



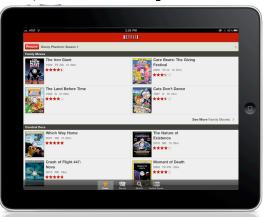
**Designing for Mice & Men** 

Bill Scott, Netflix

### Netflix Across Devices (in-house products)









### Netflix Across Devices (in-house products)









3

### **Netflix Across Devices (in-house products)**

Web

**Tablet** 

**Mobile** 

TV

### **Netflix Across Devices (in-house products)**

HTML5 HTML5

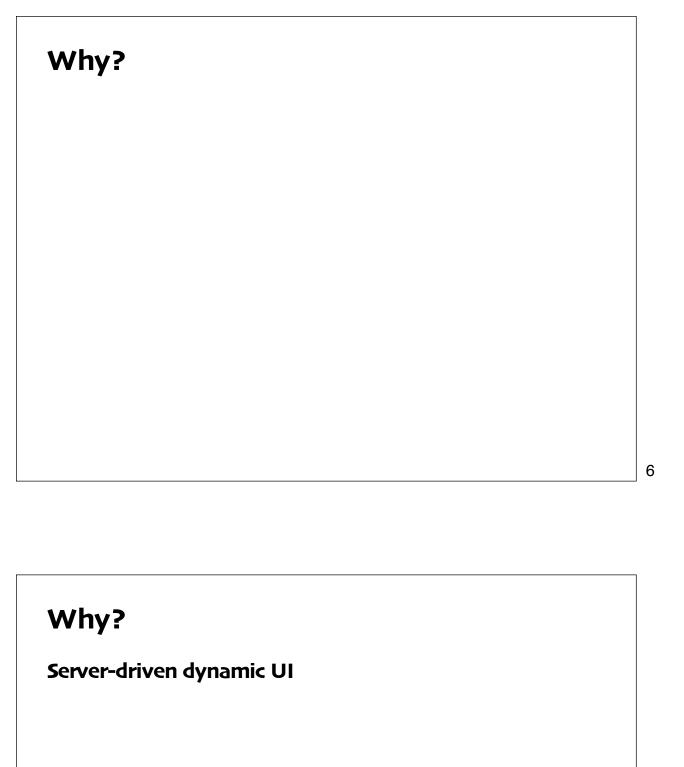
HTML5 HTML5

4

### **Common Platform Across Devices**

Web Browser iOS Webkit

iOS Webkit & Skia Webkit



Server-driven dynamic UI

6

### Why?

Server-driven dynamic UI

Web-style release vs CE firmware updates

Server-driven dynamic UI

Web-style release vs CE firmware updates

6

### Why?

Server-driven dynamic UI

Web-style release vs CE firmware updates

Support A/B Testing

Server-driven dynamic UI

Web-style release vs CE firmware updates

Support A/B Testing

6

### Why?

Server-driven dynamic UI

Web-style release vs CE firmware updates

Support A/B Testing

Learn Fast/Fail Quickly

Server-driven dynamic UI

Web-style release vs CE firmware updates

Support A/B Testing

Learn Fast/Fail Quickly

6

### Why?

Server-driven dynamic UI

Web-style release vs CE firmware updates

Support A/B Testing

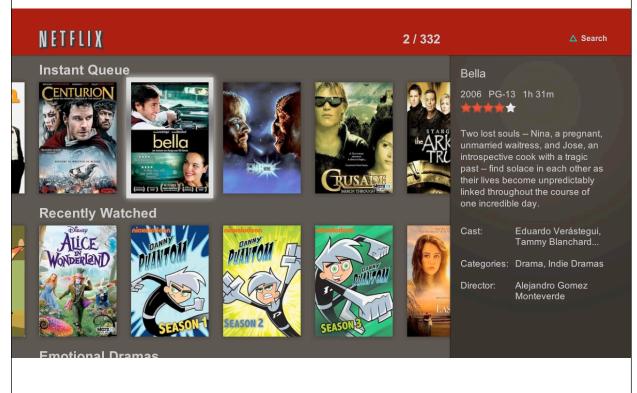
Learn Fast/Fail Quickly

**Chaos Otherwise** 





### **Controlled Variances**



9

### **Managing Across Platforms**

We chose a portability layer (html5)

10

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We chose a portability layer (html5)

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However, we vary the user experience across platforms (web, tv, mobile, tablet)

10

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We design for user posture, input capabilities, navigation styles and display capabilities

10

### **Managing Across Platforms**

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We chose a portability layer (html5)

However, we vary the user experience across platforms (web, tv, mobile, tablet)

We design for user posture, input capabilities, navigation styles and display capabilities

Try to embrace the constraints (design for mobile first!)



**Designing for Mice & Men** 



### **Designing for Mice & Men**



Wel

Input

**Indirect**. Pointer/keyboard

**Navigation** 

Controls & windows

**Posture** 

Stationary

Display

Hi-Rez, large, near

11



### **Designing for Mice & Men**



Input

Web

TV

Input

**Indirect**. Pointer/keyboard **Indirect**. LRUD/OSK

Navigation Navigation

Controls & windows Panes

**Posture** 

Stationary

**Display** Hi-Rez, large, near Posture

Lean Back **Display** 

Hi-Rez, far-away



### Designing for Mice & Men



Web

Input

Indirect. Pointer/keyboard

**Navigation** 

Controls & windows

**Posture** 

Stationary

**Display** 

Hi-Rez, large, near



TV

Input

Indirect. LRUD/OSK

**Navigation** 

Panes

Posture

Lean Back

Display

Hi-Rez, far-away



Mobile

Input

**Direct**. Gesture/OSK

**Navigation** 

Panes

**Posture** 

On-the-go

Display

Hi-Rez, small, near

11



### Designing for Mice & Men



Web

Input

Indirect. Pointer/keyboard

**Navigation** 

Controls & windows

Posture

Stationary

**Display** Hi-Rez, large, near



TV

Input

Indirect. LRUD/OSK
Navigation

Panes

Posture

Lean Back

Display

Hi-Rez, far-away



Mobile

Input

**Direct.** Gesture/OSK **Navigation** 

Panes

-

**Posture** On-the-go

**Display** Hi-Rez, small, near



Tablet

Input

**Direct**. Gesture/OSK

**Navigation** 

Panes

**Posture** 

On-the-go, lean back shared

Display

Hi-Rez, medium, near



### So what's common?

### design principles

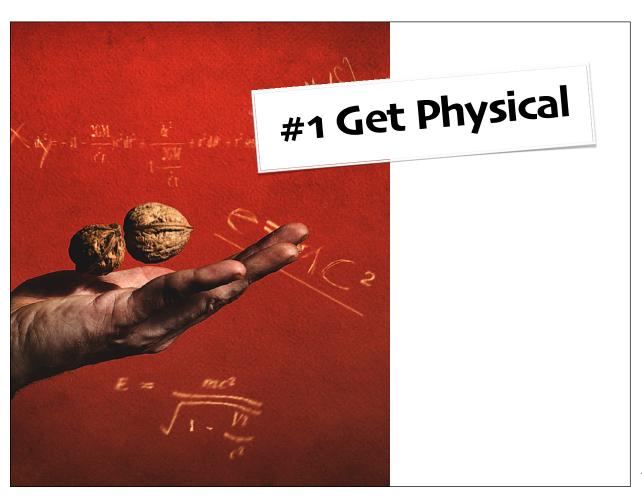
fundamental, universal ideas that underpin good design across different input methods, display capabilities and user posture

but the application of principles varies across **input**, **posture**, **navigation & display** 



### Three Principles

common design principles for multiple platform design



### The Illusion of Physicality



15

### The Illusion of Physicality



## The Illusion of Physicality + "Finger painting" "Paint on Paper"

"My finger is out of Purple!?"

15

### **Design for Physicality**

### **Design for Physicality**

Whenever possible, add a realistic, physical dimension to your application.

16

### **Design for Physicality**

Whenever possible, add a realistic, physical dimension to your application.

The more true to life your application looks and behaves, the easier it is for people to understand how it works and the more they enjoy using it.

### **Design for Physicality**

Whenever possible, add a realistic, physical dimension to your application.

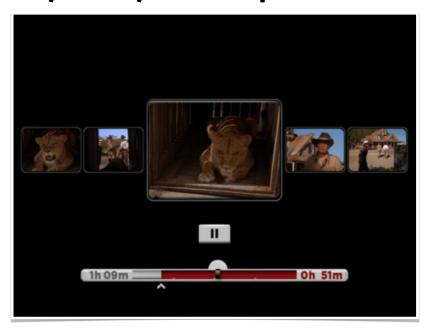
The more true to life your application looks and behaves, the easier it is for people to understand how it works and the more they enjoy using it.

