 E 6th St.
7:00 PM

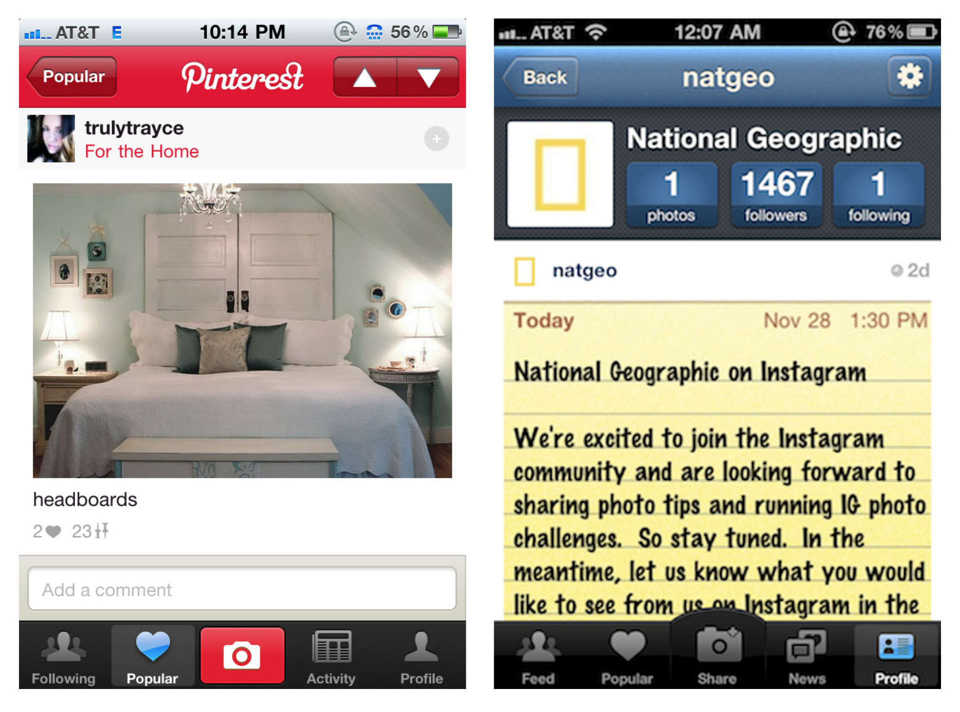
A.T.F :: Cheer Up Charlie's
1104 E 6th St.
7:00 PM

Nora Kyle :: Cheer Up Charlie's
1104 E 6th St.
7:00 PM

Mason D. :: Cheer Up Charlie's
1104 E 6th St.
7:00 PM

Figure 10-7. Wireframe with iOS standard tabs

Forecast also designed a custom tab bar, but it too lacks polish. This type of custom bar works well for applications with one main call to action, like posting to Pinterest and sharing with Instagram. Forecast really has two main actions, Forecast then Check In.

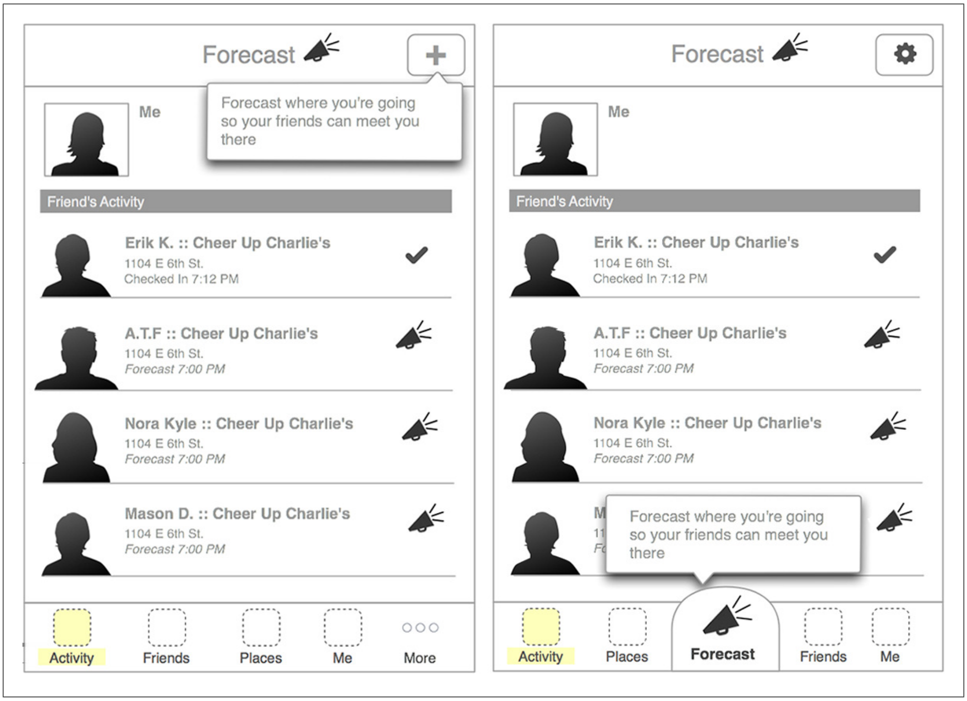


National Geographic on Instagram

We're excited to join the Instagram community and are looking forward to sharing photo tips and running IG photo challenges. So stay tuned. In the meantime, let us know what you would like to see from us on Instagram in the

Figure 10-8. Pinterest and Instagram

A persistent *Add Forecast* button would probably work just as well, with an invitation for new users to help with their first time through. If not, an icon for Forecast should be developed and used for the custom toolbar.



Forecast where you're going so your friends can meet you there

Figure 10-9. Add Forecast button with invitation (left); alternate version with a custom toolbar (right)

If you are looking for a way to innovate with your application, focus on your core features and offerings, but rely on best practices for the interface design. If you design a custom control, rigorously test it and refine it to make sure it is usable.

Metaphor Mismatch Anti-Pattern

This anti-pattern is a result of picking the wrong metaphor for the interface. Metaphor Mismatch can occur at a low level, when a control or icon is used inappropriately, or at a high level, where the conceptual model for the application doesn't match the user's mental model.

Control Mismatch

A simple example of this anti-pattern at a low level is in the app Calorific, where they offer a list of every age instead of a date picker. Another example is in Easy Point Calculator, where all the labels are styled to look like buttons.

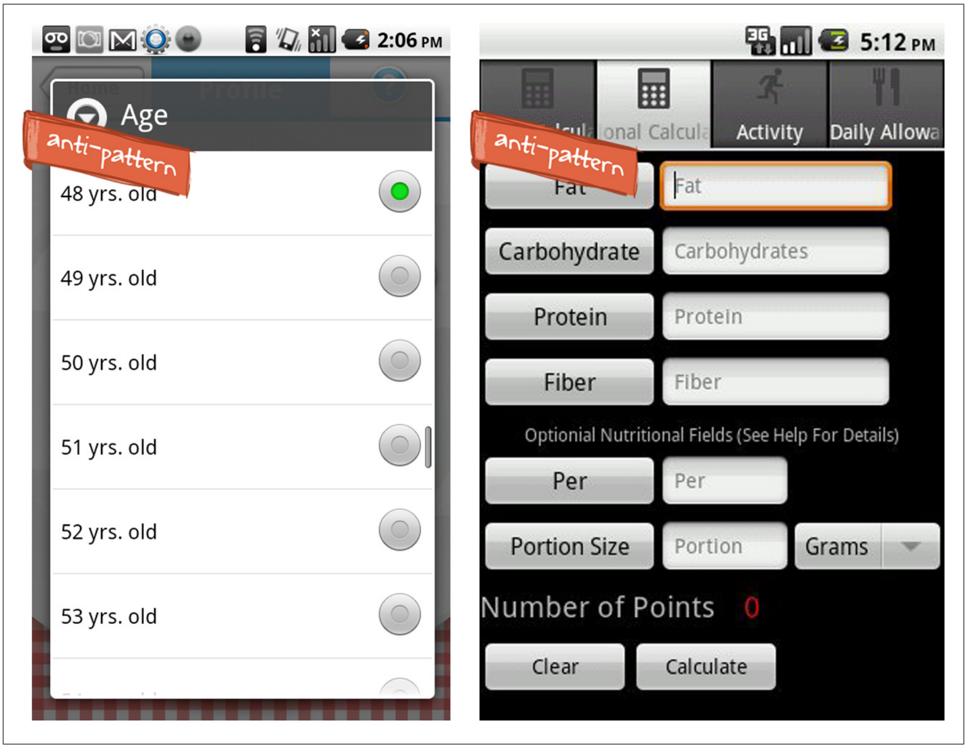
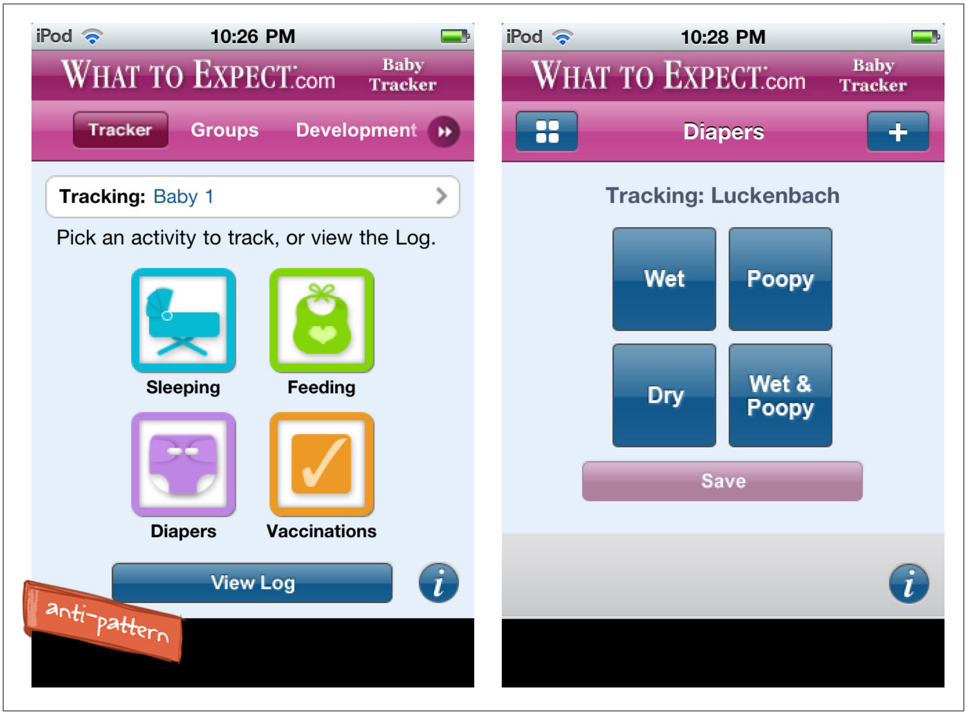


Figure 10-10. Calorific and Easy Point Calculator

What To Expect's Baby Tracker also has a Metaphor Mismatch between the controls used for navigation and the ones people expect to find. On first glance, WTE seems to have four baby tracking options and a View Log button.



