

User Interface Design Crash Course

Kevin Browne - @hamiltonkb

I taught the Human Computer Interface course at McMaster University.

But I'll try not to sound like Professor Fink.



What is a user interface?

Space where interaction between humans and machines occurs.

The look and feel, user input, machine output, etc.

Why does user interface design matter?

It can make your product: Wii



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20090330
OPINION

Torture - Criminal - Dick Cheney - War Crimes - Military - Government - Intelligence - Terrorism - Detainee - Secret - Censored - Videotapes - Legal - Politics - History - Book

"Bush's Torture Rationale Debunked." ... "Abu Zubaida was the alpha and omega of the [Republican President] Bush administration's argument for torture." ... "That's why Sunday's front-page Washington Post story by Peter Finn and Joby Warrick is such a blow to the last remaining torture apologists." ... "Finn and Warrick reported that 'not a single significant plot was foiled' as a result of Zubaida's brutal treatment -- and that, quite to the contrary, his false confessions 'triggered a series of alerts and sent hundreds of CIA [Central Intelligence Agency] and FBI [Federal Bureau of Investigation] investigators scurrying in pursuit of phantoms.'" ... "Zubaida was the first detainee to be tortured at the direct instruction of the [Republican President Bush] White House. Then he was President George W. Bush's Exhibit A in defense of the 'enhanced interrogation' procedures that constituted torture. And he continues to be held up as a justification for torture by its most ardent defenders." ... "But as author Ron Suskind reported almost three years ago -- and as The Post now confirms -- almost all the key assertions the Bush administration made about Zubaida were wrong." ... "Zubaida wasn't a major al Qaeda figure. He wasn't holding back critical information. His torture didn't produce valuable intelligence -- and it certainly didn't save lives." ... "All the calculations the Bush White House claims to have made in its decision to abandon long-held moral and legal strictures against abusive

DEM 2010 TV

OBAMA TV

WHITE HOUSE TV

'News' Media Politics

Jay Rosen and Glenn Greenwald discuss journalism and media politics on Bill Moyers Journal. **Transcript.** Also: **Rosen, Greenwald, Moyers.**
 #News Media Politics: Jay Rosen and Glenn Greenwald

Right-Wing TV Bias

MEDIA BIAS: 2 to 1 in favor of Republicans

U. S. A.
 20090330
Politics

John McCain - Government - Money
 Accounting - Arizona

"Despite McCain's Comments, Senate GOP Not Offering Detailed Budget." ... "On Thursday, House Republicans did wind up offering the frame of an alternative budget -- but then they were widely panned for not releasing a more detailed alternative to the Democratic proposals." ... "That's what made an exchange Sunday with [Arizona Republican Senator] Sen. John McCain, R-Ariz., on NBC's "Meet the Press," intriguing."

"DAVID GREGORY: "Do you think that Republicans should provide a detailed budget alternative?"

"McCAIN: "Yes."

"GREGORY: "With numbers?"

"McCAIN: "Yes."

"GREGORY: "Will that happen in the Senate?"

"McCAIN: "We're working on it, working very hard on it."

"So -- are they?" ... "Actually, no." -By Rick Klein -ABCNEWS.com

PEOPLE

WORLD
 20090331
Terrorism

Pakistani - Police - Military - Political - Religious - History - Soviet - Afghanistan - India

"Insurgent Threat Shifts in Pakistan: Assault on Police Academy Indicates Risk Has Moved Beyond Tribal Areas." ... "The brazen occupation of a Pakistani police academy Monday by heavily armed gunmen near the eastern mega-city of Lahore [Pakistan] was the latest indication that Islamist terrorism, once confined to Pakistan's northwest tribal belt, now threatens political stability nationwide." ... "The precisely orchestrated assault by a squad of young men, which left at least 11 people dead and took security forces nearly eight hours to quell, was also a likely sign that Islamist militant groups in Punjab province, once tolerated and even supported by the Pakistani state to fight in India and Afghanistan, have turned openly against the government." ... "Pakistan has been an incubator for Islamist militant groups for the past several decades. Until recently, they were focused on external conflicts, especially the dispute over Indian Kashmir, the Soviet occupation of Afghanistan during the 1980s and the presence of [United States] U.S.-led forces in Afghanistan since the fall of the Taliban in late 2001." ... "In the past several years, extremist groups along the Afghan border have turned inward, spreading violence and religious fanaticism among the ethnic Pashtun populace in Pakistan's northwest. Pakistan has tried to contain the problem through a combination of military offensives and political negotiations, which are underway in several conflicted border districts." -By Pamela Constable with contributions by Aoun Sahi -WashingtonPost