- Apple HIG

16

## Use Metaphors to Embody Physicality

### **Physicality as Metaphor**



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### **Physicality as Metaphor**



Film Strip



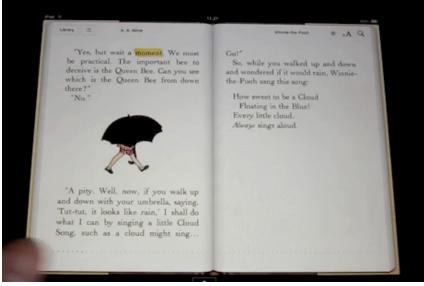
### **Physicality as Metaphor**



ook

19

### **Physicality as Metaphor**



ook

"Books have pages"

"Pages turn"

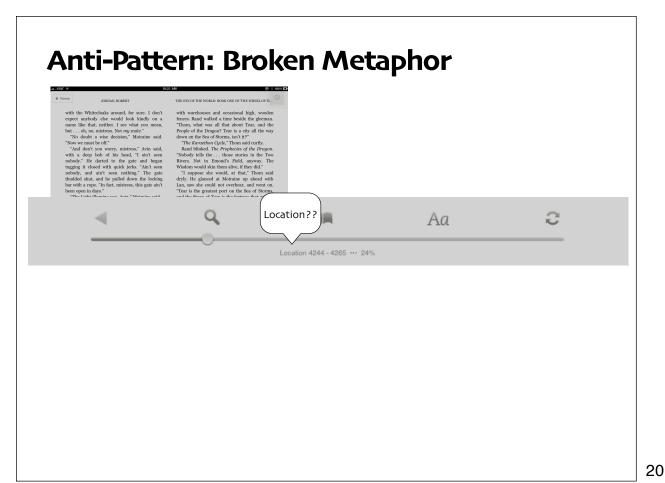
### Anti-Pattern: Broken Metaphor

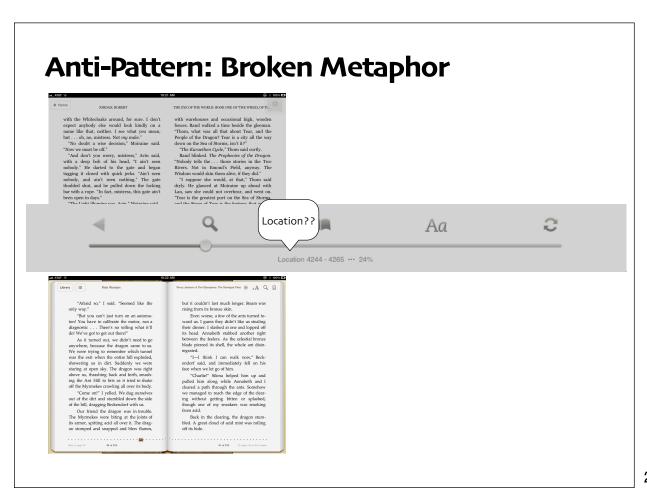


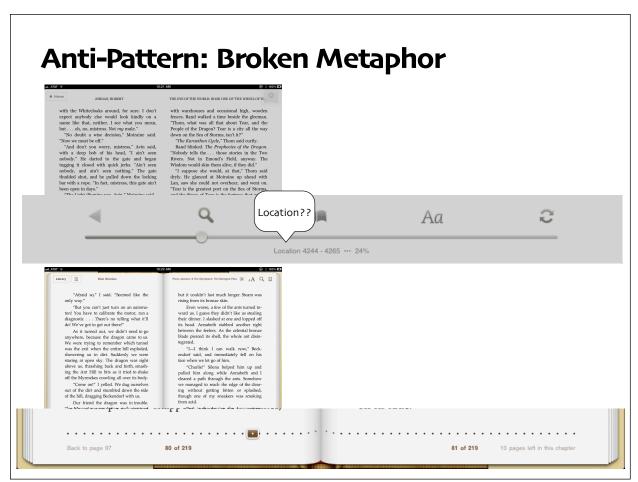
20

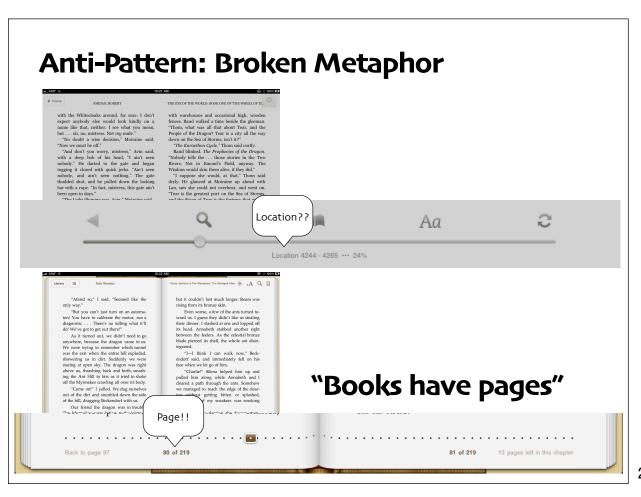
### Anti-Pattern: Broken Metaphor

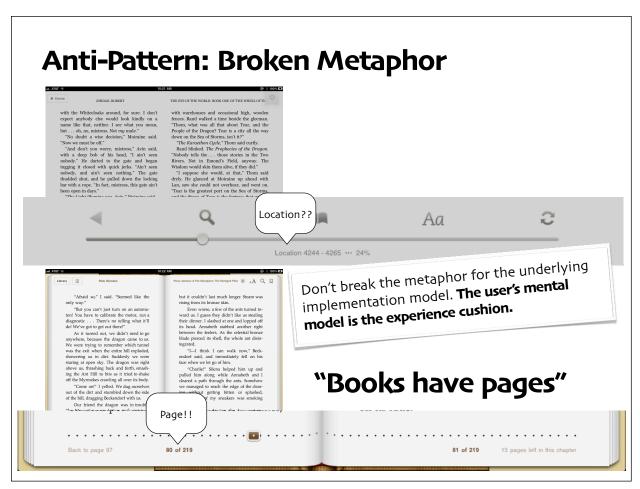




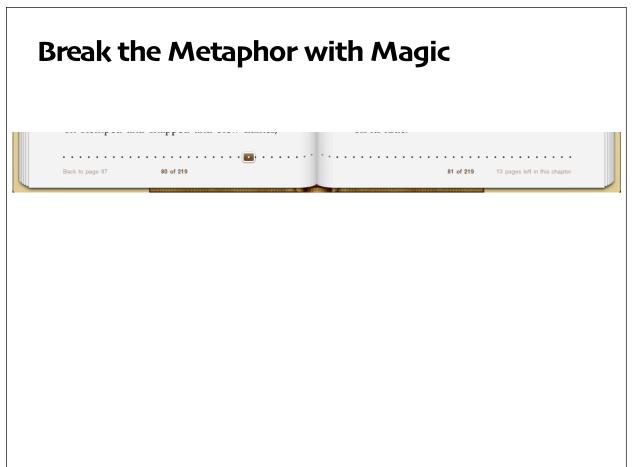




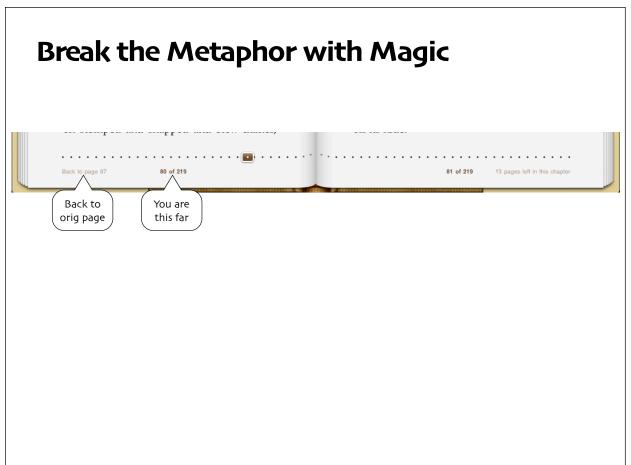




### Break the Metaphor with Magic



# Break the Metaphor with Magic Back to page 97 80 of 219 81 of 219 13 pages left in this chapter Back to orig page



Break the Metaphor with Magic