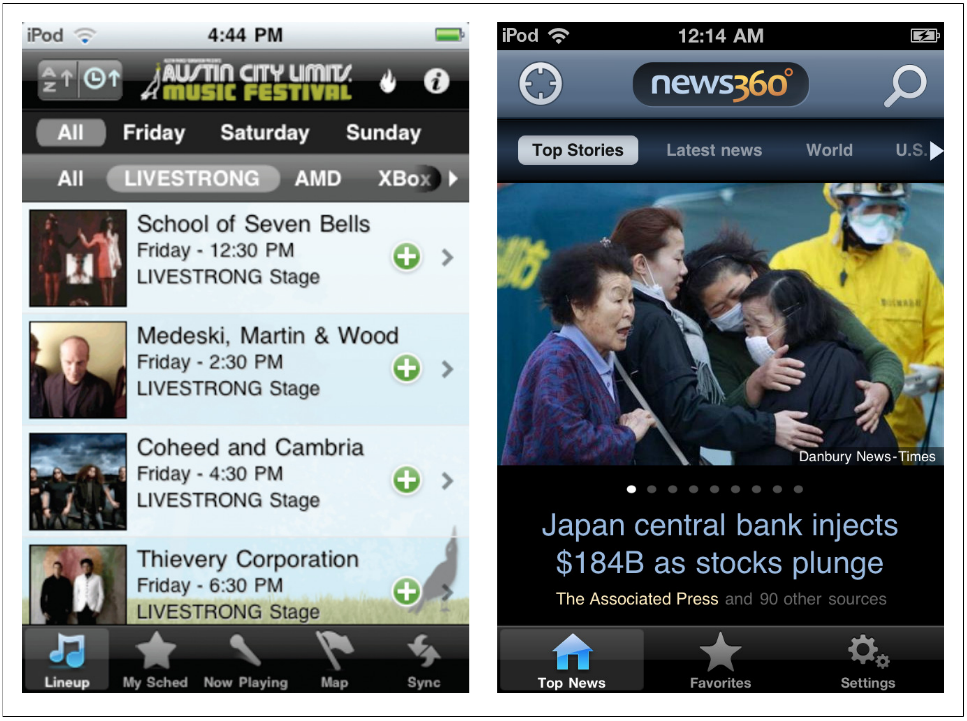
Tracking: Baby 1

Pick an activity to track, or view the Log.

Tracking: Luckenbach

Figure 10-11. WTE's Baby Tracker

But there is a full menu of options wedged in the pink filter below the title bar. Although this filter control works well for navigating content in apps like ACL and 360News, it is a poor choice for *primary navigation*.



iPod 4:44 PM
AUSTIN CITY LIMITS MUSIC FESTIVAL
All Friday Saturday Sunday
All LIVESTRONG AMD XBox
Lineup My Sched Now Playing Map Sync

School of Seven Bells
Friday - 12:30 PM
LIVESTRONG Stage

Medeski, Martin & Wood
Friday - 2:30 PM
LIVESTRONG Stage

Coheed and Cambria
Friday - 4:30 PM
LIVESTRONG Stage

Thievery Corporation
Friday - 6:30 PM
LIVESTRONG Stage

iPod 12:14 AM
news360°
Top Stories Latest news World U.S.
Danbury News-Times
Top News Favorites Settings

Japan central bank injects $184B as stocks plunge

The Associated Press and 90 other sources

Figure 10-12. ACL, filter control for shows; news360, filter control for stories

Anecdotal evidence: I installed the What To Expect app when my son was 3 weeks old. I only saw the four tracking options so I deleted it.

Icon Mismatch

Icons are another contender for the Metaphor Mismatch anti-pattern. People expect familiar icons to offer specific features. Using a familiar icon in an unfamiliar way will cause confusion.

In the top right of the Weight Watcher's app there is the iOSsendButton. It normally offers options like Send email, Send to Facebook. I was surprised to see Favorites and Add to Shopping List options listed here. Offering a standard toolbar would make this application more intuitive, and probably result in higher adoption of the "favorite" and "shopping list" features.

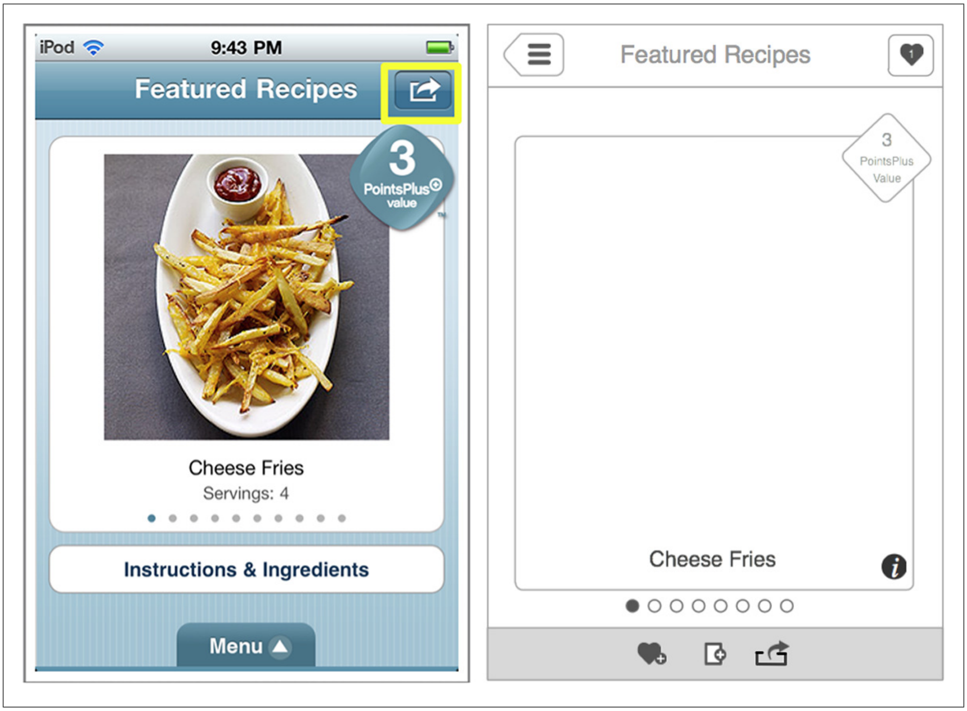
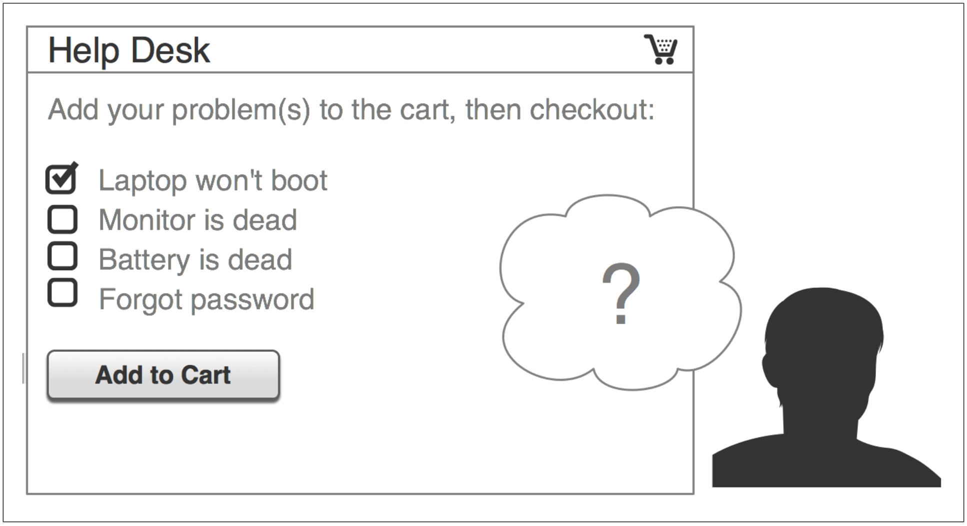


Figure 10-13. Send button has unexpected options

Mental Model Mismatch

One of my favorite examples of this anti-pattern was in a trouble ticket system my previous employer rolled out. When we had a technical issue, from a forgotten password to a dead laptop, we had to sign into the system, browse the list of issues, select an issue, then add it to a shopping cart and checkout. Great design for a retail shopping app, total mismatch for a technical support application!



Help Desk

Add your problem(s) to the cart, then checkout:

☑ Laptop won't boot
□ Monitor is dead
□ Battery is dead
□ Forgot password

Figure 10-14. Help desk example

Take this example from the ABC News iPad app. A globe for navigating news content? Oh, well that makes sense perhaps if stories are surfaced from specific geographic locations. But they are not. In fact the ABC News globe has nothing to do with "the globe." It is just a spinning sphere that is hard to read and harder to browse.

Compare it with the globe used in GeoWalk, an educational application for exploring facts from around the globe. GeoWalk has fact cards placed at different locations on the globe, so you can explore facts for a specific region.

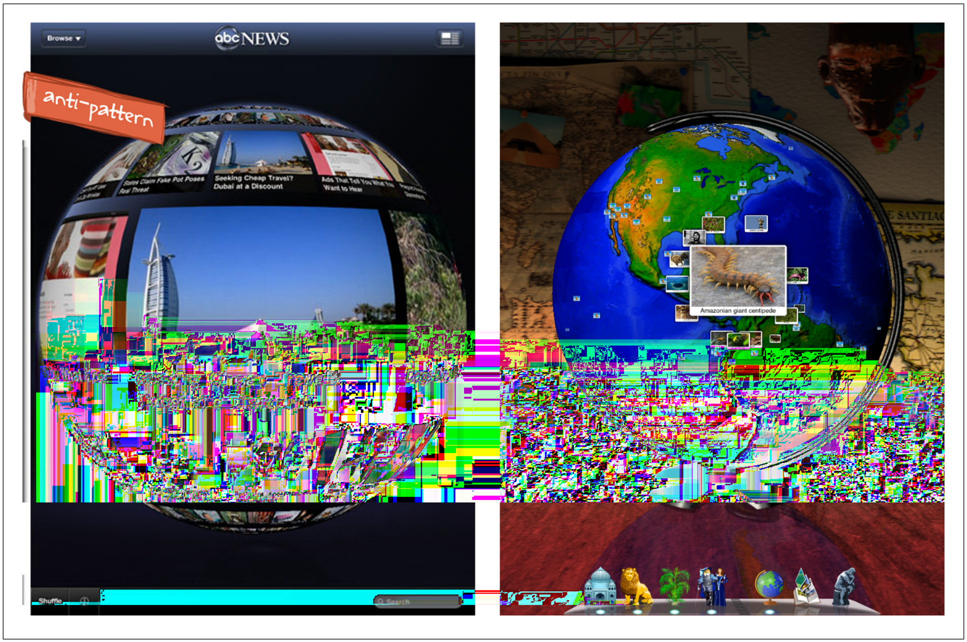

Browse
abc NEWS
anti-pattern
Seeking Cheap Travel? Dubai at a Discount
Amazonian giant centipede
Shuffle
Search

