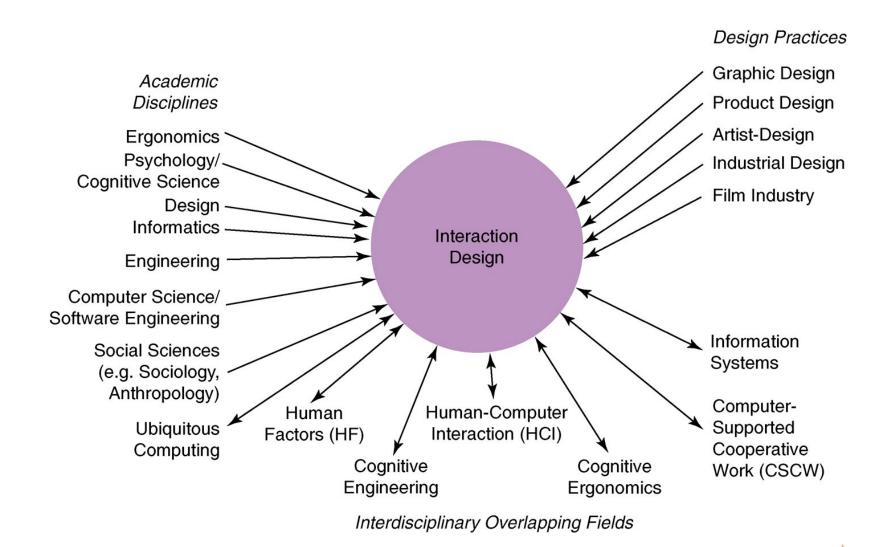
# User Interface Software Tools

Assoc. Professor Donald J. Patterson INF 191A Spring 2014

#### Overview

- I am going to take about methods and software tools but also how they fit into a design process
- There are many tools
  - If I miss a good one, send me a message
- There is no perfect tool
- Find one that's good enough for what you need
- This is a pairing of tools to design stage

#### HCI and Interaction Design



What is design?

#### What is design?

# Achieving Goals Within Constraints

- goals
  - who is it for?
  - why do they want it?
  - what is the designer trying to achieve?
- constraints
  - materials, platforms
- trade-offs



#### Golden Rule of Design

# Understand your materials

- For Human-Computer Interactions
  - understand computers
    - limitations, capacities, tools, platforms
  - understand people
    - psychology, social
    - expect human error
  - understand the interaction between them



## How do you design?



# How do you design?

Their results differ.

So do the scales of their projects So do their goals. and the media they use.

Even their actions appear quite different.

What's similar is that they are designing.

What's similar are the processes they follow.

Our processes determine the quality of our products.

If we wish to improve our products, we must improve our processes; we must continually redesign not just our products but also the way we design.

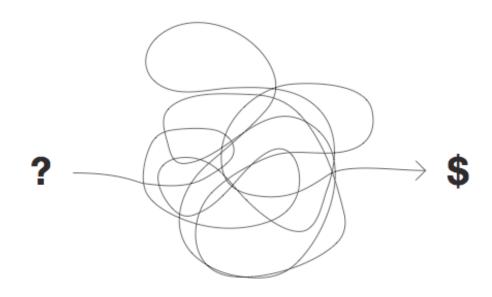
That's why we study the design process.

To know what we do and how we do it.

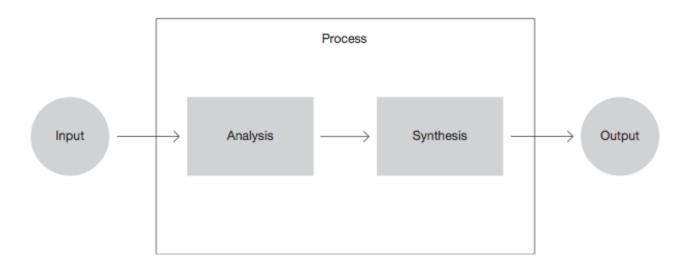
To understand it and improve it.

To become better designers.