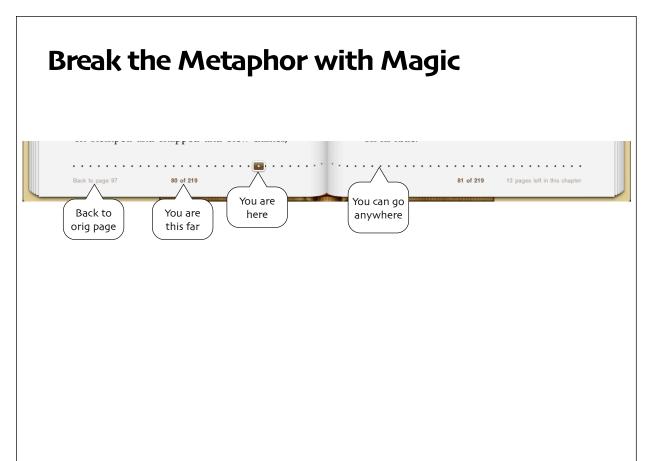
Back to Sol 219

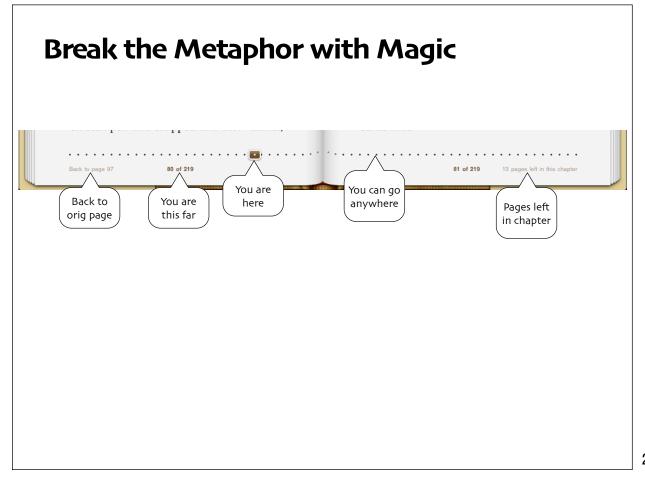
You are here

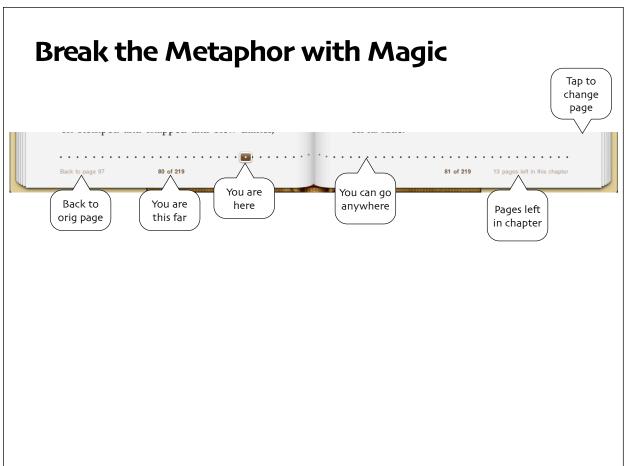
His far

Back to orig page

You are here

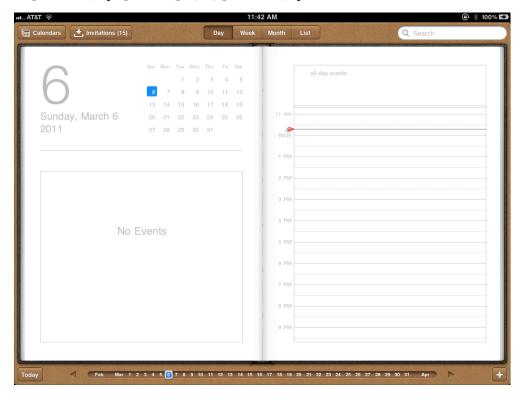






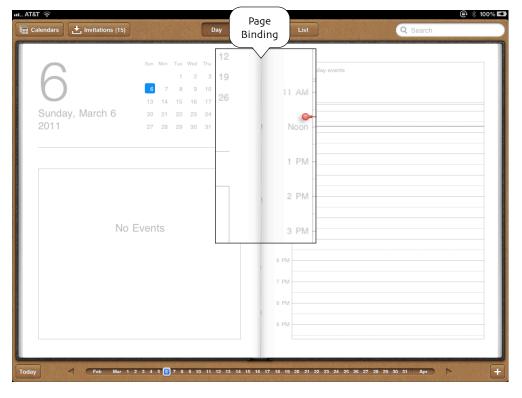
Break the Metaphor with Magic Tap to change page You are You can go Back to You are here anywhere Pages left orig page this far in chapter Strict physicality is hard work. Use magic to simplify the real world.

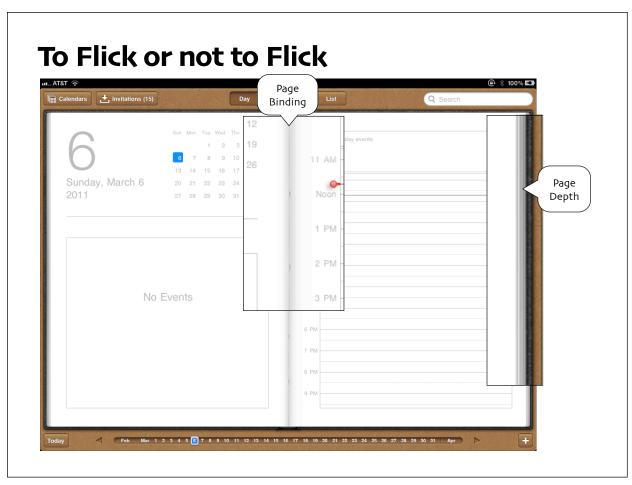
### To Flick or not to Flick

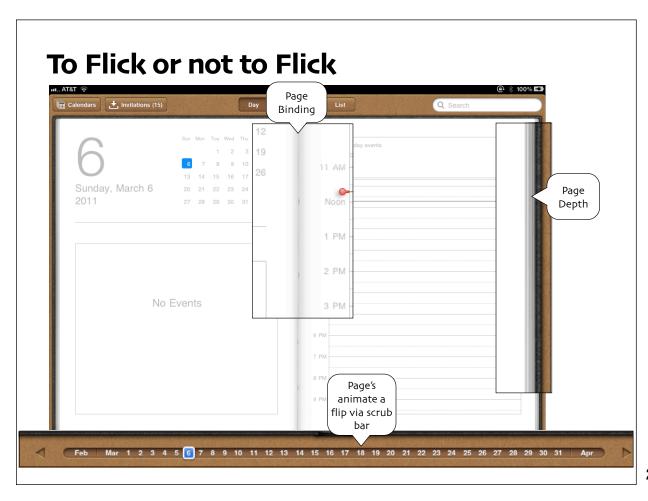


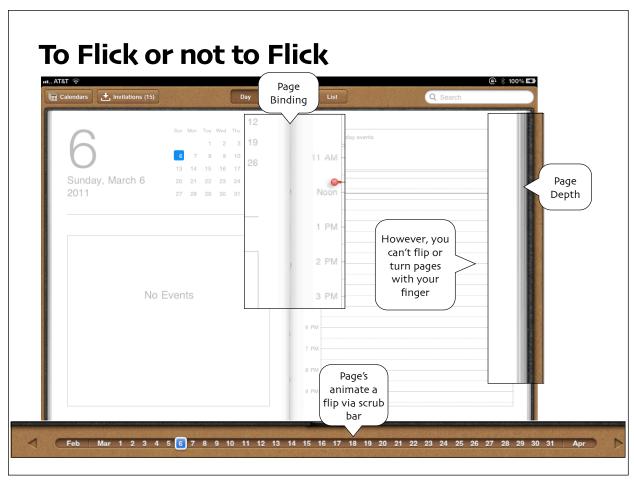
22

### To Flick or not to Flick

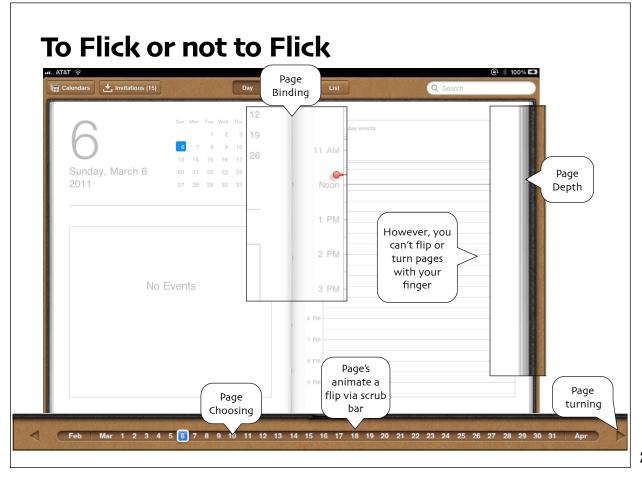




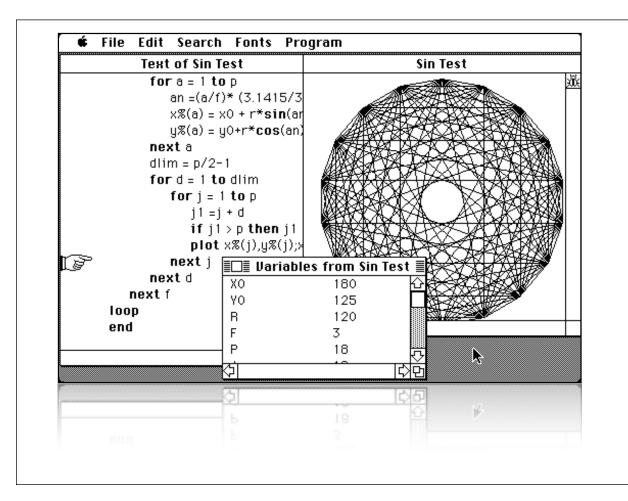


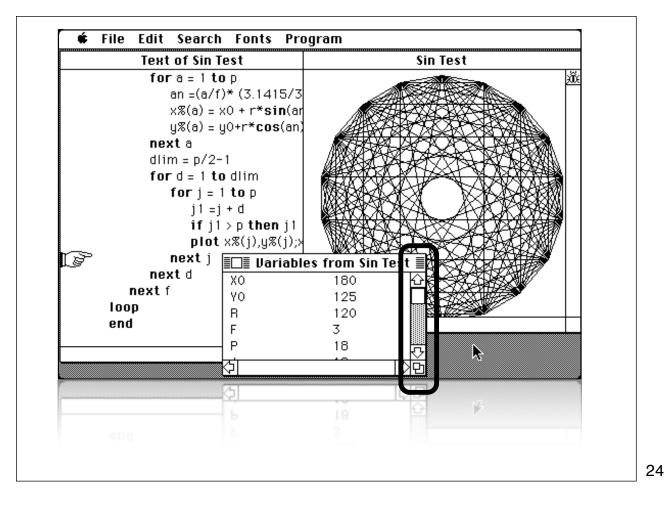


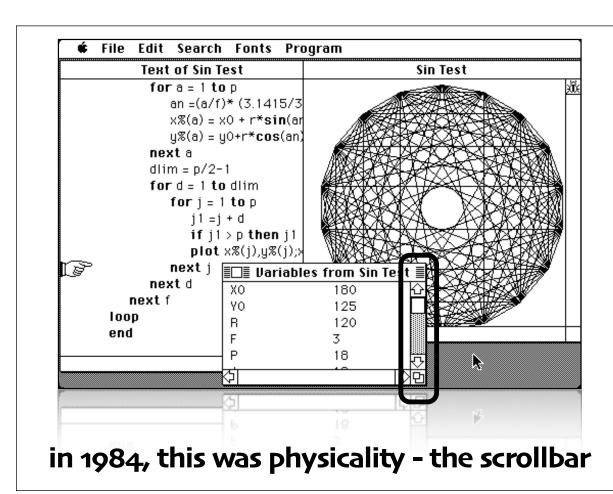




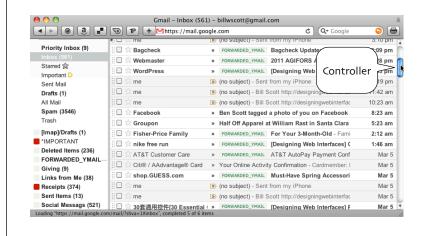
### Use Directness to Simulate Physicality