Figure 10-15. ABC News and GeoWalk

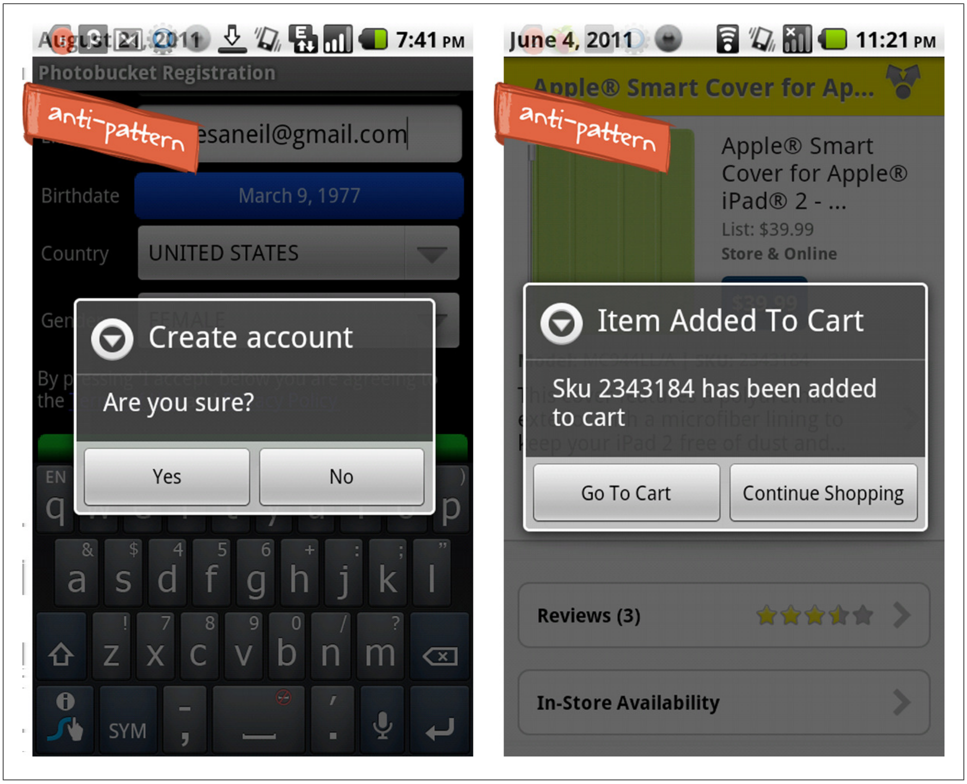
Metaphors, from iconography and controls to conceptual models, can be used to enhance an experience. Using them improperly will make the application hard to learn and use.

Idiot Box

In Alan Cooper's About Face 3 book he describes this scenario:

> A person enters a highly productive mental state by working in harmony with her tools....Interrupting a user's flow for no good reason is stopping the proceedings with idiocy and is one of the most disruptive forms of excise.

Bill Scott built on this concept of "stopping the proceedings with idiocy", and coined the Idiot Box anti-pattern. My favorite Idiot Box is in Photobucket's registration form. After I painstakingly complete 10 fields and click a big green button labeled "I Agree, Sign Me Up!", this dialog pops up.



Photobucket Registration

esaneil@gmail.com

Birthdate March 9, 1977

Country UNITED STATES

Create account

Are you sure?

Apple® Smart Cover for Ap...

Apple® Smart Cover for Apple® iPad® 2 - ...

List: $39.99

Store & Online

Item Added To Cart

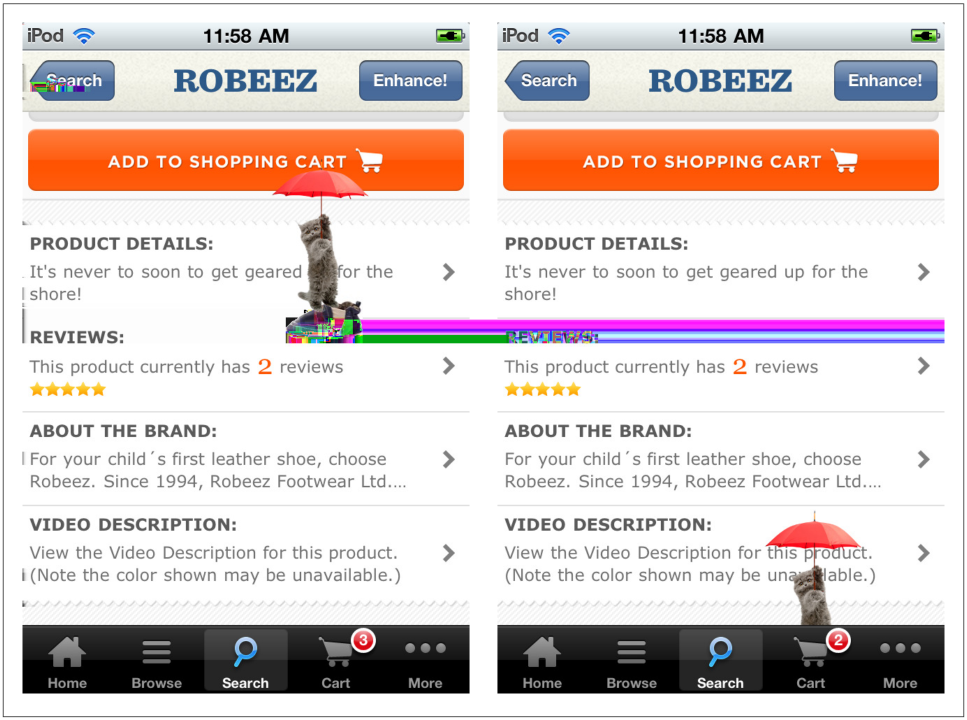
Sku 2343184 has been added to cart

Figure 10-16. Photobucket's registration and Best Buy

Uh, yeah. I'm sure I want to create an account, that would be why I filled in all the fields and tapped the big green button.

Best Buy relies on Idiot Boxes to provide feedback that an item has been added to the shopping cart. A less disruptive, and more effective technique for this is to simply increment the number of items in the cart. Zappos even goes a step farther and uses a transition to show the item being added to the cart, accomplishing two goals at once:

- providing feedback the item has been added
- showing the customer where the cart is accessed in the app.



PRODUCT DETAILS:

It's never to soon to get geared for the shore!

REVIEWS:

This product currently has 2 reviews

ABOUT THE BRAND:

For your child´s first leather shoe, choose Robeez. Since 1994, Robeez Footwear Ltd....

VIDEO DESCRIPTION:

View the Video Description for this product. (Note the color shown may be unavailable.)

PRODUCT DETAILS:

It's never to soon to get geared up for the shore!

REVIEWS:

This product currently has 2 reviews

ABOUT THE BRAND:

For your child´s first leather shoe, choose Robeez. Since 1994, Robeez Footwear Ltd....

VIDEO DESCRIPTION:

View the Video Description for this product. (Note the color shown may be unavailable.)

Figure 10-17. Zappos

You do not need to show a cat with an umbrella to provide adequate feedback. See Chapter 8, for more ideas.

Avoid disrupting the workflow, only show a confirmation dialog when an irreparable action is being taken (like a permanent delete).

Chart Junk

Edward Tufte coined the term *Chart Junk* in his 1983 book *The Visual Display of Quantitative Information*, in reference to charts like these:

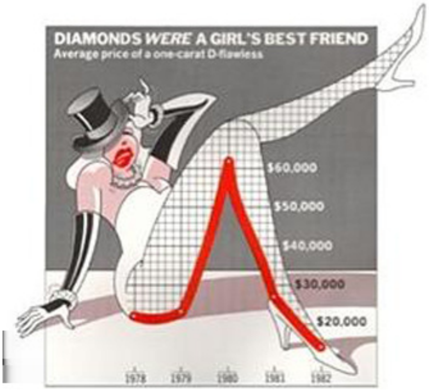
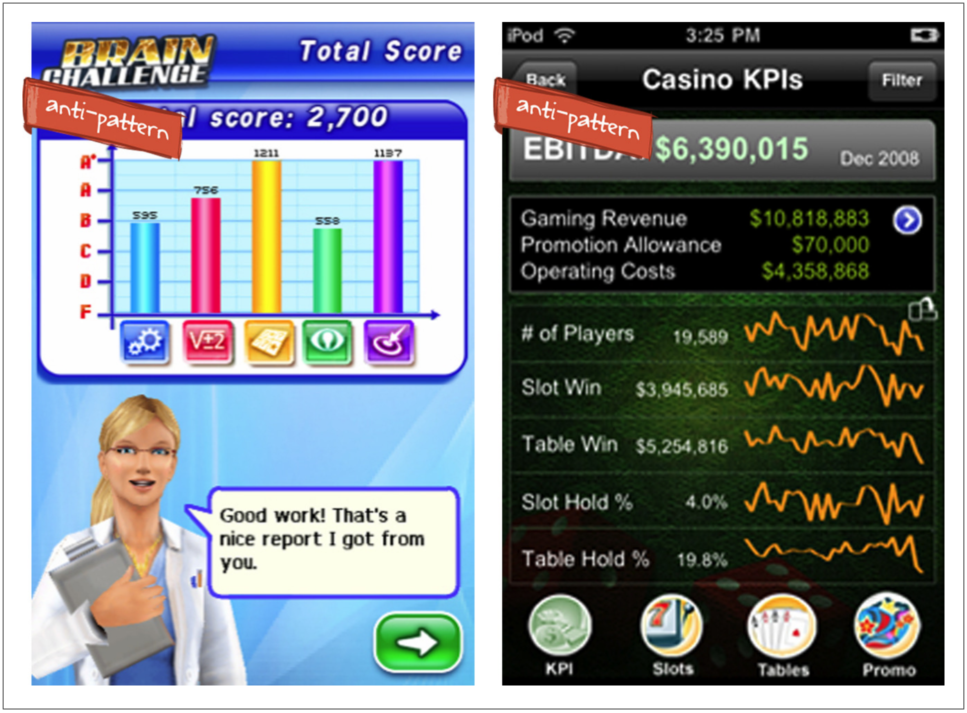


Figure 10-18. Chart junk or infographic?

I personally consider this to be a decent infographic, not Chart Junk. But I can get behind the anti-pattern of Chart Junk as "all the visual elements in charts and graphs that are not necessary to comprehend the information represented on the graph, or that distract the viewer from this information." [Wikipedia]

In this anti-pattern example from Brain Challenge (below), the design of the chart, from the double gradient columns, to the high gloss, beveled, shadowed, iconic buttons as labels, distracts more than it enhances the data. The next example from SmartGlance is almost illegible with its green felt table with rolling red dice in the background.



EBITDA $6,390,015 Dec 2008

Gaming Revenue $10,818,883
Promotion Allowance $70,000
Operating Costs $4,358,868

# of Players 19,589
Slot Win $3,945,685
Table Win $5,254,816
Slot Hold % 4.0%
Table Hold % 19.8%

Figure 10-19. Brain Challenge and SmartGlance

QlikView's reports module contains a couple of anti-patterns; metaphor mismatch for filtering and icons, novel notions for report selection, and chart junk. Roughly half the screen is used for an image carousel of possible charts (and their reflections). The rest of the screen is devoted to big, colorful 3D charts with illegible labels.