20090329
Noteworthy

INTELLIGENCE

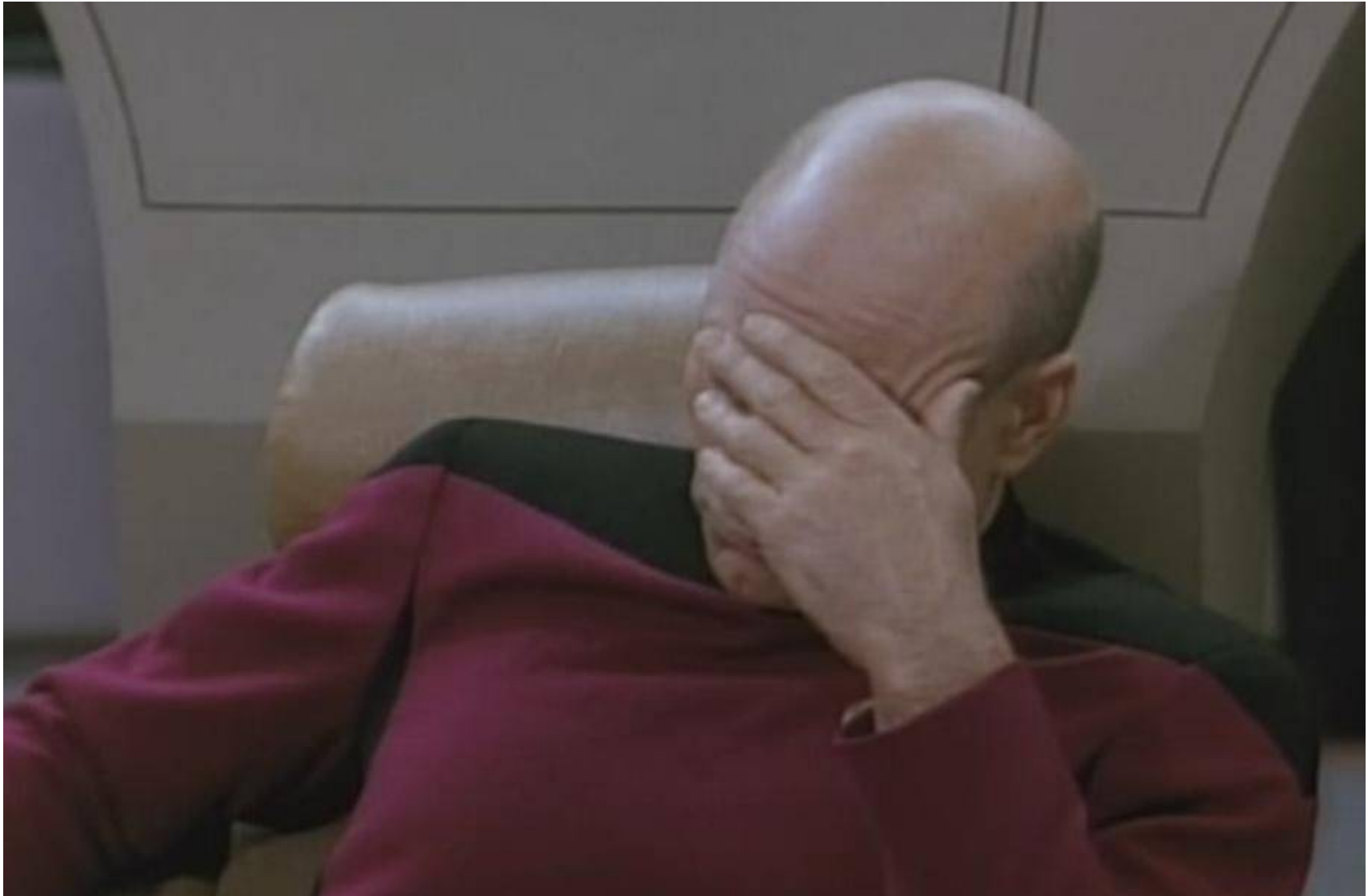
IRAQ NEWS

War Crimes

Law/Legal
 Poll - Torture

"Poll: Most want inquiry into anti-terror tactics." ... "Even as Americans struggle with two wars and an economy in tatters, a USA TODAY/Gallup Poll finds majorities in favor of investigating some of the thorniest unfinished business from the [Republican President] Bush administration: Whether its tactics in the "war on terror" broke the law." ... "Close to two-thirds of those surveyed said there should be investigations into allegations that the Bush team used torture to interrogate terrorism suspects and its program of wiretapping [United States] U.S. citizens without getting warrants. Almost four in 10 favor criminal investigations and about a quarter want investigations without criminal charges. One-third said they want nothing to be done." ... "Even reversed, Bush policies divide" ... "Even more people want action on alleged attempts by the Bush team to use the Justice Department for

It's easy to see *really* bad design.



But what is *good* user interface design?