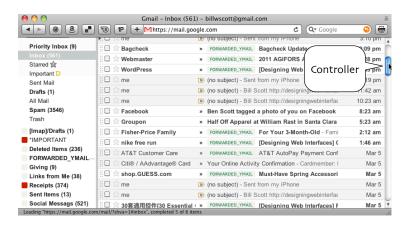
#### **Scrollbar Evolution**



25

#### **Scrollbar Evolution**

# From Controller to Indicator Content is scrolled instead of scrollbar



#### Thumbwheel is an evolution as well

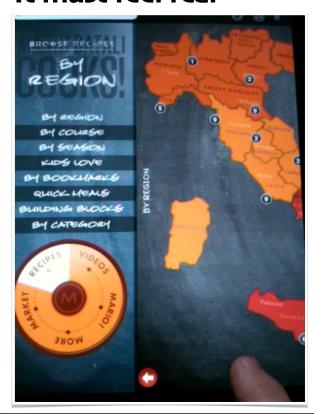


#### It must feel real



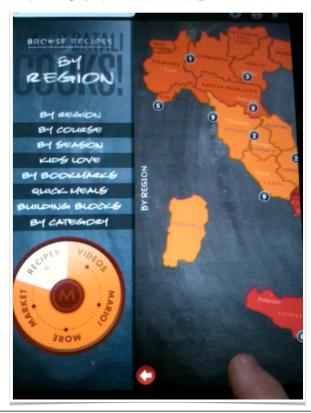
26

#### It must feel real



Make sure event handling is consistent

#### It must feel real

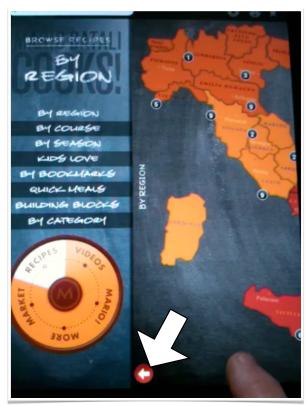


Make sure event handling is consistent

Remember fingers are fat. Real estate is limited

26

#### It must feel real



Make sure event handling is consistent

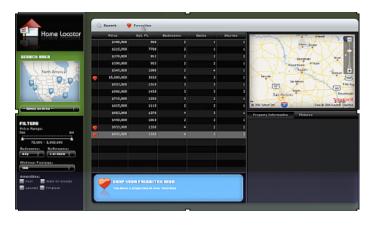
Remember fingers are fat. Real estate is limited



27

# Anti-Pattern: Mismatched Metaphor



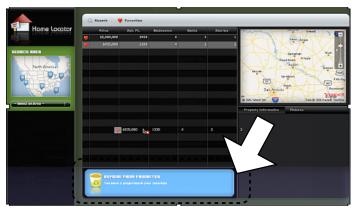


27

# Anti-Pattern: Mismatched Metaphor



anti-pattern: artificial construct



anti-pattern: artificial construct

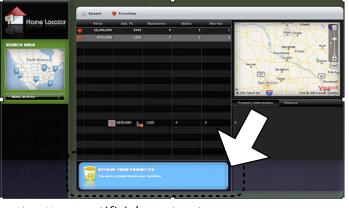
27

# **Anti-Pattern: Mismatched Metaphor**



anti-pattern: artificial construct





anti-pattern: artificial construct



27

#### **Anti-Pattern: Mismatched Metaphor**



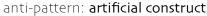
anti-pattern: artificial construct





netflix. rate an object. KISS.









netflix. rate an object. KISS.

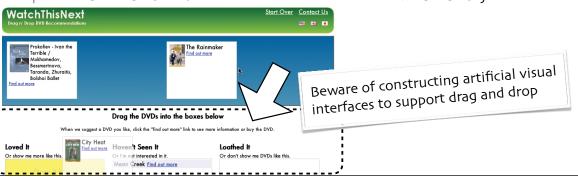


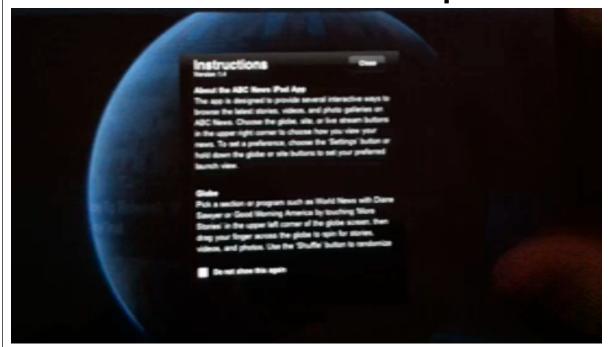


anti-pattern: artificial construct



netflix. rate an object. KISS.





(Metaphors Gone Wild)

28

#### **How Fat is Your Input?**

	Targeting Size	
Web (Pointer)	16 pixels (but accurate as 1 pixel)	
Mobile/Tablet (Finger)	44 pixels*	
Remote (LRUD)	44 pixels	
Remote (Pointer)	44 pixels	

<sup>\*</sup> Josh Clark's recommendation - Tapworthy

# **Physicality Across Platforms**

	Input
Web	Pointer Indirect Fine-grained (pixel)
Tablet	Finger Direct Course-grained (finger)
Mobile	Finger Direct Course-grained (finger)
TV	Remote Control Indirect Course-grained (1 object at a time)

30

# **Physicality Across Platforms**

	Input	Posture
Web	Pointer Indirect Fine-grained (pixel)	Stationary (can support sovereign apps)
Tablet	Finger Direct Course-grained (finger)	On-the-go (Single Purpose Apps)
Mobile	Finger Direct Course-grained (finger)	On-the-go (Single Purpose Apps)
TV	Remote Control Indirect Course-grained (1 object at a time)	Leisure (supports consumption, media apps)

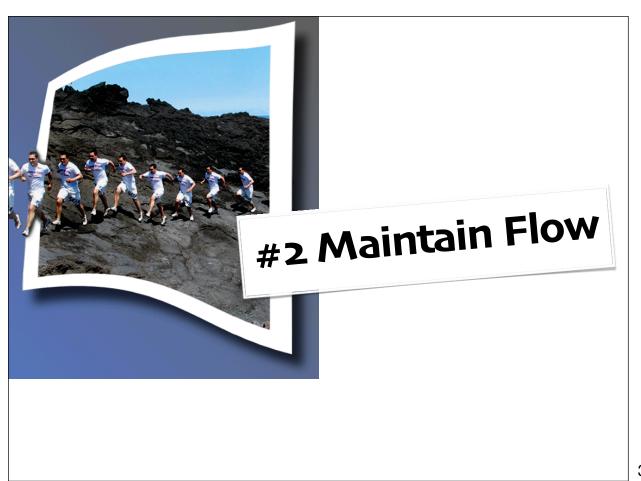
# **Physicality Across Platforms**

	Input	Posture	Navigation
Web	Pointer Indirect Fine-grained (pixel)	Stationary (can support sovereign apps)	Windows Menus, Tabs & Links
Tablet	Finger Direct Course-grained (finger)	On-the-go (Single Purpose Apps)	Panes Buttons & Gestures
Mobile	Finger Direct Course-grained (finger)	On-the-go (Single Purpose Apps)	Panes & Buttons
TV	Remote Control Indirect Course-grained (1 object at a time)	Leisure (supports consumption, media apps)	Panes & Content

30

# **Physicality Across Platforms**

	Input	Posture	Navigation	Display
Web	Pointer Indirect Fine-grained (pixel)	Stationary (can support sovereign apps)	Windows Menus, Tabs & Links	Large size High resolution Near
Tablet	Finger Direct Course-grained (finger)	On-the-go (Single Purpose Apps)	Panes Buttons & Gestures	Medium size High resolution Near
Mobile	Finger Direct Course-grained (finger)	On-the-go (Single Purpose Apps)	Panes & Buttons	Small size High resolution Near
TV	Remote Control Indirect Course-grained (1 object at a time)	Leisure (supports consumption, media apps)	Panes & Content	Large size High resolution Far away





# xploratorium Exhibit

# **Spot the differences**

33

# **Spot the differences**



# Now try again...

34

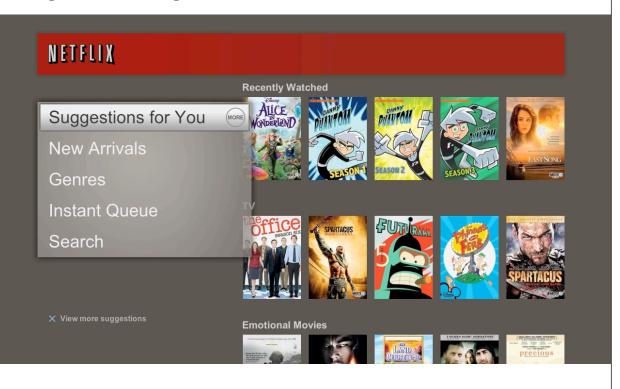
# Now try again...