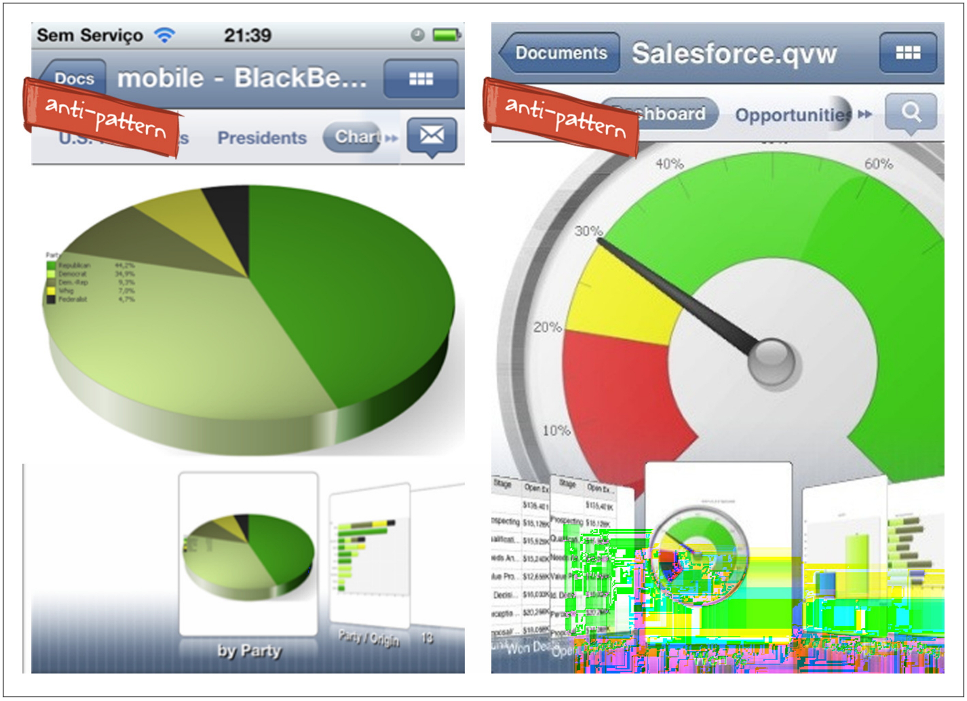
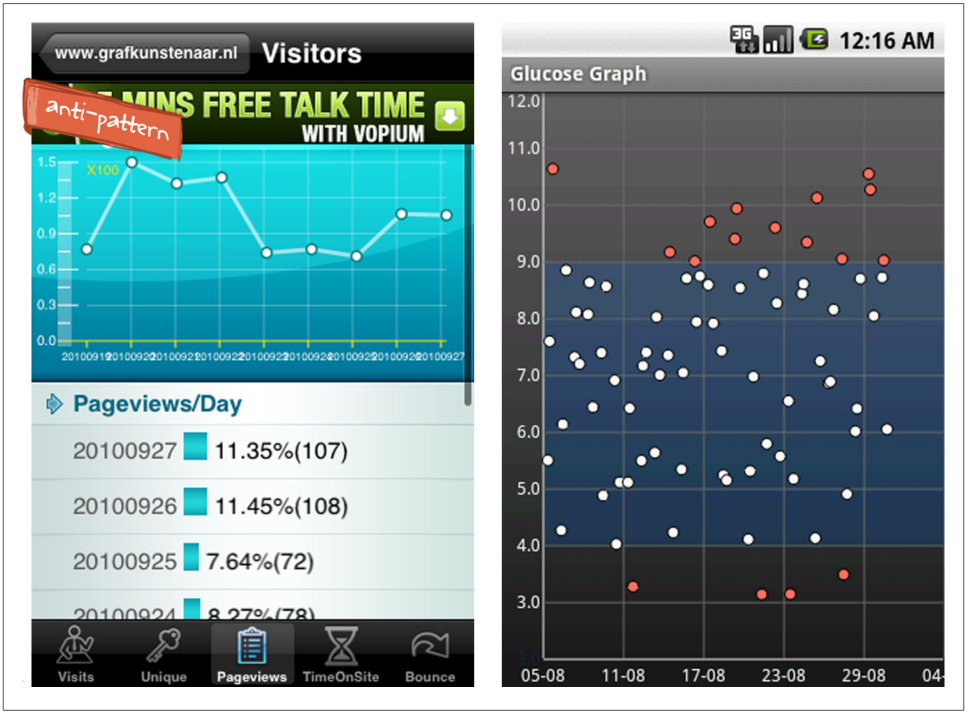


Figure 10-20. QlikView

But just because your chart is beautiful, doesn't mean it is in the clear. Chart Junk often poses as eye candy, and gets added to make the charts "sexier." For instance, in this analytics app, does the curved line reflect an average or a threshold? Nope, it's just part of the background. Compare this with Gerald Nunn's OnTrack app, which uses different colors to indicate which data are in and out of the normal range.



Pageviews/Day

20100927 11.35%(107)

20100926 11.45%(108)

20100925 7.64%(72)

20100924 8.27%(78)

Figure 10-21. Misleading chart background (left) and meaningful chart background (right)

WeatherPro has gorgeous charts, but they would be easier to read without the:

- alternating gradients in each column
- redundant y-axis labels
- hour increments

Shortening the day labels (Mon, Tue, Wed, etc.), would allow for larger, easier to read font. Oh, and a legend would help too. Upon further investigation, it turns out the "*i*" icon, will reveal the legend. Ideally, the legend would be displayed by default with an option to hide it, see Chapter 6.

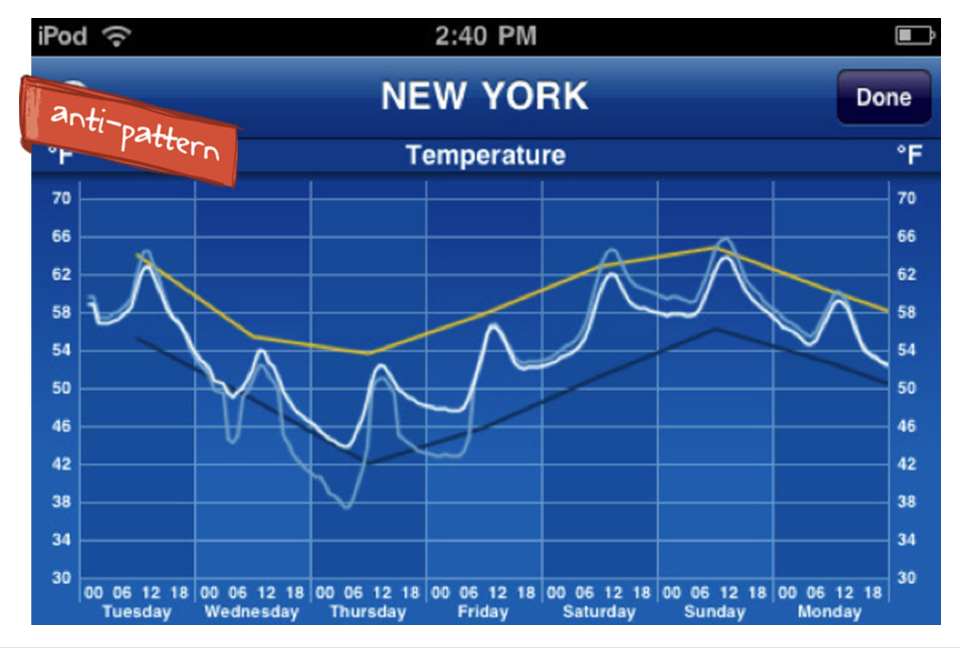
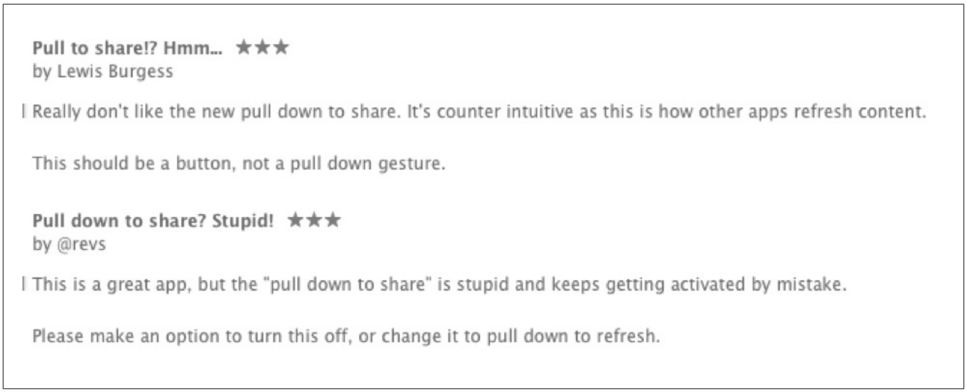


Figure 10-22. WeatherPro

While playing with WeatherPro, I stumbled upon another Metaphor Mismatch. To share a chart, you pull down the screen, a gesture that is normally used for refreshing data. See how their customers feel about that design decision:



Pull to share!? Hmm... ★★★
by Lewis Burgess

Really don't like the new pull down to share. It's counter intuitive as this is how other apps refresh content.

This should be a button, not a pull down gesture.

Pull down to share? Stupid! ★★★
by @revs

This is a great app, but the "pull down to share" is stupid and keeps getting activated by mistake.

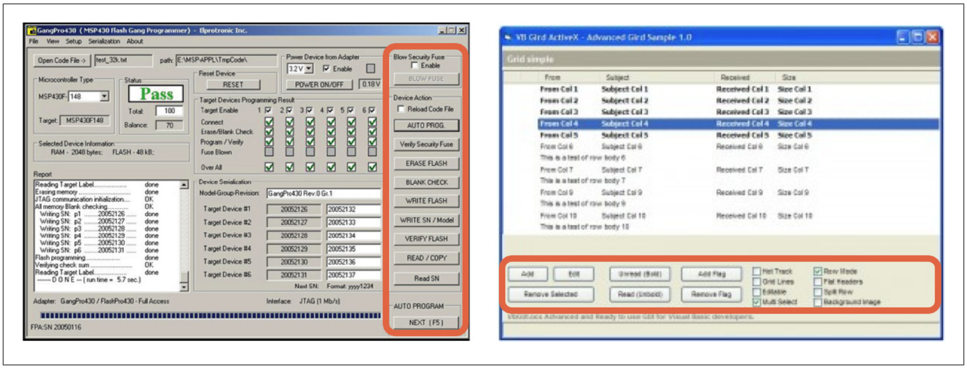
Please make an option to turn this off, or change it to pull down to refresh.

Figure 10-23. WeatherPro

Only use visual elements in charts and graphs that are necessary to communicate the information represented on the graph.