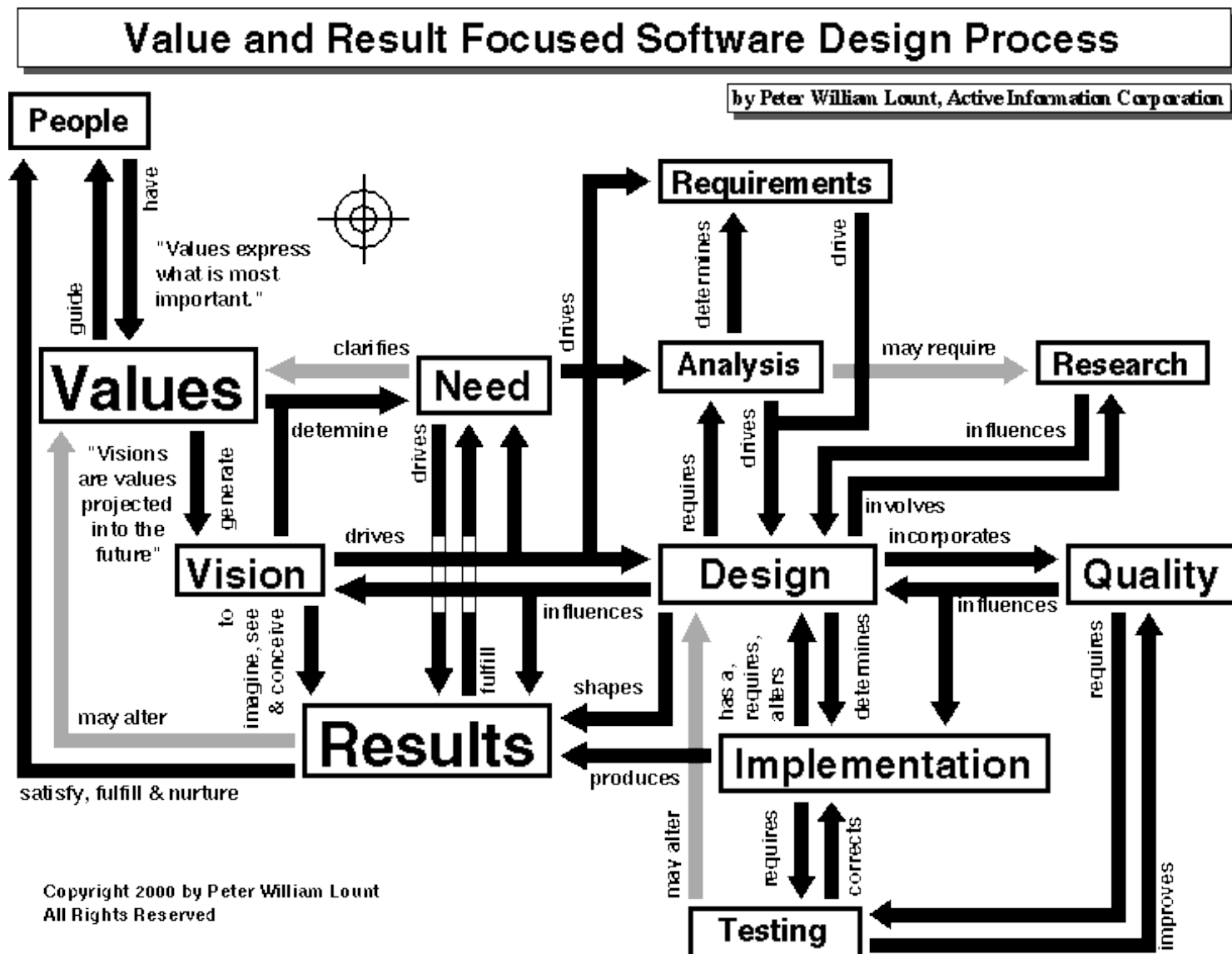
We can break down “usability”

- Time to learn
- Performance (speed)
- Error rate
- Retention
- Subjective satisfaction
- Subjective trustability

How do you design a good interface?

Design is a dynamic process,
not a recipe.

Lots of complex ways to look at it.



Suggestion...

Build. Measure. Learn. Repeat.

...Eric Ries' lean startup methodology

Building.

Every system has a guidelines document. **Use it.**

iOS user interface guidelines

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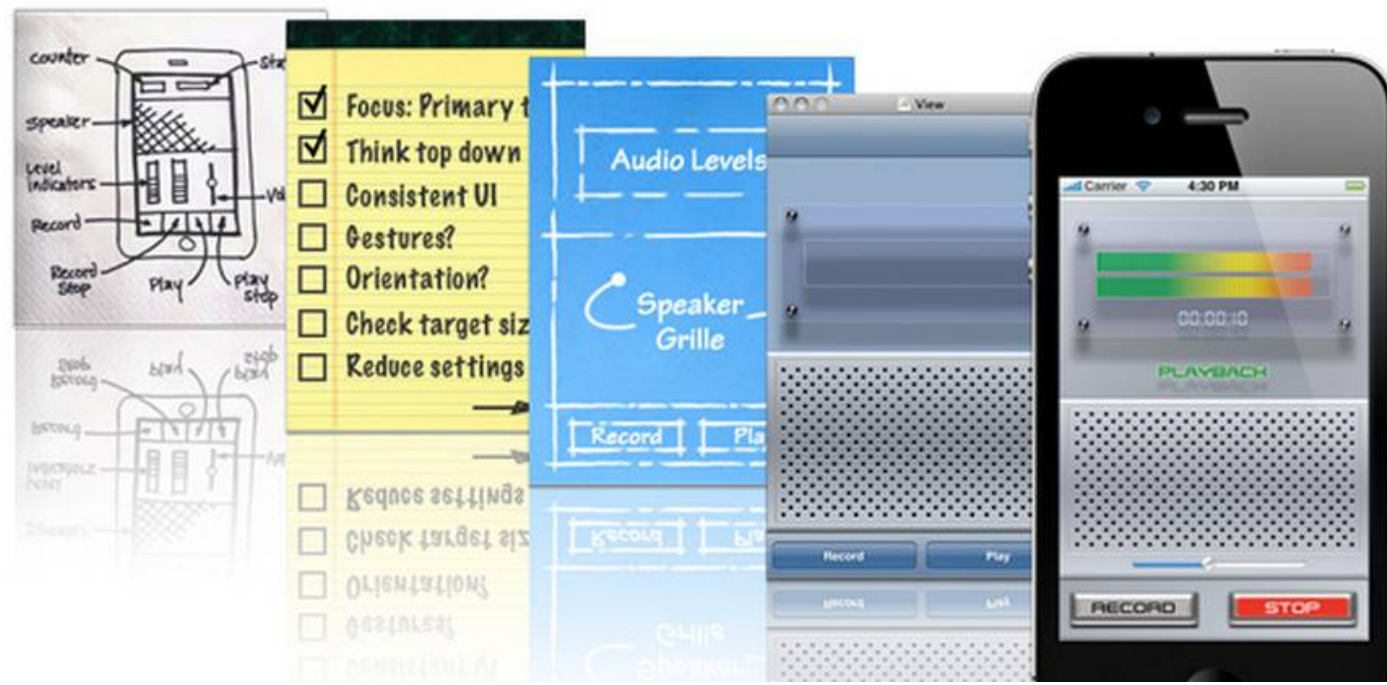
Introduction