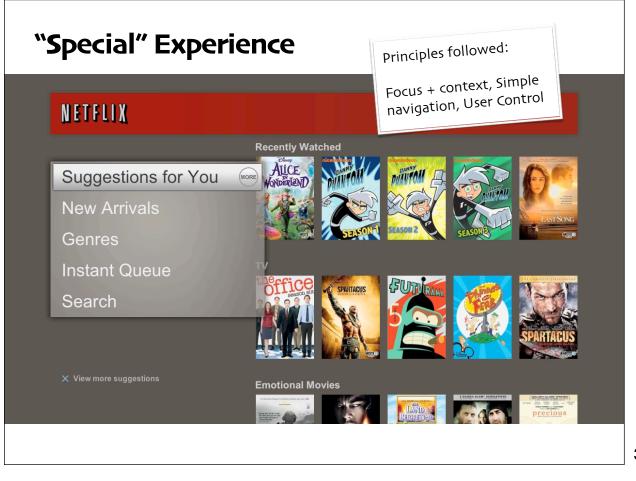




# Reduce Page Switching to Maintain Flow

#### "Special" Experience





#### "Plus" Experience

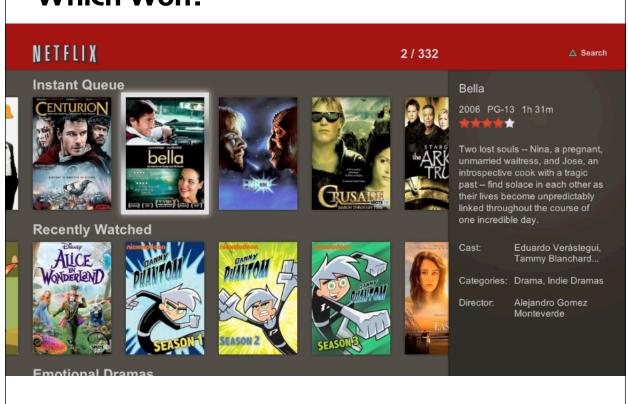




#### Which Won?

38

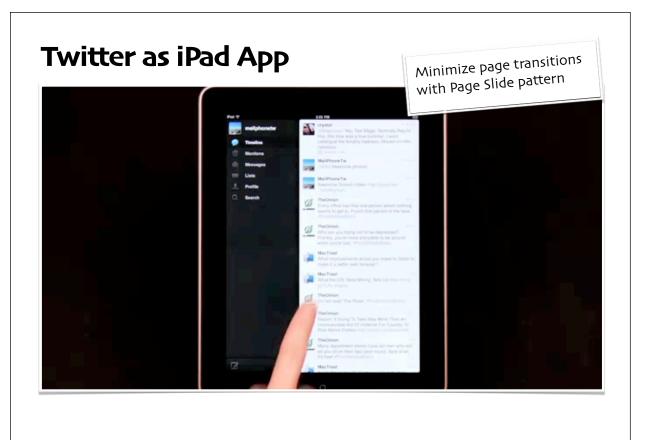
#### Which Won?