Oceans of Buttons

Bill Scott and I first named this anti-pattern while conducting usability reviews at Sabre Airline Solutions in 2002. We tasked our team with evaluating dozens of web and desktop applications to find the ones most in need of a UI redesign. Many of the applications were Java Swing or Visual Basic, and had a button bar either down the right or across the bottom. Sometimes there would be more buttons than could fit horizontally, so two rows were displayed. All the buttons were the same size and same color, basically the same visual weight, so it was difficult to determine which one to click without reading all of them.



test_32k.txt path: E:\MSP-APPL\TmpCode\

Power Device from Adapter: 3.2V ☑ Enable 0.18V

Blow Security Fuse: ☐ Enable

Device Action: ☐ Reload Code File

Microcontroller Type: MSP430F- 148 Target: MSP430F148

Status: Pass Total: 100 Balance: 70

Selected Device Information: RAM - 2048 bytes; FLASH - 48 kB;

Target Devices Programming Result	1	2	3	4	5	6
Target Enable	☑	☑	☑	☑	☑	☑
Connect	☑	☑	☑	☑	☑	☑
Erase/Blank Check	☑	☑	☑	☑	☑	☑
Program / Verify	☑	☑	☑	☑	☑	☑
Fuse Blown	☐	☐	☐	☐	☐	☐
Over All	☑	☑	☑	☑	☑	☑

Report

```
Reading Target Label..................      done
Erasing memory .......................      done
JTAG communication initialization....      OK
All memory Blank checking............      OK
  Writing SN:  p1 ........20052126 ......  done
  Writing SN:  p2 ........20052127 ......  done
  Writing SN:  p3 ........20052128 ......  done
  Writing SN:  p4 ........20052129 ......  done
  Writing SN:  p5 ........20052130 ......  done
  Writing SN:  p6 ........20052131 ......  done
Flash programming ....................      done
Verifying check sum ..................      OK
Reading Target Label..................      done
 ------- D O N E -- ( run time =  5.7 sec.)
```

Device Serialization

Model-Group-Revision: GangPro430 Rev.0 Gr.1

Target Device #1	20052126	20052132
Target Device #2	20052127	20052133
Target Device #3	20052128	20052134
Target Device #4	20052129	20052135
Target Device #5	20052130	20052136
Target Device #6	20052131	20052137

Next SN: Format: yyyy1234

Adapter: GangPro430 / FlashPro430 - Full Access Interface: JTAG (1 Mb/s)

AUTO PROGRAM

FPA:SN 20050116

From	Subject	Received	Size
From Col 1	Subject Col 1	Received Col 1	Size Col 1
From Col 2	Subject Col 2	Received Col 2	Size Col 2
From Col 3	Subject Col 3	Received Col 3	Size Col 3
From Col 4	Subject Col 4	Received Col 4	Size Col 4
From Col 5	Subject Col 5	Received Col 5	Size Col 5
From Col 6 This is a test of row body 6	Subject Col 6	Received Col 6	Size Col 6
From Col 7 This is a test of row body 7	Subject Col 7	Received Col 7	Size Col 7
From Col 9 This is a test of row body 9	Subject Col 9	Received Col 9	Size Col 9
From Col 10 This is a test of row body 10	Subject Col 10	Received Col 10	Size Col 10

☐ Hot Track ☐ Grid Lines ☐ Editable ☑ Multi Select ☑ Row Mode ☐ Flat Headers ☐ Split Row ☐ Background Image

VbGrid.ocx Advanced and Ready to use Grid for Visual Basic developers.

Figure 10-24. Oceans of buttons in Visual Basic and Java desktop applications

eBay's Android app suffers from Oceans of Buttons; however, their iPhone app uses the Dashboard pattern, which is a good solution for this anti-pattern.

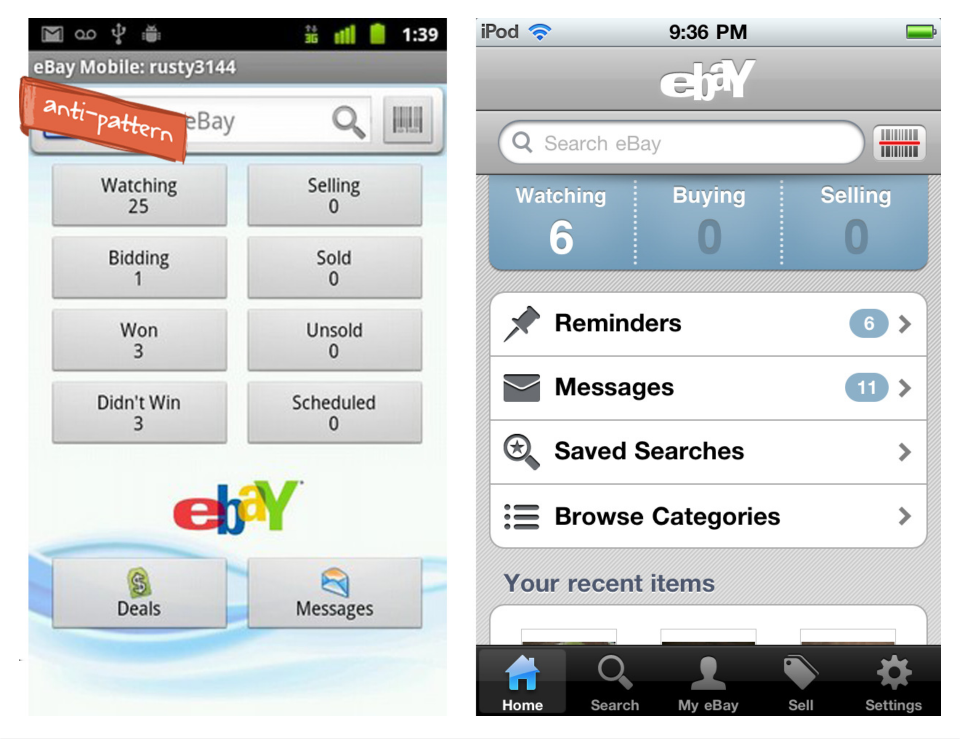


Figure 10-25. eBay Android, oceans of buttons; eBay iOS, no ocean

Footfeed (below) shows every option for every activity in the feed. 1Mobile shows the same button on every table in the row. Contextual tools are a better choice when you find yourself repeating the same buttons for every row in a list or table, Chapter 5.

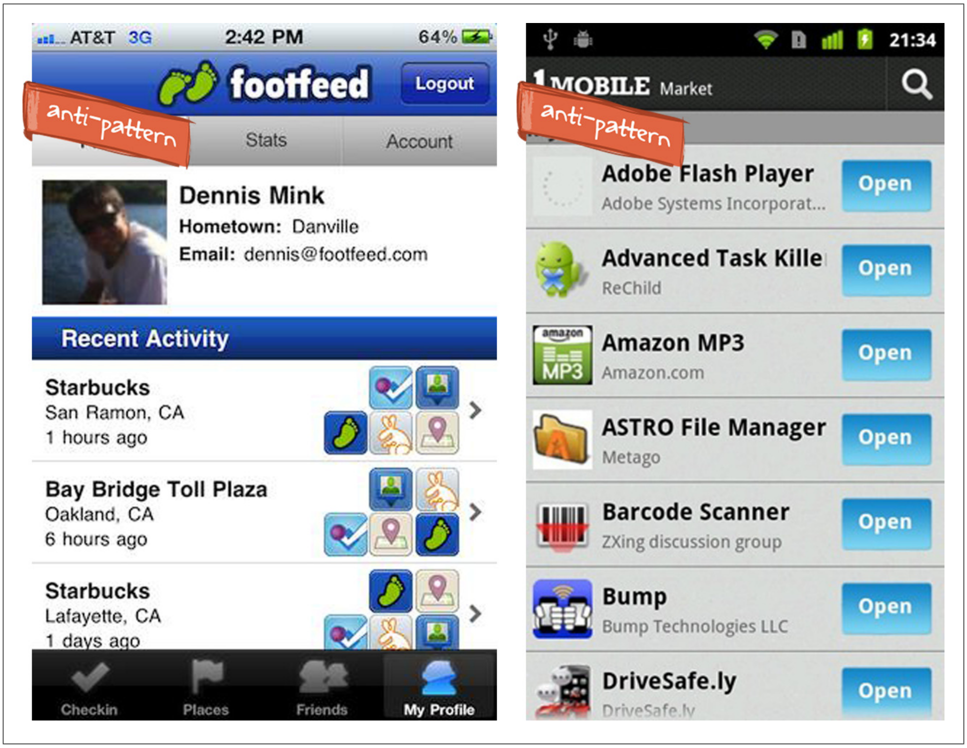
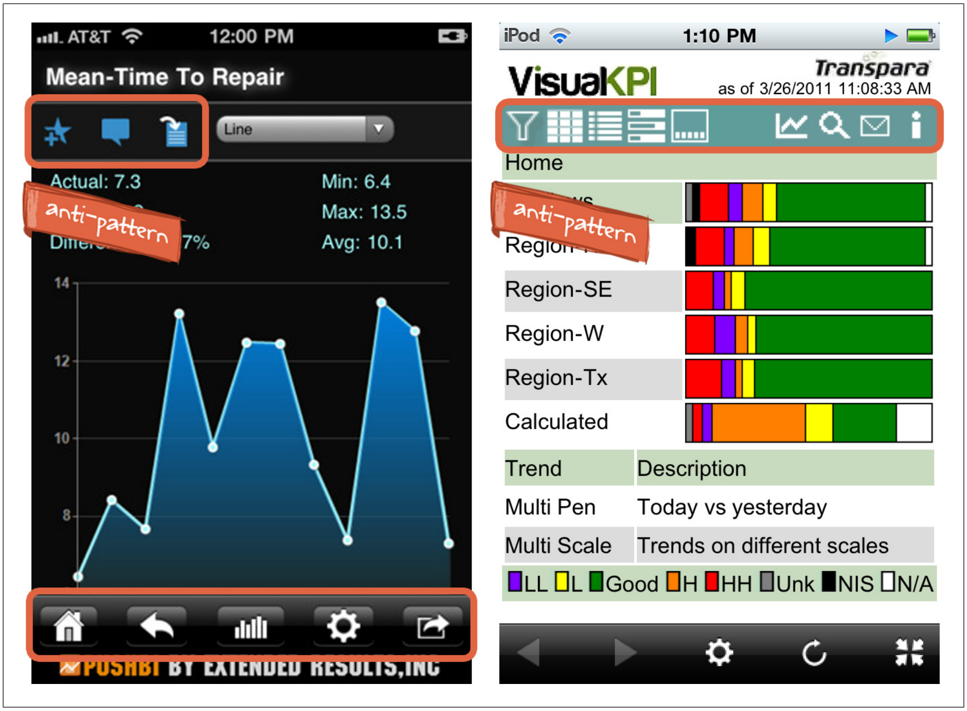


Figure 10-26. Footfeed and 1Mobile Market: Replace repeating buttons with contextual tools

At first glance, Pushbi appears to have a standard action bar, but in reality, it is just an Ocean of Buttons. Navigation buttons are intermingled with action buttons (Home, Back, Chart, Settings, Share). Even more buttons, presumably only applicable to this one chart, are displayed up top. VisualKPI has a similar problem, but their ocean floats above the chart.