- ▶ Platform Characteristics
- ▶ Human Interface Principles
- ▶ App Design Strategies
- ▶ Case Studies: Transitioning to iOS
- ▶ User Experience Guidelines
- ▶ iOS Technology Usage Guidelines
- ▶ iOS UI Element Usage Guidelines
- ▶ Custom Icon and Image Creation Guidelines
- Revision History

Next

Introduction

iOS Human Interface Guidelines describes the guidelines and principles that help you design a superlative user interface and user experience for your iOS app.



Guidelines documents...

- Give lists of “best practices”
 - e.g. “Focus on the primary task”
 - e.g. “De-emphasize the settings”
- Standardize behaviour
 - e.g. Define that that the “pinch gesture” should mean zoom in, zoom out
 - e.g. Define that the “touch and hold gesture” should bring up magnifier during text entry

Design heuristics, principles

- Essentially “best practices” to follow
- The good ones are based on empirical data
- Can be general
- Can be specific to your problem domain...
 - eCommerce
 - Video games
 - Mobile apps
 - Mobile games
 - Productivity software

Make decisions based on data...

Trust in e-Commerce: Evaluating the Impact of Third-Party Seals

Milena M. Head*

headm@mcmaster.ca

905-525-9140 ext. 24435

Khaled Hassanein

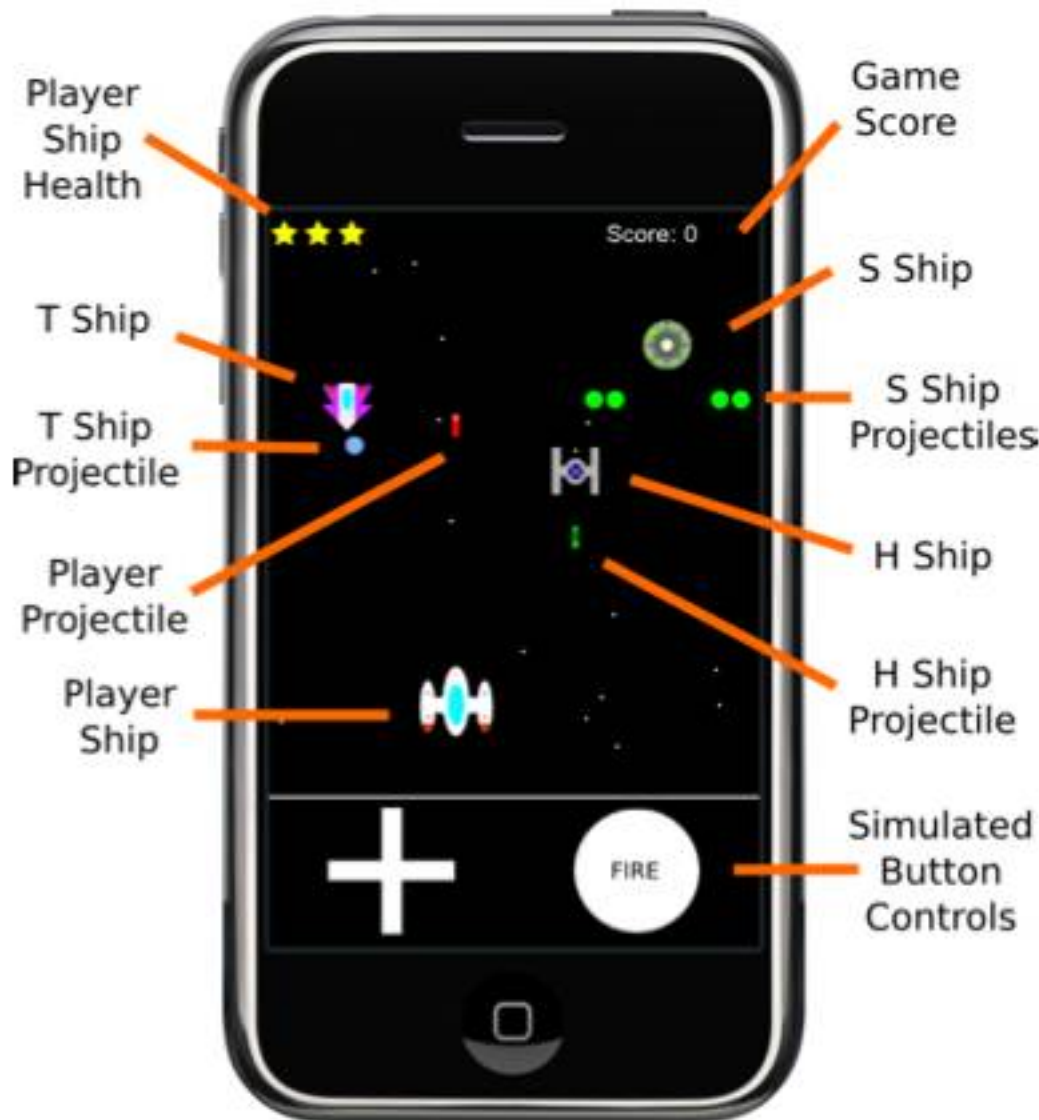
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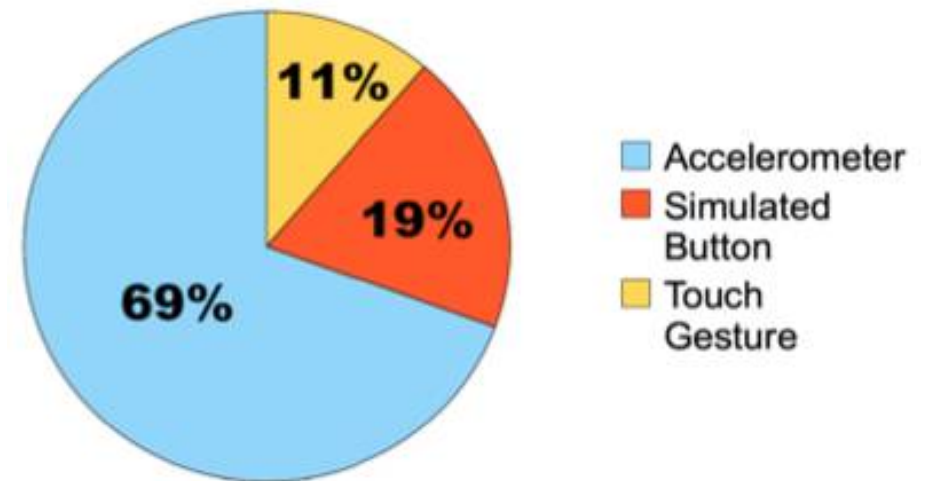
DeGroote School of Business,
McMaster University,
1280 Main Street West
Hamilton, Ont., L8S 4M4
Canada

Head, M., and Hassanein, K. (2002). "Trust in e-Commerce: Evaluating the Impact of Third-Party Seals", *Quarterly Journal of Electronic Commerce*, 3(3), 307-325.

Good source: Google Scholar



Most Preferred User Interface



- **H1** An accelerometer-based user interface should be available.
- **H2** Multiple user interfaces should be available.
- **H3** Touch gestures should be utilized when diagonal direction input is either required from or desired by the user.
- **H4** Interface sensitivity should be configurable.
- **H5** Physical properties of gestures should be directly translated into virtual properties.