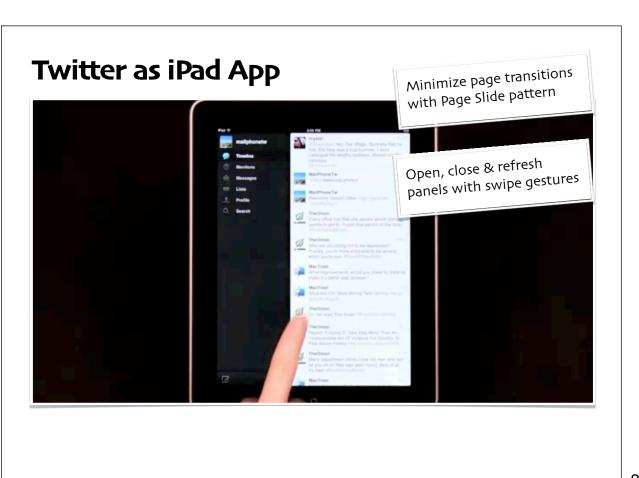


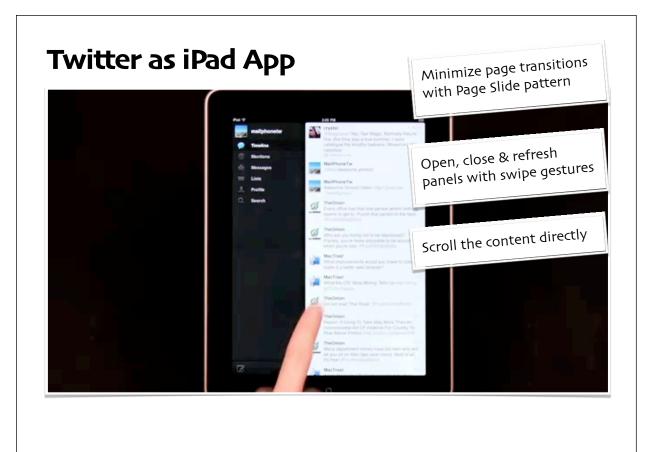


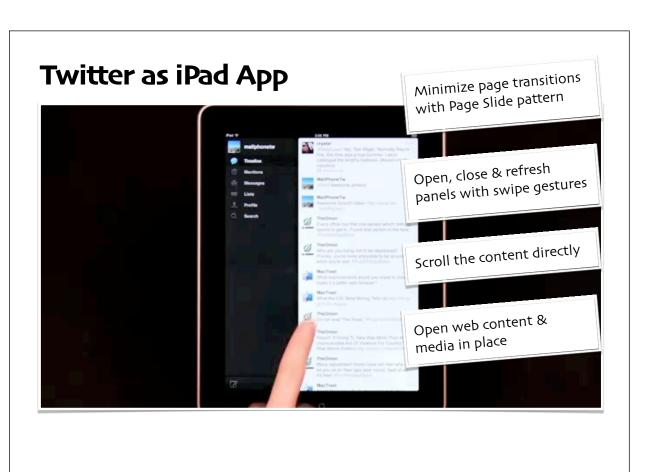
#### Twitter as iPad App



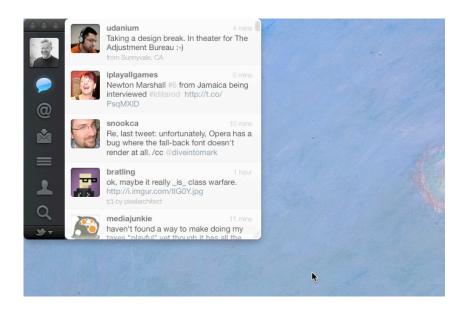






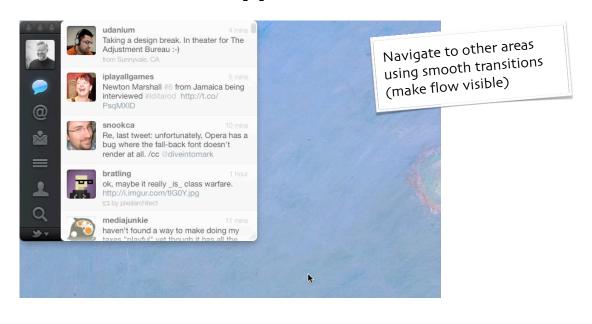


#### Twitter as Mac App

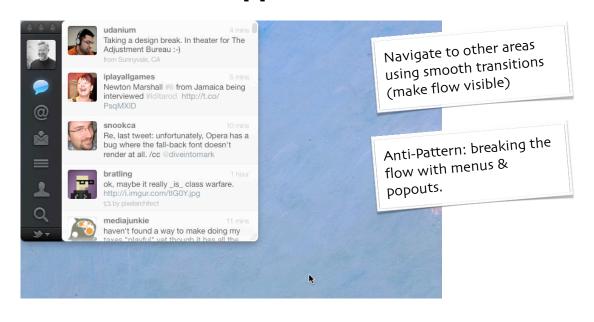


40

#### **Twitter as Mac App**

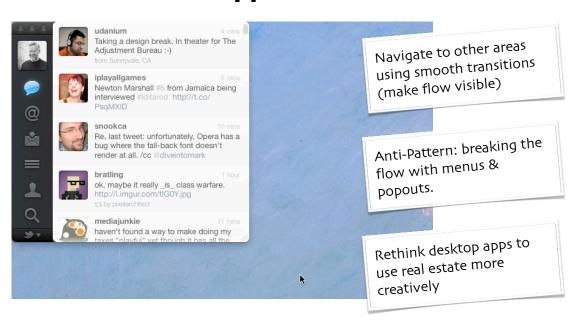


#### **Twitter as Mac App**

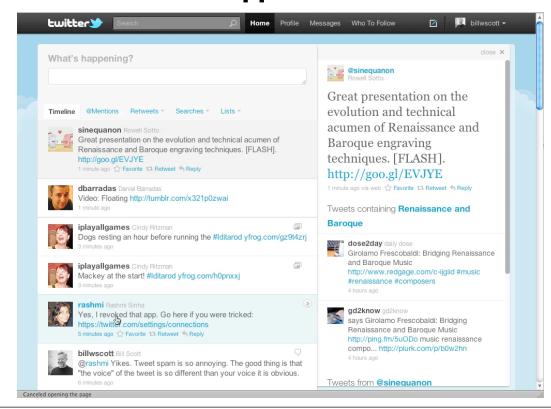


40

#### **Twitter as Mac App**

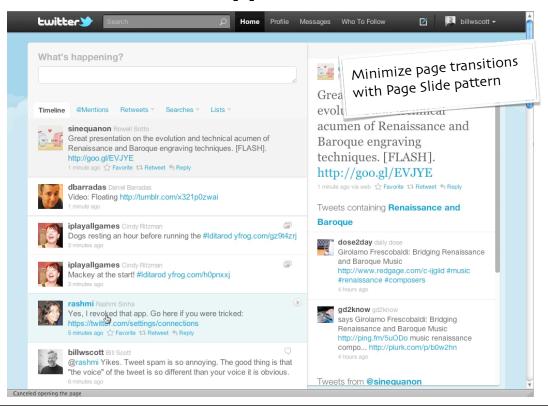


#### Twitter as Web App

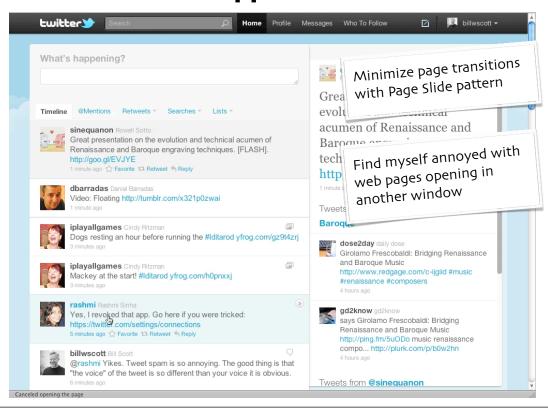


41

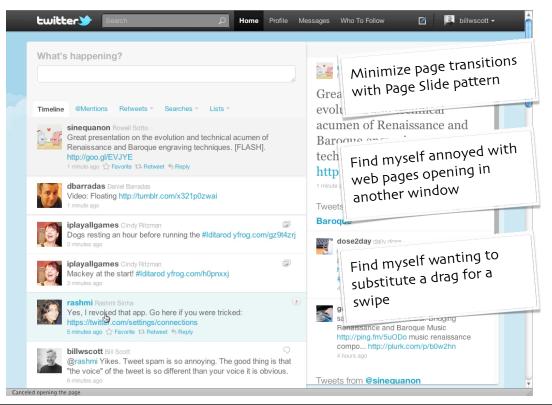
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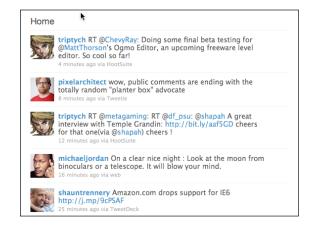
#### Twitter as Web App





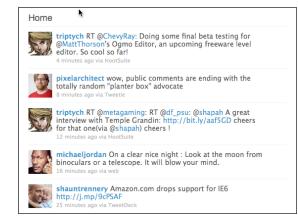


#### **Vs Hover & Cover**



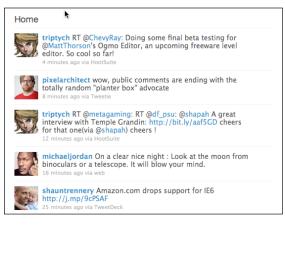
42

#### **Vs Hover & Cover**

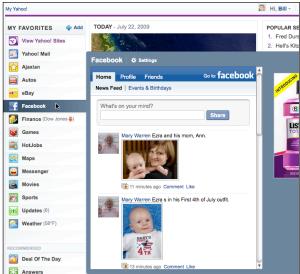








Where possible replace annoying hover details with dedicated detail panes



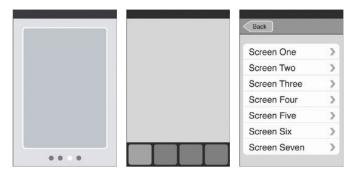
42

# Keep Navigation Simple to Maintain Flow

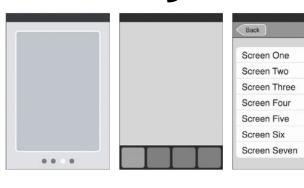
# **Mobile Navigation**

44

# **Mobile Navigation**



#### **Mobile Navigation**



Three types of iPhone navigation: Flat, Tab, Tree

- Josh Clark (Tapworthy)

44

### **Mobile Navigation**







Three types of iPhone navigation: Flat, Tab, Tree

- Josh Clark (Tapworthy)



Gowalla: Tab + Flat

- Josh Clark (Tapworthy)

Source: Tapworthy by Josh Clark

# Pulse & Flipboard iPad Apps



45

# Pulse & Flipboard iPad Apps



# **Maintaining Flow Across Platforms**

	Navigation
Web	Page, Tab, Back Button
Mobile	Flat, Tab & Tree. 1 level back.
Tablet	Flat, Tab, Master/Detail. 1 level-back
TV	Flat, Tab, Tree, Master/Detail

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# **Maintaining Flow Across Platforms**

	Navigation	Paging
Web	Page, Tab, Back Button	When page content changes or step by step flow Avoid too many page changes
Mobile	Flat, Tab & Tree. 1 level back.	For content, steps in flow
Tablet	Flat, Tab, Master/Detail. 1 level-back	Swiping through pages Avoid too many page changes
TV	Flat, Tab, Tree, Master/Detail	When page content changes or step by step flow

# **Maintaining Flow Across Platforms**

	Navigation	Paging	Scrolling
Web	Page, Tab, Back Button	When page content changes or step by step flow Avoid too many page changes	Better than paging (easier on web than on touch)
Mobile	Flat, Tab & Tree. 1 level back.	For content, steps in flow	Question scrolling, prefer Flat
Tablet	Flat, Tab, Master/Detail. 1 level-back	Swiping through pages Avoid too many page changes	Short scrolling or for Sliding content
TV	Flat, Tab, Tree, Master/Detail	When page content changes or step by step flow	Avoid

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# **Maintaining Flow Across Platforms**

	Navigation	Paging	Scrolling	Content Slide
Web	Page, Tab, Back Button	When page content changes or step by step flow Avoid too many page changes	Better than paging (easier on web than on touch)	Carousels for media or short relevancy lists
Mobile	Flat, Tab & Tree. 1 level back.	For content, steps in flow	Question scrolling, prefer Flat	Limit use of in-page sliding content
Tablet	Flat, Tab, Master/Detail. 1 level-back	Swiping through pages Avoid too many page changes	Short scrolling or for Sliding content	Nice way to bring in more in-page content
TV	Flat, Tab, Tree, Master/Detail	When page content changes or step by step flow	Avoid	Avoid

# **Maintaining Flow Across Platforms**

	Navigation	Paging	Scrolling	Content Slide	Panel Slide
Web	Page, Tab, Back Button	When page content changes or step by step flow Avoid too many page changes	Better than paging (easier on web than on touch)	Carousels for media or short relevancy lists	Nice way to extend real estate
Mobile	Flat, Tab & Tree. 1 level back.	For content, steps in flow	Question scrolling, prefer Flat	Limit use of in-page sliding content	Avoid (except as transition to replace page)
Tablet	Flat, Tab, Master/Detail. 1 level-back	Swiping through pages Avoid too many page changes	Short scrolling or for Sliding content	Nice way to bring in more in-page content	Nice way to extend real estate
TV	Flat, Tab, Tree, Master/Detail	When page content changes or step by step flow	Avoid	Avoid	Nice way to extend real estate



# Use Transitions/ Animations to Create Responsiveness

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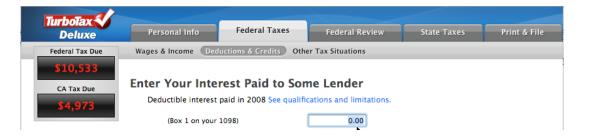
**Animation Can...** 