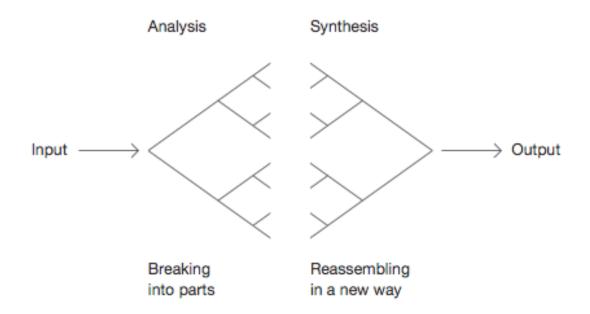
# Design Process Diagrams



# Design Process Diagrams

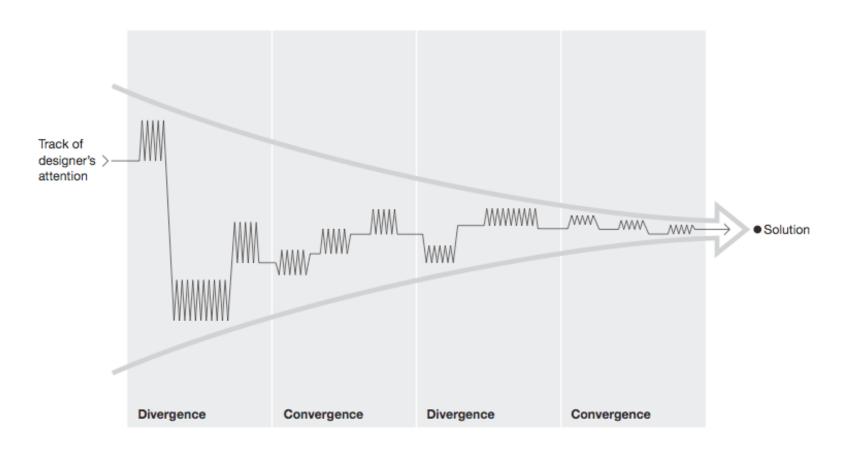


## Design Process Diagrams



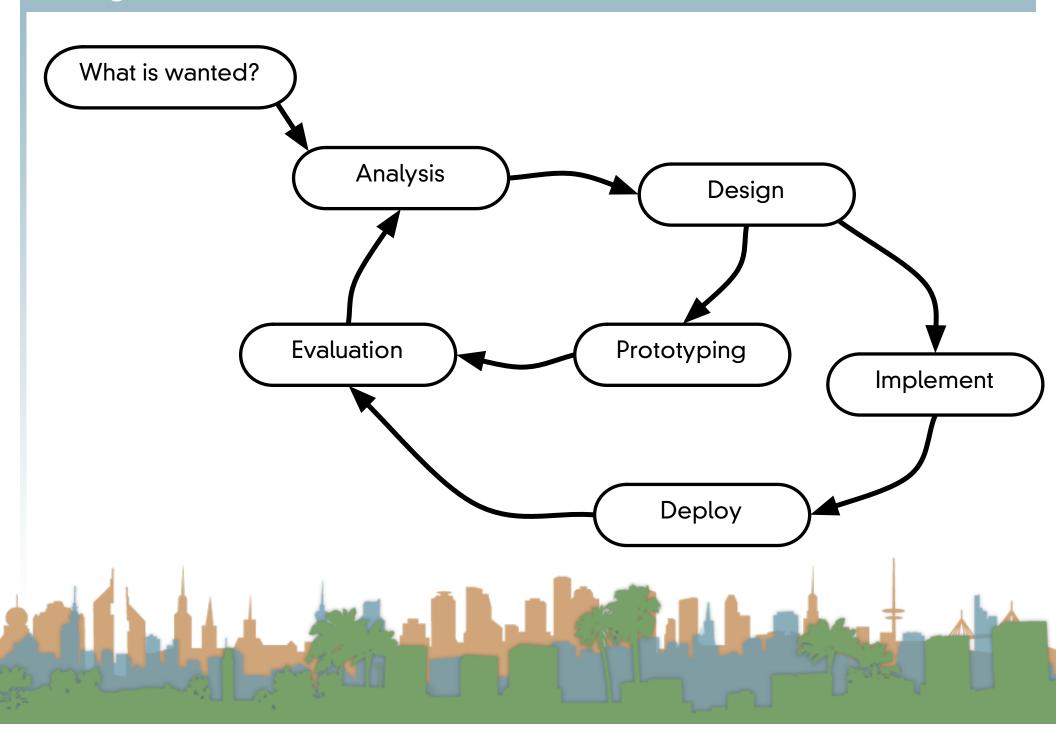


#### One ideal

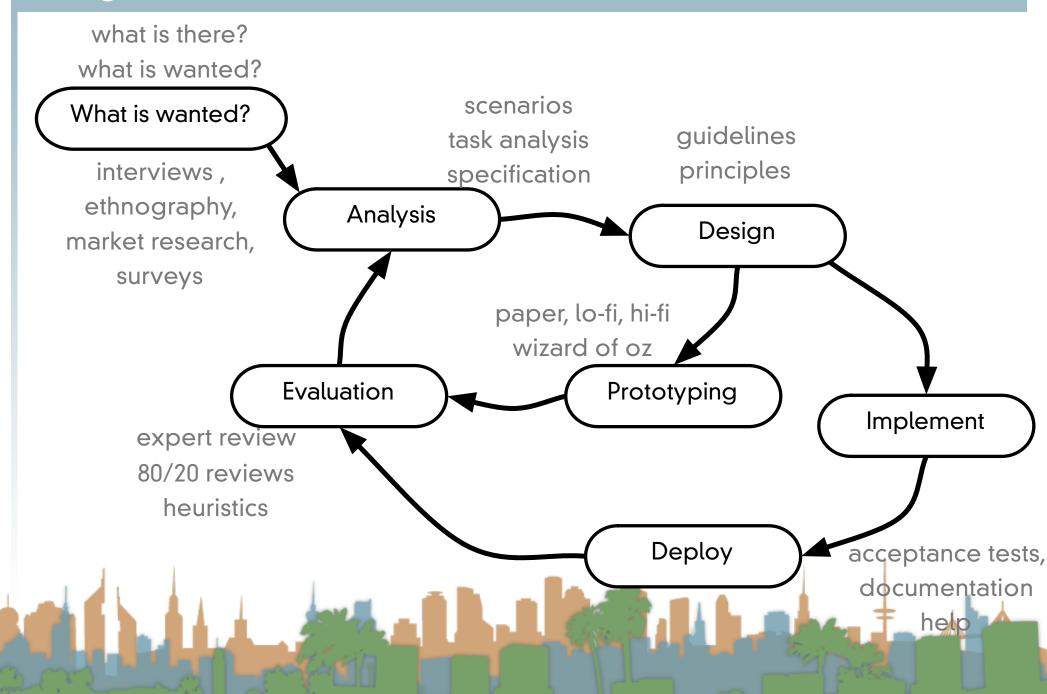




#### Design Process



#### Design Process

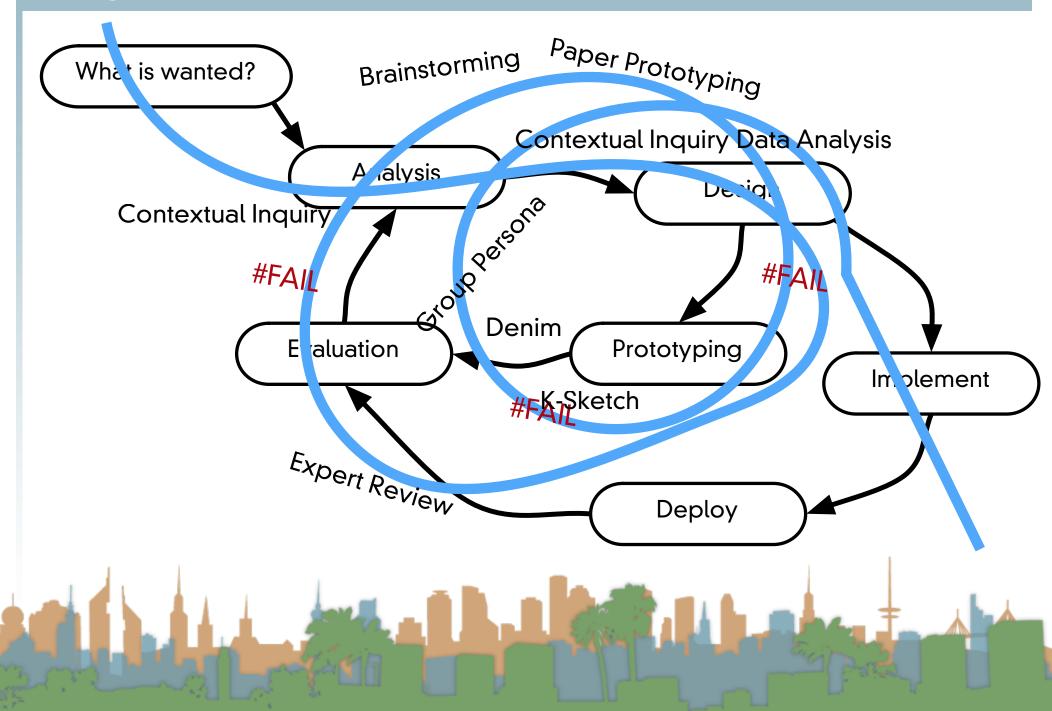


#### Steps...

- requirements
  - what is there and what is wanted ...
- analysis
  - ordering and understanding
- design
  - what to do and how to decide
- iteration and prototyping
  - getting it right ... and finding what is really needed!
- implementation and deployment
  - making it and getting it out there



#### Design Process



# Design Process What is wanted? Analysis Design **Evaluation** Prototyping Implement Deploy

#### Interaction Design - Getting what is wanted

- Contextual Inquiry
  - Outward looking
- Brainstorming
  - Inward looking



#### Contextual Inquiry - what is the question and problem?

- Similar to ethnography
  - Studies the user in place