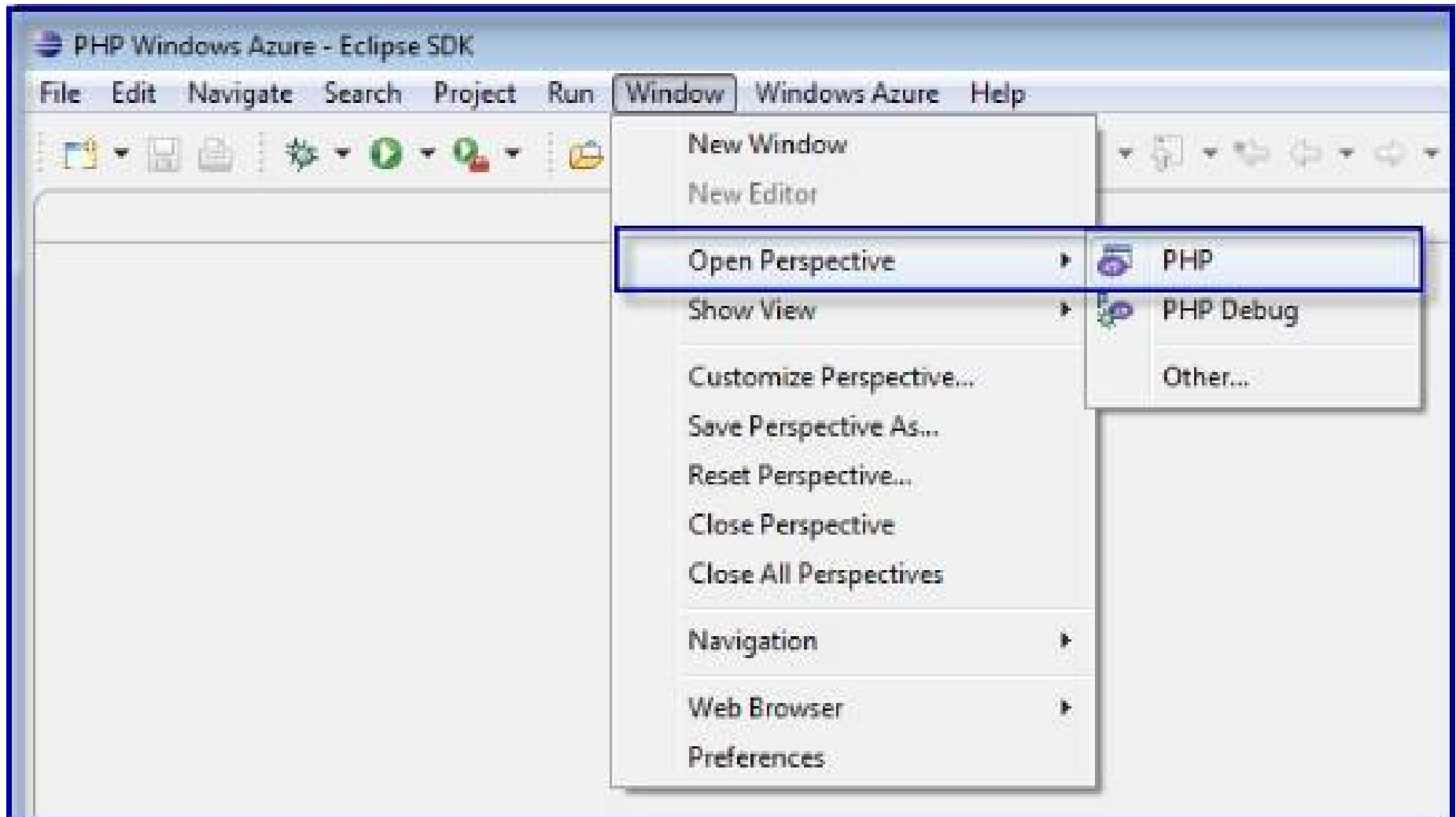


(...it's a geeky South Park reference)

Apple does it, you should too!