Trend	Description
Multi Pen	Today vs yesterday
Multi Scale	Trends on different scales

Figure 10-27. Pushbi and VisualKPI

Use standard patterns for displaying page level actions. Provide contextual tools for item level actions instead of repeating the same button. Keep page level actions visually separate from navigational elements.

Additional Resources

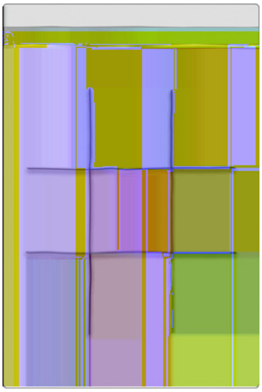
Companion website and blog at www.mobiledesignpatterngallery.com.

Checkout the flickr photostream for more examples of each pattern.

For expert mobile design tips, follow me on @mobilepatterns.

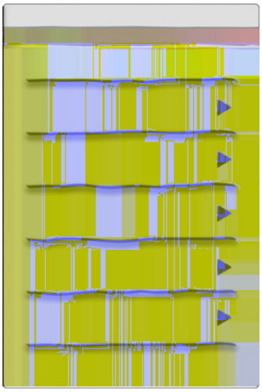
Navigation

Primary Navigation



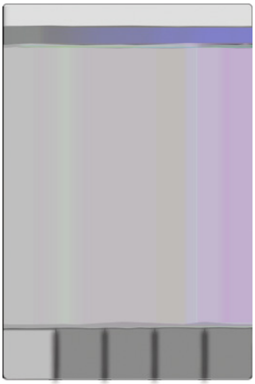
Springboard

Use a grid layout for items of equal importance, or an irregular layout to emphasize some items more than others. Consider personalization and customization options.



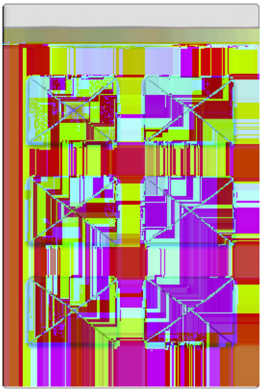
List Menu

List Menus work well for long titles or those that require sub text. Applications using List Menus should offer an option on all internal screens for returning to the List Menu, usually a button in the title bar with a list icon or the word “menu.”



Tabs

Clearly indicate the selected menu item by visually differentiating the selected tab from the others. Use easy to recognize icons or icons with labels.



Gallery

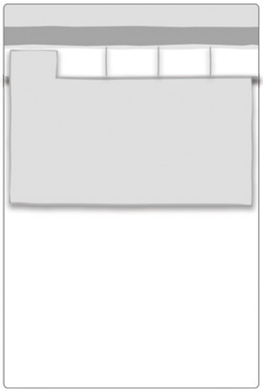
The Gallery pattern works best for frequently updated content that people want to browse.

Dashboard

Don't overload the dashboard; conduct research to determine the key metrics to include.

Metaphor

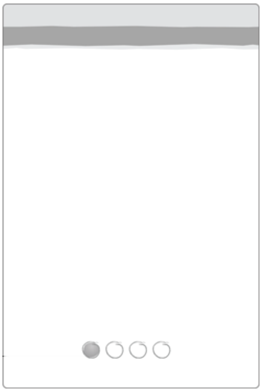
Use the Metaphor pattern judiciously, as a poorly implemented metaphor can look a lot like the Novel Notion anti-pattern in Chapter 9.



Mega Menu

Determine your information architecture before choosing the navigation pattern. Choose a more appropriate pattern, like Tabs, if there are only a few major sections in the app.

Secondary Navigation

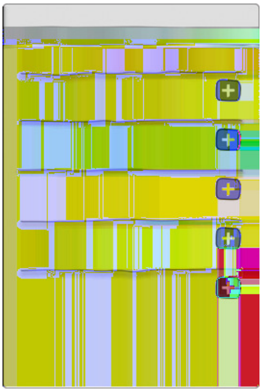


Page Carousel

The page carousel works best for navigating a small number of pages. Use a visual indicator to reflect the number of screens, and current screen. Flick is the common gesture to navigate the carousel.

Image Carousel

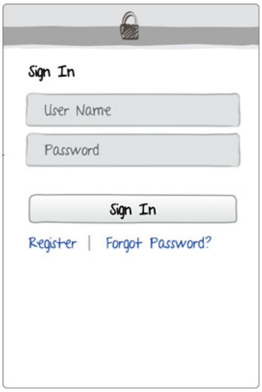
The Image Carousel works best for displaying fresh visual content, like articles, products, and photos. Provide visual affordance, either with arrows, partial images, or page indicators (dots) that more content can be accessed.



Expanding List

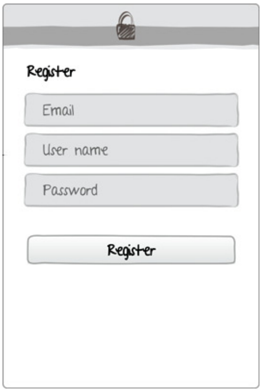
The Expanding List pattern works best for progressively disclosing more details or options for an object.

Forms



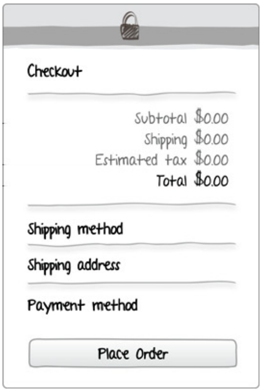
Sign In

Don't innovate on the sign in screen, use best practices to make it easy for users to get signed in. Provide a way to retrieve a forgotten password.



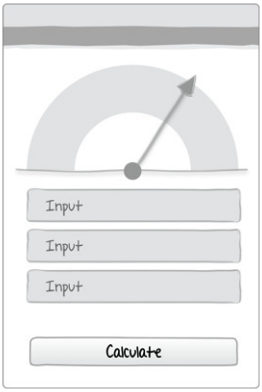
Registration

Keep it short, preferably one screen, with the Register button above the fold. Make it simple for an already registered use to sign in.



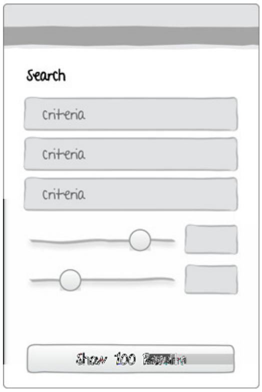
Checkout

Design for speed, efficiency, and reassurance. Eliminate unnecessary fields and minimize the number of pages and steps.



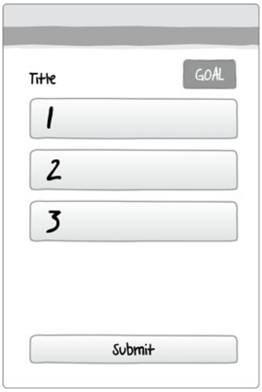
Calculate

Use standard form conventions for design and layout. If possible, visualize the results in the same page.



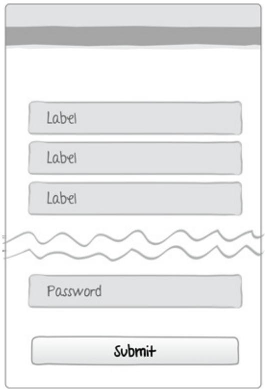
Search Criteria

Avoid overwhelming the user with options; aim for a single page of criteria. Use appropriate controls that are finger friendly and fast.



Multi-Step

Show the user where they are and where they can go. Eliminate unnecessary fields and minimize the number of pages and steps.



Long Form

Don't artificially break the form into steps just to prevent scrolling. Do ruthlessly edit the form for any unnecessary fields. Follow OS standards for button placement.

Tables

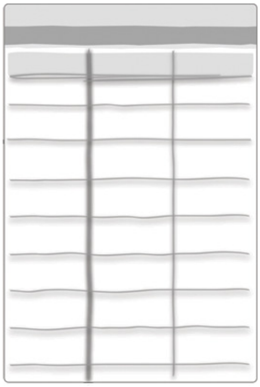
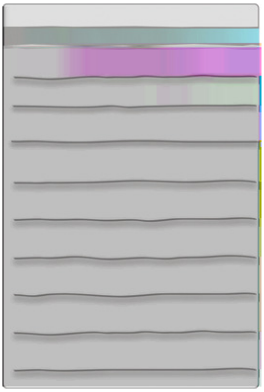


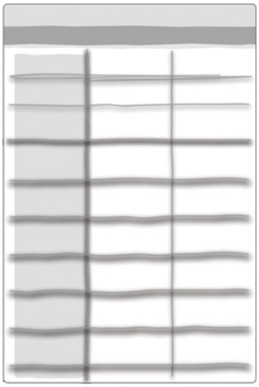
Table with Header

Avoid using dark gridlines and vertical dividers. Left align text and right align numbers. Don't overload the screen. Consider an alternate pattern if there is too much information to fit on a single screen.



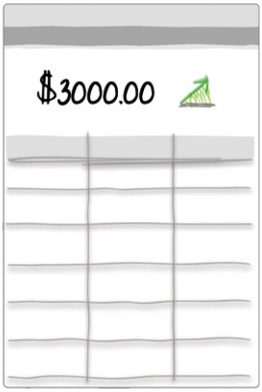
Headerless Table

Three rows of information maximum per fat row. Use smaller and/or lighter font for less important details. Don't guess what the most important information is, ask your customers and validate the designs.



Fixed Column

Provide visual affordance which column is fixed, and that swiping can reveal more data.

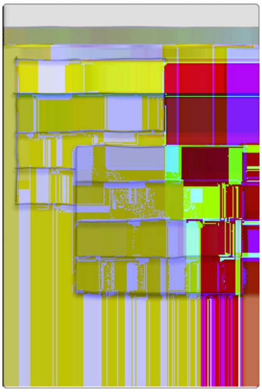


Overview plus Data

The Overview should be presented above the Data and be easy to understand at a glance.

Grouped Rows

Visually differentiate the summary rows from the other rows in the table.



Cascading List

Use a fairly flat information hierarchy to avoid deep drilling (more than 3 levels) in the application. Deep drilling may not be avoidable if the Cascading List pattern is used to navigate a user defined information hierarchy.

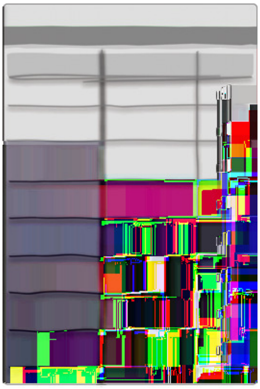
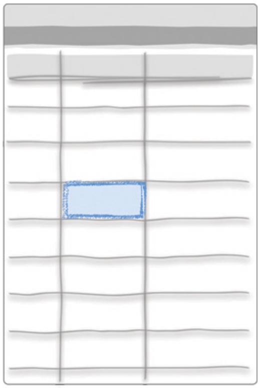


Table with Visual Indicators

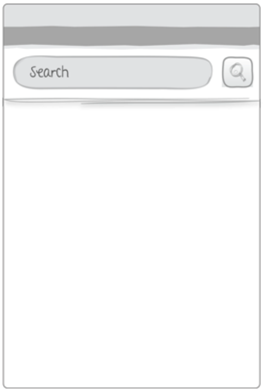
Choose visual indicators that are immediately recognizable; avoid gratuitous icon use.