#### **Animation Can...**



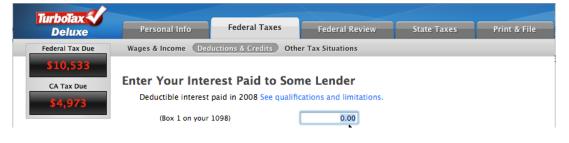
49

#### **Animation Can...**



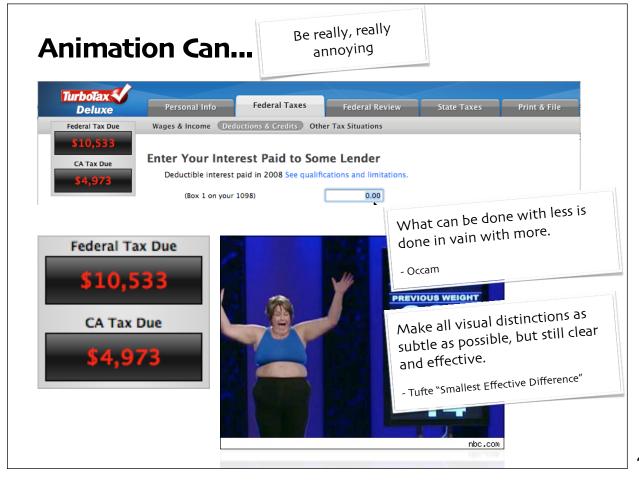


# **Animation Can...**

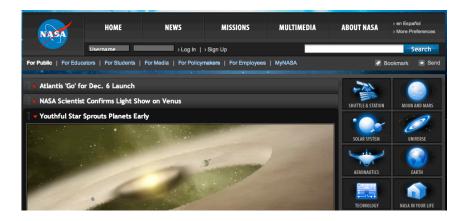






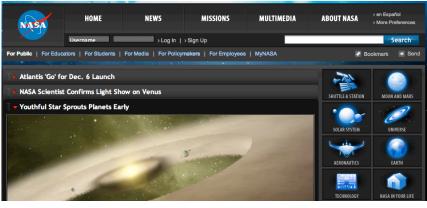


# Web Apps Seem Prone to This



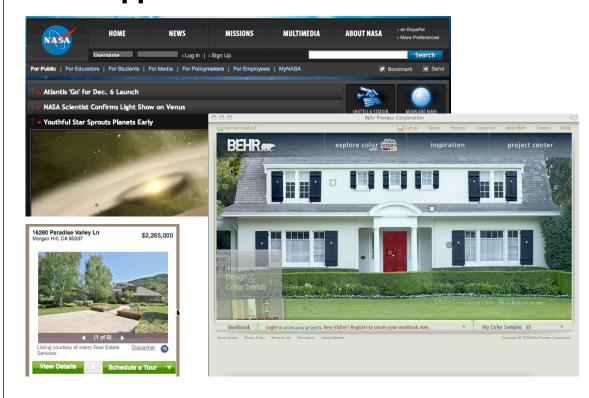
50

# Web Apps Seem Prone to This

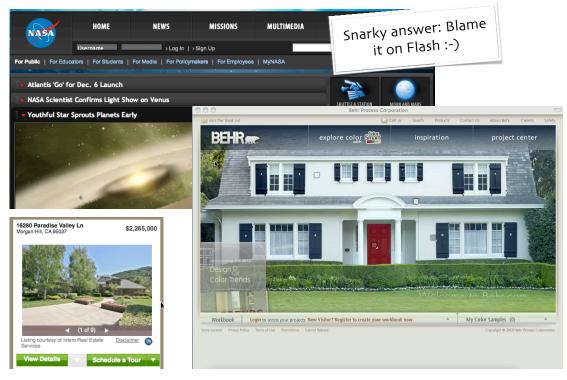




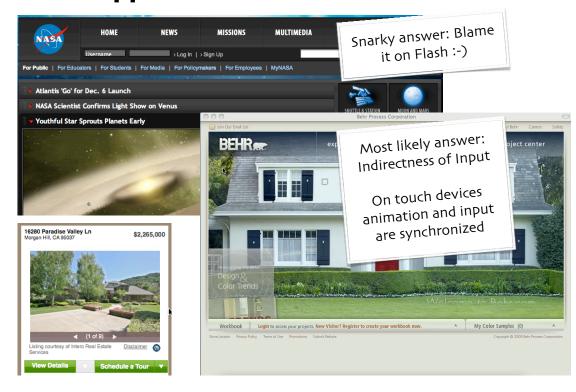
# Web Apps Seem Prone to This







# Web Apps Seem Prone to This

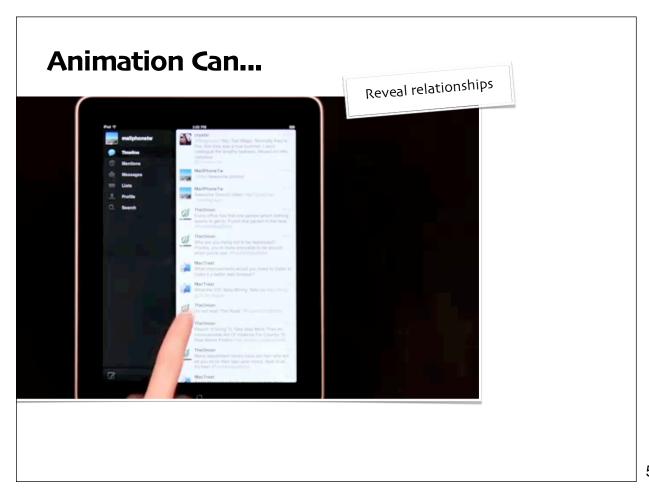


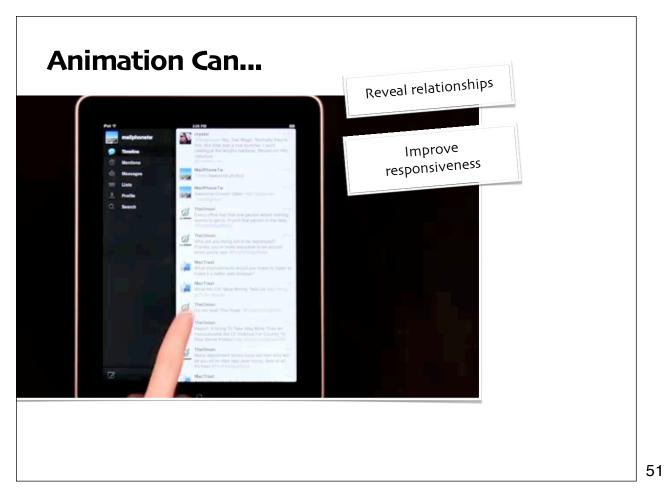


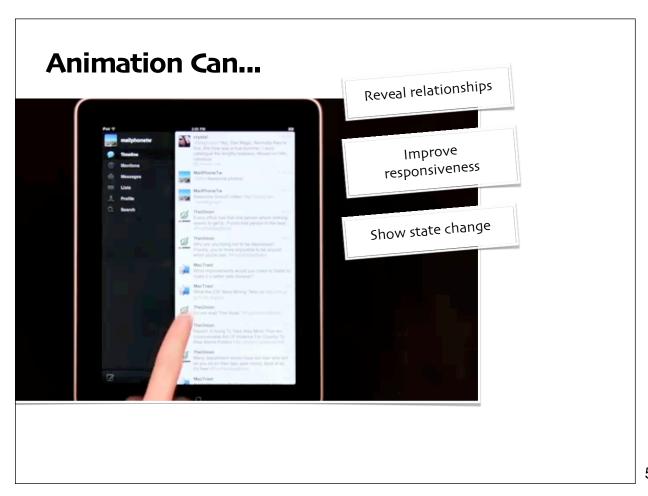


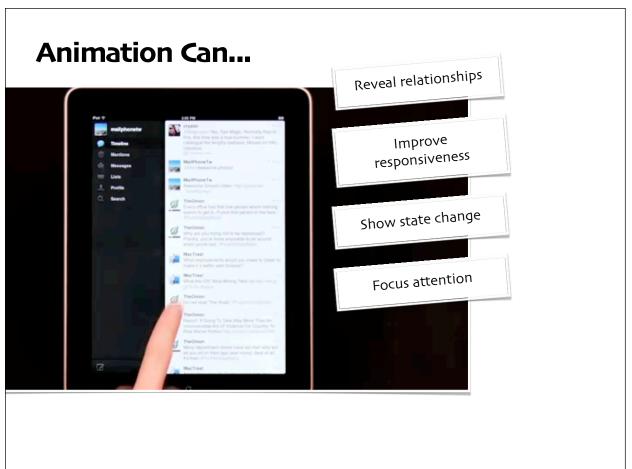
# Animation Can...



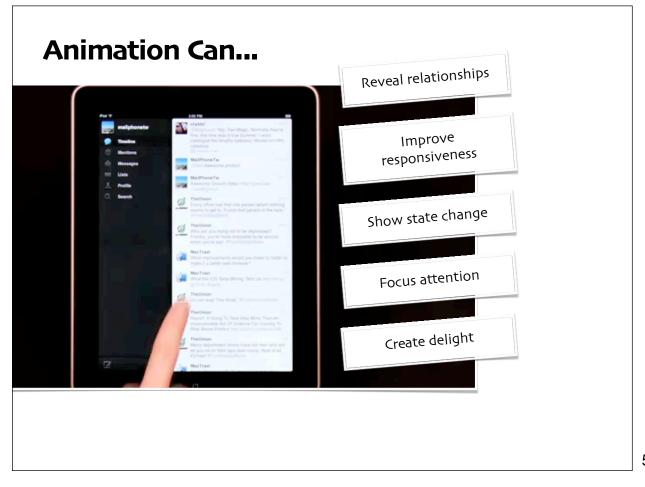


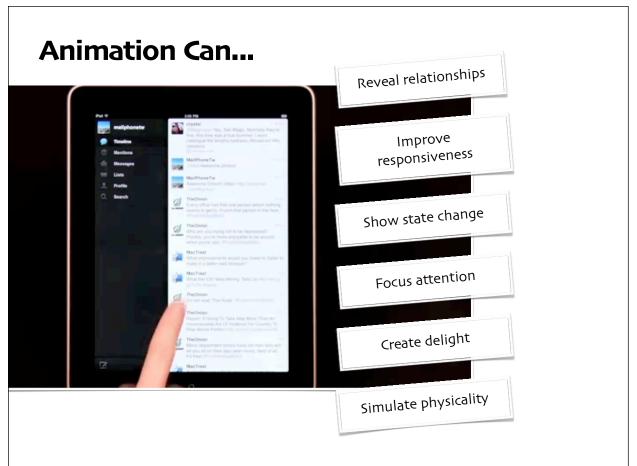






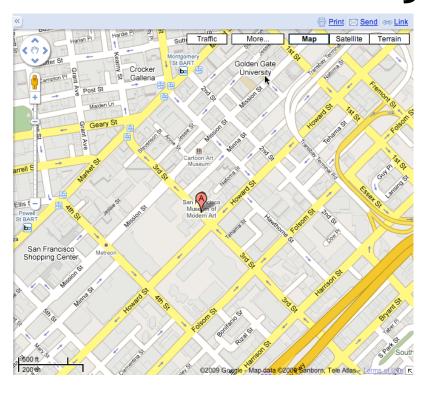






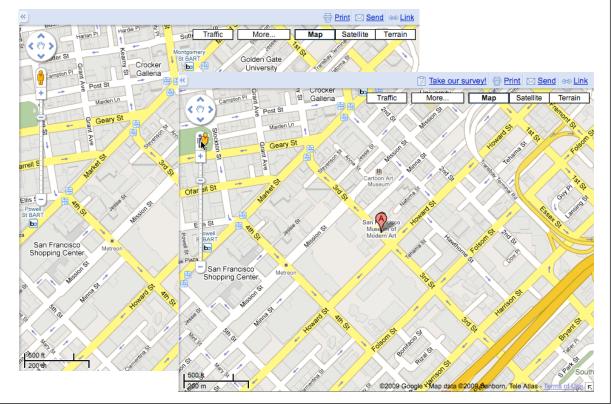
# Use Invitations to Create Responsiveness

# **Just in Time Invitations at Drag Moments**



53

# **Just in Time Invitations at Drag Moments**

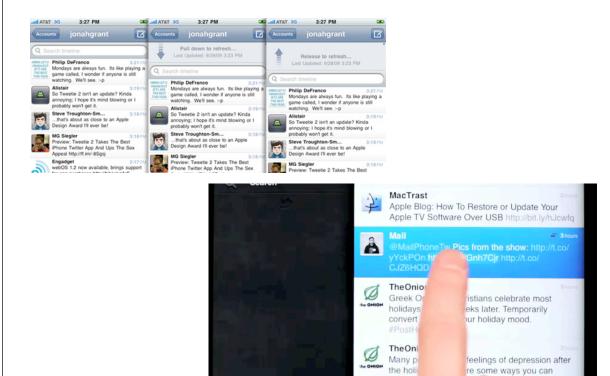


# **Invitations at Touch-Hold Moments**



54

# **Invitations at Touch-Hold Moments**



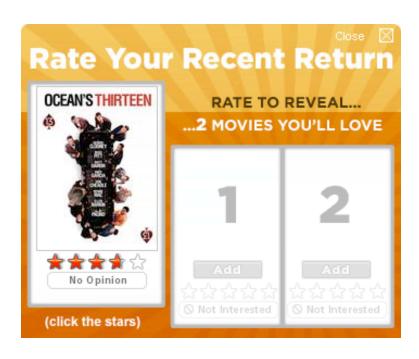
relieve

ims.