Microsoft design slows performance.



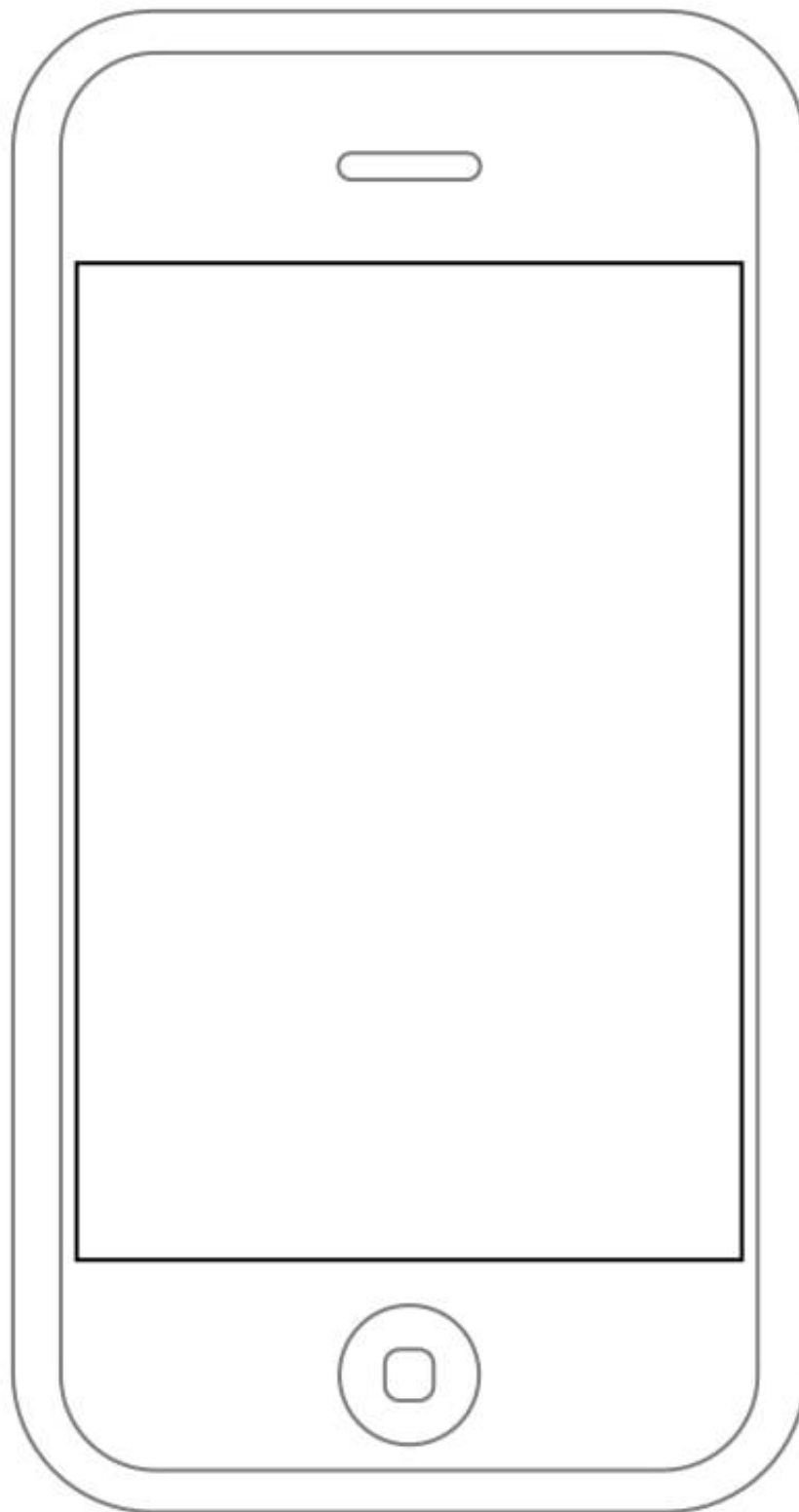
Ugh, there is so much more to say.