Editable Table

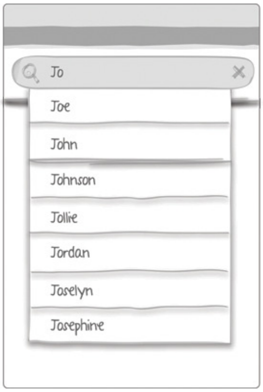
Leverage web and desktop design best practices for editable tables. Avoid using editable tables for bulk data entry, or when extensive amounts of edits could be necessary.

Search



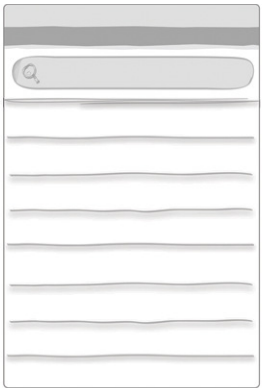
Explicit Search

Offer a clear button in the field and an option to cancel the search. Use feedback to show the search is being performed (Chapter 8, Feedback & Affordance).



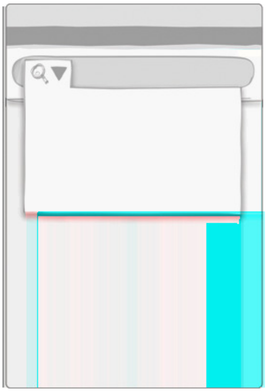
Search with Auto-complete

Show feedback if there could be a delay in displaying the results. Consider emphasizing the matching search text in the search results.



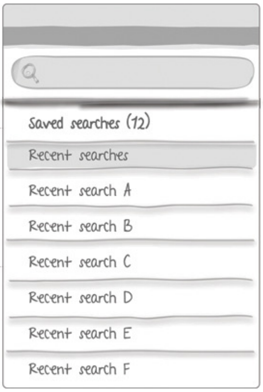
Dynamic Search

Works well for constrained data sets, like an address book or personal media library, but may be impractical for searching huge data sets.



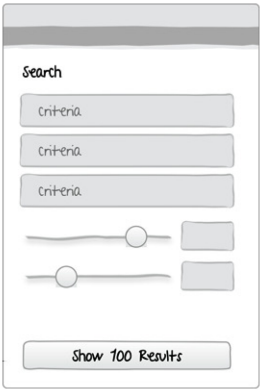
Scoped Search

Offer reasonable scoping options based on the data set. Three to six scoping options are plenty; consider a search form for advanced searching capabilities.



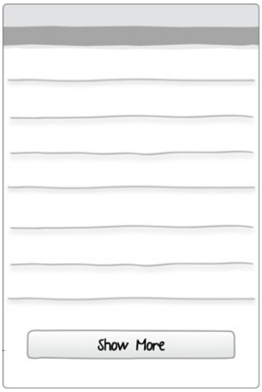
Saved and Recent Searches

Saved searches typically require additional steps for naming a search for reference later, whereas recent searches are implicitly saved and surfaced. Consider which one will best serve your users' needs.



Search Form

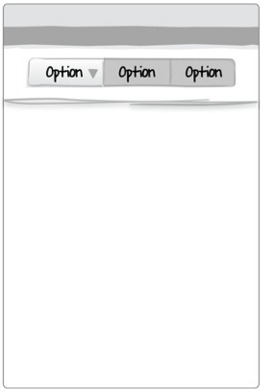
Minimize the number of input fields. Implement OS specific input controls properly. Follow form design best practices (alignment, labels, size), see Chapter 2.



Search Results/View Results

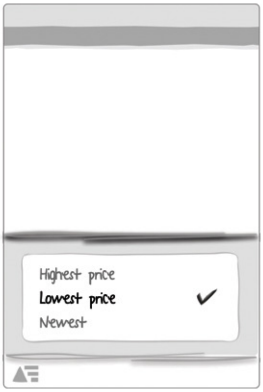
Label the results with the number returned. Use live scroll instead of paging. Apply a reasonable default sort order.

Sort Patterns



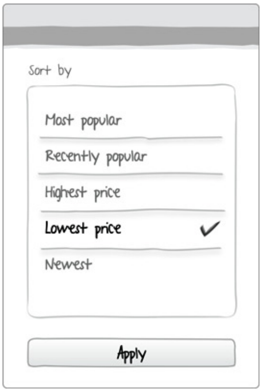
Onscreen Sort

Clearly show which option is selected or "on." Consider the Sort Order Selector pattern if the option labels don't fit nicely in a toggle button bar.



Sort Order Selector

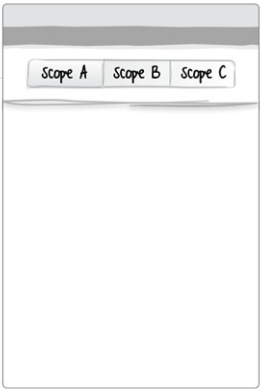
Follow OS design conventions for choosing the selector control, or choose an OS neutral interface control. Clearly show which sort option is applied.



Sort Form

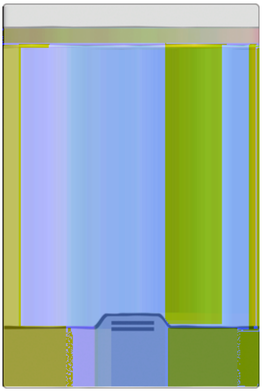
Consider a lightweight sort option toggle or sort order selector patterns before choosing this pattern.

Filter



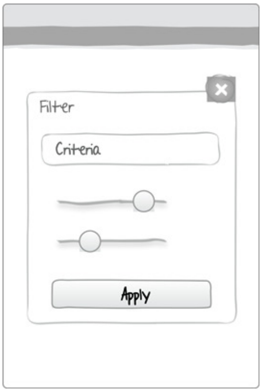
Onscreen Filter

Filter options should be clearly worded and easy to understand. Show the filters that are applied or "on." Don't use this filter pattern for navigation, see Chapter 9, Metaphor Mismatch.



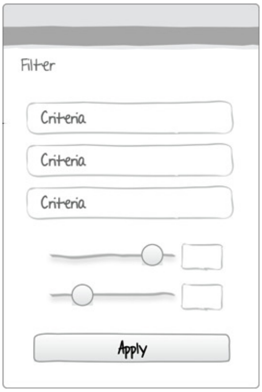
Filter Drawer

Keep the options list short, avoid scrolling. Consider a Filter Form for lengthier or multi-select filter options. See Chapter 6, Charts with Filters for examples on filtering chart data.



Filter Dialog

Keep the options list short, avoid scrolling. Consider a Filter Form for lengthier or multi-select filter options. See Chapter 6, Charts with Filters for examples on filtering chart data.



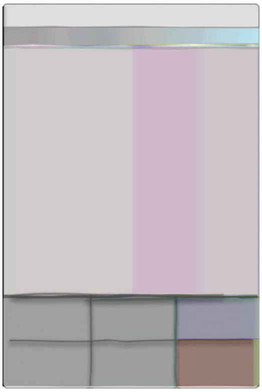
Filter Form

Don't over-design the filter, a simple onscreen filter or drawer will usually suffice. If a Filter Form is necessary, follow form design best practices.

Tools

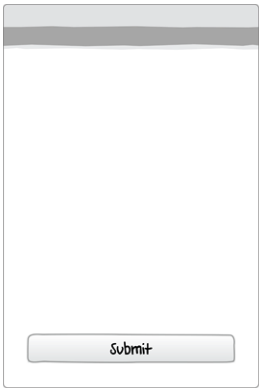
Toolbar

Toolbars are generally displayed at the bottom of the screen and contain screen level actions. Choose icons that that are familiar and easy to recognize, or use labels plus icons.



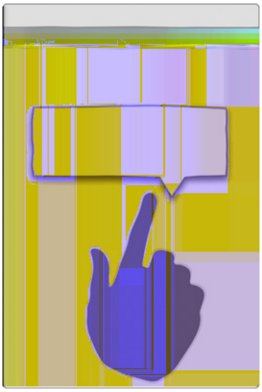
Option Menu

Choose direct interactions when possible. Don't hide navigation in the Option Menu. Consider the Call to Action Button pattern if you have a single action for the screen.



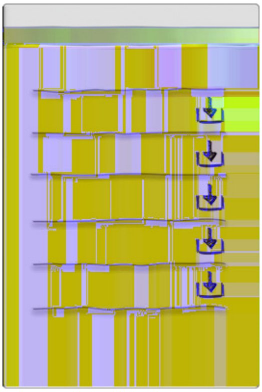
Call to Action Button

Don't hide the main call to action in a menu or disguise it as an unrecognizable icon in a toolbar. Make it obvious (good contrast) and spell it out (clear label).



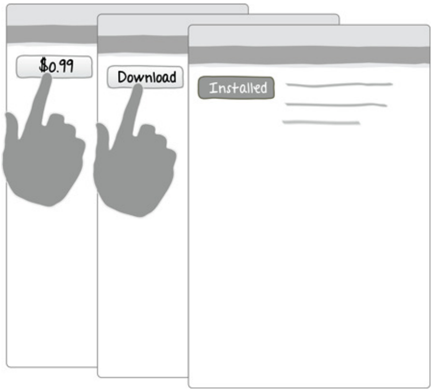
Contextual Tools

Choose direct interactions when possible. If buttons are necessary, they should be displayed in proximity to the actionable object. Choose a familiar icon or use a text label.



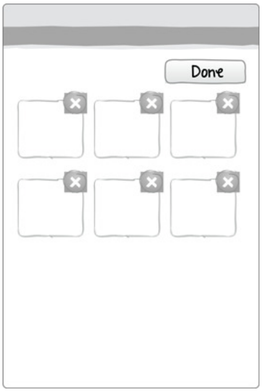
Inline Actions

Choose direct interactions when possible. Inline Actions should be in proximity to the actionable object. Choose a familiar icon or use a text label. Max one to two Inline Actions per object.



Multi-State Button

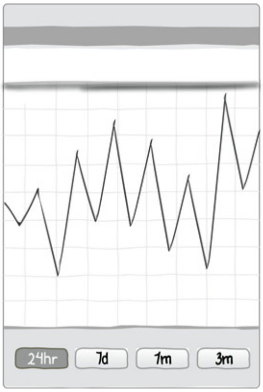
Multi-State Buttons work well for a series of tightly correlated actions that will to be performed in succession with limited screen real-estate.



Bulk Actions

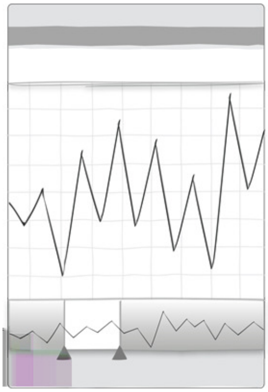
Bulk actions like delete and reorder are best handled in an edit mode. Provide an obvious option for exiting the mode.