# **Invitations at Reward Moments**

55

# **Invitations at Reward Moments**



# Rate Your Recent Return OCEAN'S THIRTEEN No Opinion No Opinion O Not Interested No Not Interested No Not Interested

55

# Information as an Invitation

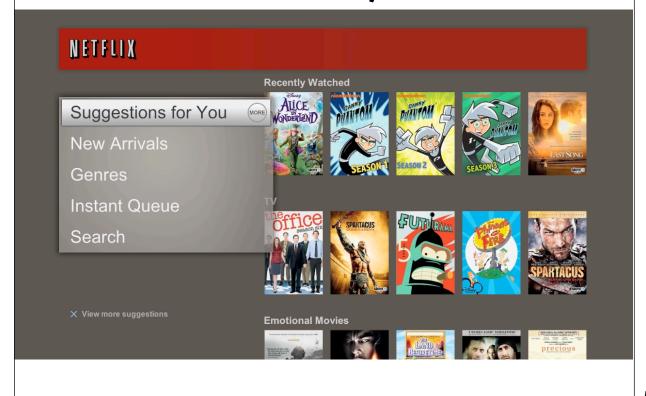
# Information as an Invitation



56

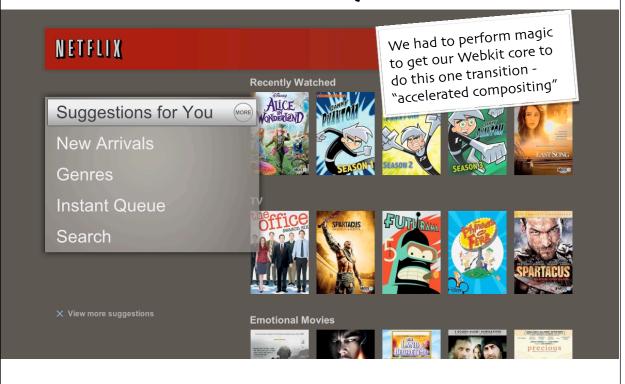
# Be Snappy to Be Responsive

# Performance is Not Always a Given

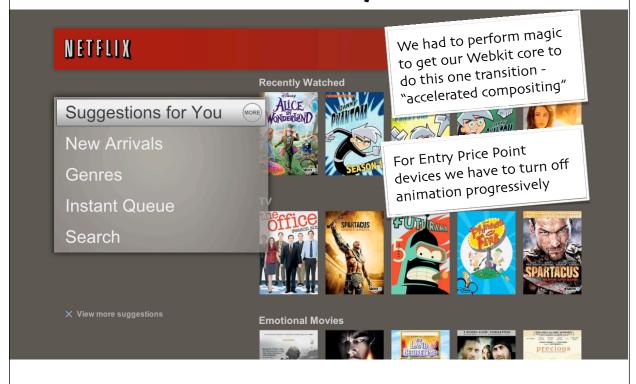


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# Performance is Not Always a Given



# Performance is Not Always a Given





# Scrollability, New iOS Physics Project from Facebook for iPhone Creator, Joe Hewitt

By Sarah Perez / May 20, 2011 6:58 AM / 6 Comments











This post is part of our ReadWriteMobile channel, which is dedicated to helping its community understand the strategic business and technical implications of developing mobile applications. This channel is sponsored by Alcatel-Lucent. As you're exploring these resources, check out this helpful resource from our sponsors: Cultivating a Developer Ecosystem: Understanding Their Needs



Joe Hewitt, the creator of the Facebook iPhone app, Firebug, and former contributor to Mozilla's Firefox, announced earlier this month that he was leaving Facebook to go build "tools." What sorts of tools? Not just mobile tools, but "tools for writers, designers, programmers, whatever," he wrote on his personal blog.

Since then, many developers have been eagerly anticipating the tools Hewitt will create. Today, we get to see what one of those is: Scrollability, a script that brings native scrolling to mobile Web applications.

### What's Scrollability?

According to the project's website, Scrollability is a single script, that's small, and with no external dependencies. You "drop it into your page, add a few CSS classes to scrollable elements, and scroll away," the site explains.

Arnulfo Heriberto Hao **Elbert Murray Heartsill** 

# **Responsiveness Across platforms**

	Input
Web	Pointer Indirect
Tablet/ Mobile	Fingers Direct
τv	Remote Indirect

60

# **Responsiveness Across platforms**

	Input	Animation	
Web	Pointer Indirect	Make Indirect Input Feel More Direct	
Tablet/ Mobile	Fingers Direct	Make Direct Input Feel Real	
TV	Remote Indirect	Make Indirect Input Feel More Direct Reinforce the Cinematic	

# **Responsiveness Across platforms**

	Input	Animation	Invitations
Web	Pointer Indirect	Make Indirect Input Feel More Direct	On hover
Tablet/ Mobile	Fingers Direct	Make Direct Input Feel Real	At touch/hold endpoints
TV	Remote Indirect	Make Indirect Input Feel More Direct Reinforce the Cinematic	Static hints (usually once an item is selected)

60

# **Responsiveness Across platforms**

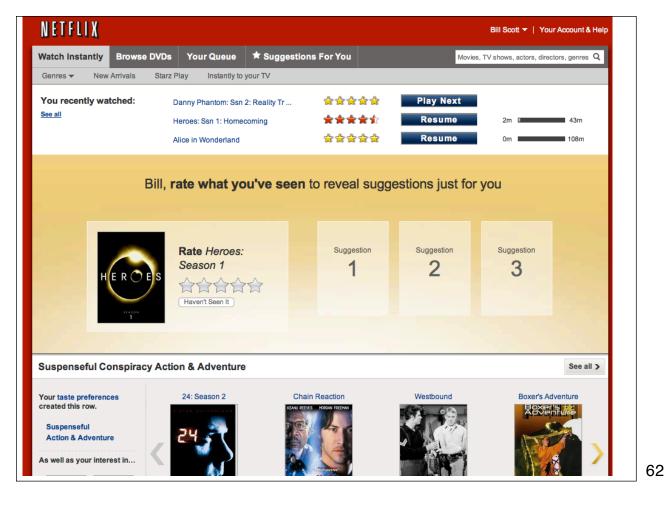
	Input	Animation	Invitations	Performance
Web	Pointer Indirect	Make Indirect Input Feel More Direct	On hover	Less of a consideration
Tablet/ Mobile	Fingers Direct	Make Direct Input Feel Real	At touch/hold endpoints	Can be a consideration
τv	Remote Indirect	Make Indirect Input Feel More Direct Reinforce the Cinematic	Static hints (usually once an item is selected)	Definitely an issue on some low-end devices

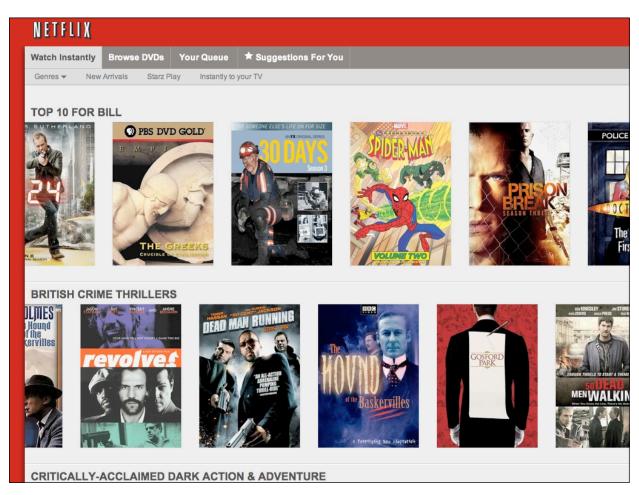
# TV Experiences...

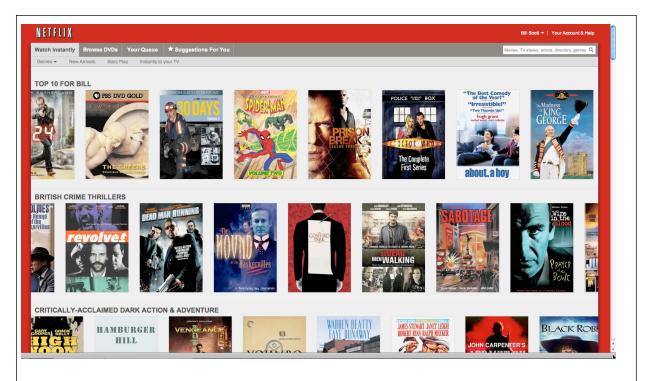
61

# TV Experiences...









# **Can Influence Website Experience**





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