- Know your customer
 - Research, interviews, surveys
 - Find out what's most important to them
 - ..But watch out for requests for a “faster horse”
 - Make design trade-offs based on their requirements
 - e.g. easy to learn vs. number of features
- Involve your customer
 - Show them mockups, prototypes, get feedback
 - Take suggestions

Use free online prototyping tools.

Drag & Drop

Label



Style

Tips & Tricks

Share this Mockup with others by sharing the URL.

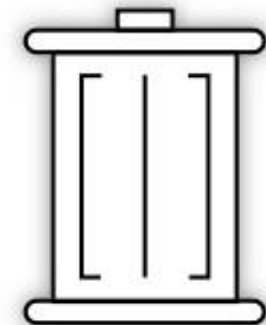
Everyone who knows the URL can make changes. Changes will be synchronized live. To test this, open the URL in two different browser windows.

Double-click widgets to add or change text labels.

Upload

Select PNG

Upload



MockupBuilder.com

The image shows the MockupBuilder.com web application interface. At the top, there is a navigation bar with tabs for 'All', 'Big', 'Buttons', 'Common', 'Containers', 'Layouts', 'Markup', 'Media', 'Text', 'Mobile', and 'Recent'. To the right of the navigation bar are 'Search', 'Share', and 'Presentation' buttons. Below the navigation bar is a toolbar containing various icons for different mockup elements like buttons, text, and images. The main workspace is a grid where a mobile phone mockup is placed. The phone's screen displays the text '274x552' and a button labeled 'Button'. On the right side, there is a sidebar with sections for 'Common Commands' (containing icons for undo, redo, copy, paste, delete, and zoom), 'Screen Manager' (showing 'Screen 1'), 'Choose Template Page:' (with a 'Click to choose' dropdown), and 'Properties' (showing 'ElementSize: 274x552', 'Position: 129x37', 'Orientation' set to portrait, and 'Auto Size' set to a fixed size). At the bottom of the workspace, there is a status bar with 'Version: 1.0.4468', 'Zoom', 'Grid', and 'Font: Comic Sans MS' settings.

I'll post a list of them
hamilton.startupweekend.org tonight.

If you can't build a website\app this weekend, you can still show some prototype design shots on Sunday.

Use free landing page services and content management systems to get up and running fast.

AS SEEN ON

ReadWriteWeb oneforty.  buffer

WE SHOW YOU POPULAR

STRAWBERRYJAM

100% FRIEND BASED TRENDS UHH, WHAT?



BETA SIGN-UP

Your email address

HAVE A PRIORITY ACCESS CODE? ADD IT HERE

OK!



I'll put these in the blog post too...

- Landing page
 - Make customers aware, start getting their info
 - Unbounce.com
- Content management systems
 - Can let you get an e-Commerce website off the ground in a day, with little technical knowledge
 - Wordpress
 - Joomla!
 - Drupal

Measuring.

What to measure? Lots!

- How many clicks or taps does it take to perform the most frequently used action(s)?
 - Average for all actions?
- How long does it take to do something?
 - Find something
 - Buy something
 - Load the game
- Average, worst case website load times?
- How many errors?

What about more subjective things?

- Learnability, retention, satisfaction, trustability?
- Surveys, questionnaires, interviews
 - SurveyMonkey.com
- Use likert scales
 - You can turn level of “agreement” with different statements into a number that you can improve on!

Likert Scales

Please circle the number that represents how you feel about the computer software you have been using

I am satisfied with it

Strongly Disagree ---1---2---3---4---5---6---7--- Strongly Agree

It is simple to use

Strongly Disagree ---1---2---3---4---5---6---7--- Strongly Agree

It is fun to use

Strongly Disagree ---1---2---3---4---5---6---7--- Strongly Agree

It does everything I would expect it to do

Strongly Disagree ---1---2---3---4---5---6---7--- Strongly Agree

I don't notice any inconsistencies as I use it

Strongly Disagree ---1---2---3---4---5---6---7--- Strongly Agree

It is very user friendly

Strongly Disagree ---1---2---3---4---5---6---7--- Strongly Agree

Again, lots of free online tools to help.