Charts



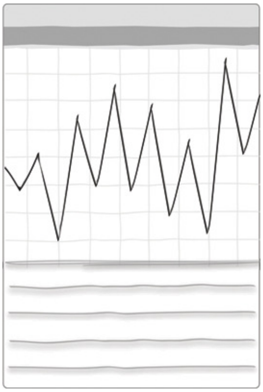
Charts with Filters

Use standard UI filter controls and patterns, see Chapter 4. Dynamically update the chart instead of using an "Apply" button.



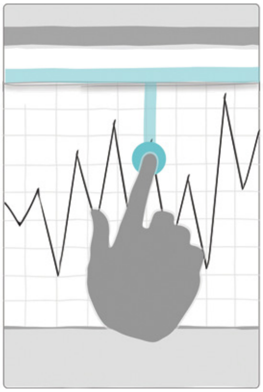
Preview Window

The nature of the chart should determine if the preview window is read-only or interactive. If it is interactive, use large enough touch targets for easy manipulation.



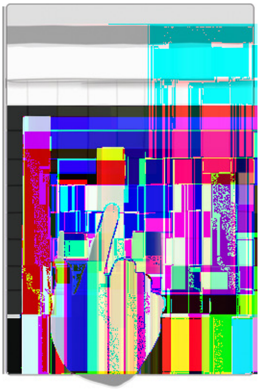
Overview plus Data

Test the chart to see if people can answer three simple questions: what is the topic, what is the important information, what are the values for the important information.



Datapoint Details

Charts on the Web have created an expectation for details to be displayed onHover. Consider implementing Datapoint Details onTap to provide the additional information users want.

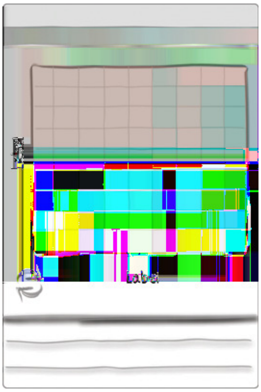


Drill Down

Invite the user drill down for more data. Use breadcrumbs to show the hierarchy.

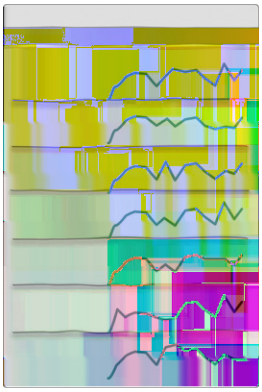
Zoom

Invite the user to rotate to landscape for a full screen view; automatically restore navigation when the device rotates back to portrait.



Pivot Table

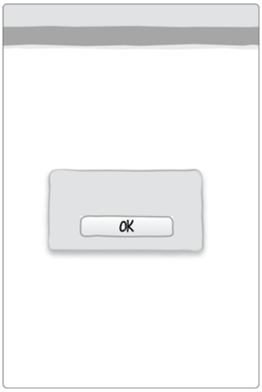
Keep the pivot table selection and resulting chart in a single screen. Apply the selections dynamically.



Sparklines

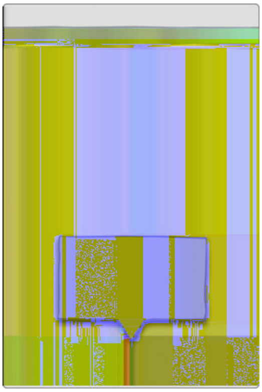
Follow sparkline design conventions. Validate the designs with your users. Consider combining Sparklines plus the Drill Down pattern to reveal the full chart details.

Invitations



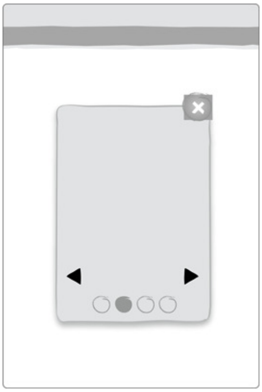
Dialog

Keep dialog content short, and make sure there is an alternate way to access instructions from within the application.



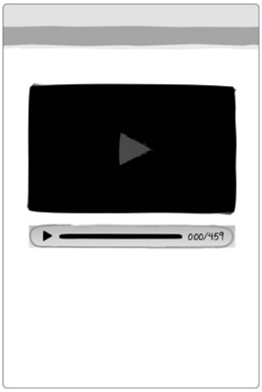
Tip

Place tips in proximity to the feature they refer to, keep the content short, and remove the tip once interaction begins (i.e., when the screen is touched).



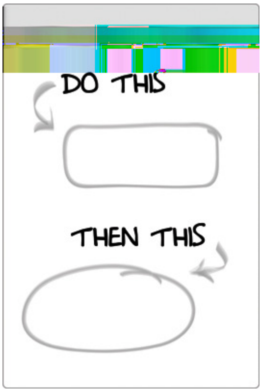
Tour

A tour should highlight key features of the application, preferably from a (user) goal perspective. Keep it short and visually engaging.



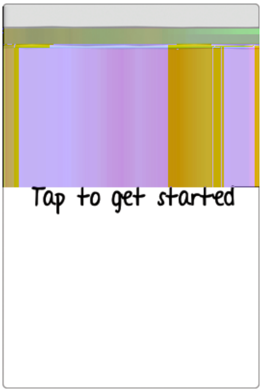
Video Demo

Demos should showcase key features or show how to use the application from a standard workflow perspective. Common video features (stop, pause, volume controls, etc,...) should be provided.



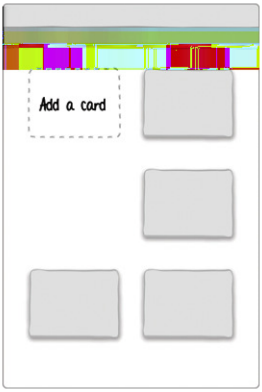
Transparency

Transparencies should be used judiciously, and are not meant to compensate for poor screen designs. Remove the Transparency once interaction begins (i.e., when the screen is touched).



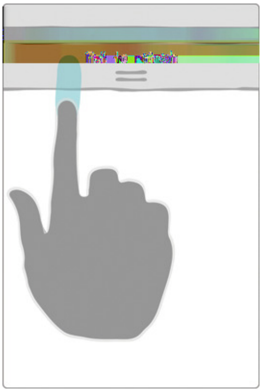
1st Time Through

Clearly differentiate the invitation from other content with images or other visual cues (i.e., don't use the same color and size text for the invitation as is used for regular content).



Persistent

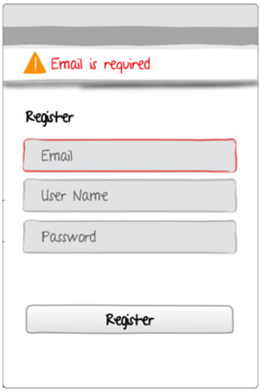
Keep it short. Clearly differentiate the invitation from other content with images or other visual cues (i.e., don't use the same color and size text for the invitation as is used for regular content).



Discoverable

Use Discoverable invitations sparingly. The most common instance of this pattern is for prompting a data refresh.

Feedback


Email is required

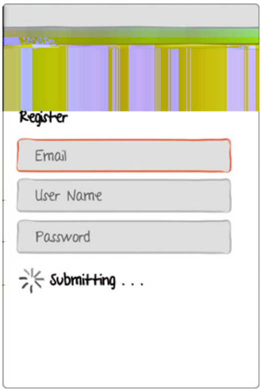
Error Messages

Use plain language that offers a solution for resolving the issue. Make the error visible; use in-screen messaging instead of modal dialogs.

Registration complete

Confirmation

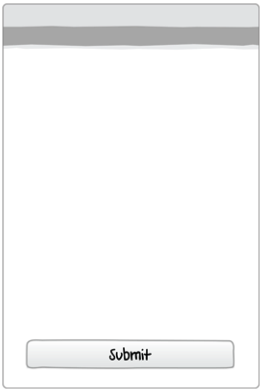
Provide confirmation when an action is taken, but don't break the user's flow to do so. See Chapter 10, Idiot Boxes.



System Status

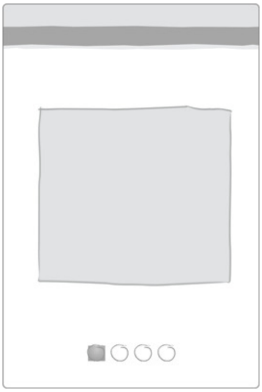
Provide feedback about the system's status. Offer a cancel option for potentially lengthy operations.

Affordance



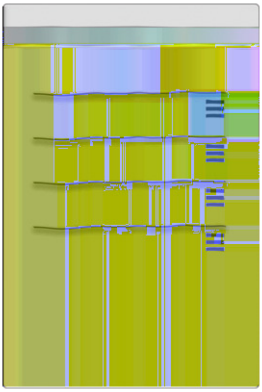
Tap

Use common visual design techniques to indicate tappable controls. But apply 3D effects judiciously, extra shadows and bevels can decrease readability.



Flick

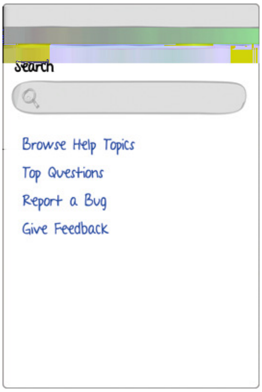
Use a page indicator or show the edge of the next item to provide affordance that flicking will reveal more items. Avoid heavy weight scroll bars.



Drag

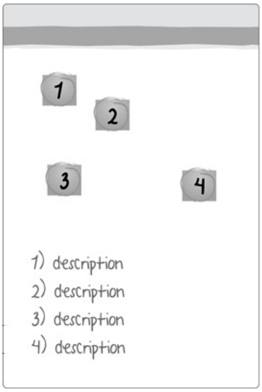
Use a recognizable icon for the handle. Consider using an invitation along with the drag handle to let users know this feature is available.

Help



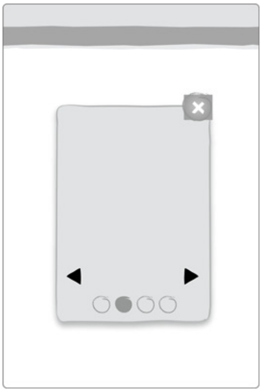
How To

Use a combination of screenshots, illustrations, and text to communicate in a How To.



Cheat Sheet

A Cheat Sheet is no substitute for good design, but it can help users get comfortable and productive with the application.



Tour

A Tour should highlight key features of the application, preferably from a (user) goal perspective. Keep it short and visually engaging.

About the Author

Theresa Neil works as a user experience consultant in Austin, Texas. Her small team of seasoned UX designers and developers work closely with clients to create applications that make people happy, productive, and confident. Her newest project is a tablet application for restaurants that will allow customers to order from their table. Check out other projects on her site, www.theresaneil.com, and follow her on Twitter @theresaneil.