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by Software Hamilton Newsdesk

Global Sensation Startup Weekend Returns to Hamilton

April 17, 2012 in [Startup Weekend Hamilton](#) [Edit this entry](#)



Hamilton, ON (April 16, 2012) – Hamilton's Regional Innovation Centre (RIC), **Innovation Factory (IF)** has teamed up once again with **Software Hamilton** to bring the international movement of **Startup Weekend** to Hamilton this spring. Startup Weekend is a global network of passionate leaders & entrepreneurs on a mission to inspire, educate & empower individuals, teams & communities. Attendees come share to ideas, form teams & launch startups.

The first Startup Weekend event in Hamilton last October drew a strong crowd of Hamilton designers, developers, business professionals, and students. This time, the Startup Weekend Hamilton 2 (SWH2) team decided to expand their reach, and have partnered with two other local RICs – Halton's **HalTech** and Niagara's **nGen** – as well as grassroots group **Silicon Halton**, to bring in participants from nearby communities.

Startup Weekend Hamilton 2 will be held **April 27-29, 2012** and will be hosted in the new Collaboratory space at Mohawk College, 135 Fennell Avenue West, Hamilton. Companies from across the community have shown their support for this exciting initiative – **Mohawk College** (Host Sponsor), **Ridout & Maybee LLP** (Gold Sponsor), **Coral CEA** (Silver Sponsor), **PopChips** and **Dellverizer** (food and beverage sponsors). Prizes include packages from **KKT Interactive** and **enthuzr**, in addition to a 6-month incubation space from Mohawk College, and 5 Blackberry Playbooks from **RIM**.

Attendees will have the opportunity to hear keynote speakers **Robin Hopper (IF, Awareness Inc.)**, **Dean McCall (Appficient)**, and **Kevin Browne (Software Hamilton)** on Friday night, and their final presentations on Sunday will be judged by **Chris Farias (kitestring creativ**



[Kevin Browne](#)

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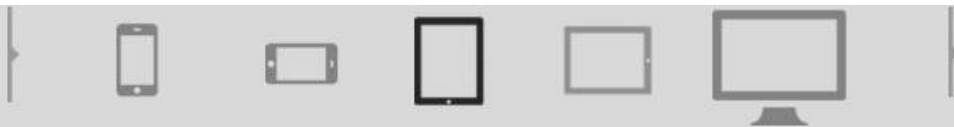
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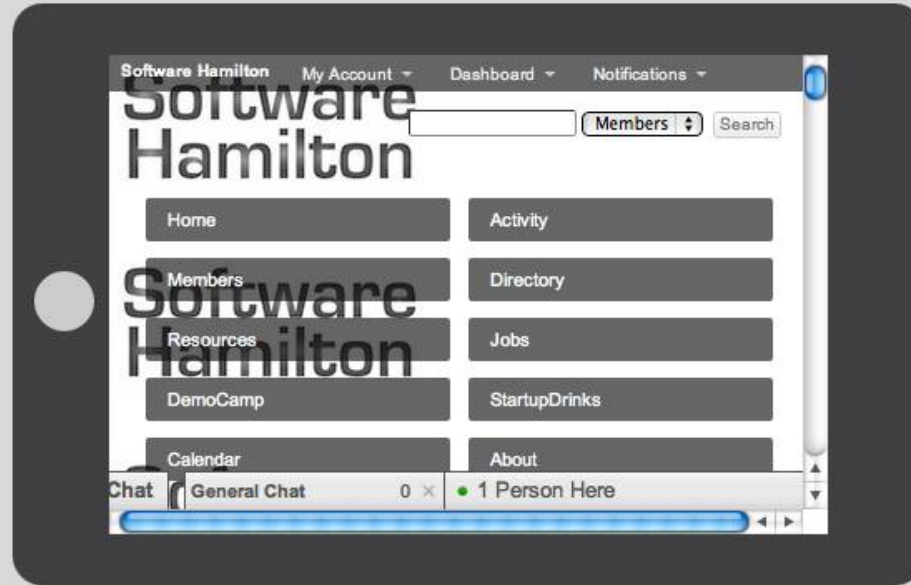
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**Demonstrating
Responsive
Design** by jamusreynolds



<http://www.softwarehami>

View



Demonstrating Responsive Design

by [iamusreynolds](#)



<http://www.softwarehami>

View



Learning.

Use measurements to improve.

- Keep track of what you've learned
- Develop your own list of best practices
- Once you've got metrics, improve on them
 - Reduce clicks or taps required for common tasks
 - Improve load time
 - Reduce errors
 - Increase trust, subjective satisfaction
- Qualitative observations often provide a “how” to improve the more quantitative “what”

Repeating.

Iterative process

- Developing a minimum viable product...
- Create mockups, talk with customers
- Build prototype, measure, test with 5-6 people to find most obvious issues
- Build MVP, measure, test with 20-40 people to iron out smaller issues
 - A random sample of a few dozen people can often provide good, statistically significant data
- Release MVP, get feedback via website survey

Final thought

Your new product's user interface is as important as a new restaurant's customer service.



That's all folks!