  - Tries to capture the reality of his work culture and practice
- Different from ethnography
  - It is not open-ended
  - The investigator has a specific focus
  - Her goal is to
    - find the right design
    - design the right system



- Contextual Inquiry
  - Is like being an apprentice to the user
  - Go to their location
    - See their work place
    - See the objects they use
    - See the artifacts they create
    - Experience their communication patterns
      - verbal
      - non-verbal
    - Gather data



- The user is the expert and a partner to the investigator
- However, the investigator is not passive
  - Her goal is to understand what is going on.
    - Asking questions...
    - Questioning motivations...
    - Make sense of the actions is expected
  - She must be ready to challenge her assumptions of understandings of the place, user and task



- Step 1
  - Data collection
    - Interviews
    - Photographs
    - Videos
    - Drawings
    - Sample collection



- Step 2
  - Data analysis
    - Sequential analysis of actions
    - Physical models of actions
    - Models of communication flow
    - Cultural insights
    - Artifact categorization



- Step 3
  - Outcome
    - Representation of the required task sequences, artifacts and communication channels that must be supported.
    - Understanding of physical and cultural constraints



- Resources
  - IDEO Method Cards
    - Learn
      - Activity Analysis
      - Competitive Product Survey
    - Look
      - Still-Photo Survey
    - Ask
      - Narration/Think Aloud
    - Try
      - Behavior Sampling
  - http://www.ideo.com/work/method-cards/



#### Interaction Design - Getting what is wanted

- Contextual Inquiry
  - Outward looking
- Brainstorming
  - Inward looking
    - http://dudye.com/5-effective-brainstorming-exercises
    - http://www.isixsigma.com/tools-templates/brainstorming/ brainstorming-rules/



#### Goals of Brainstorming

- Generating alternatives is a key principle in most design disciplines
- This should be encouraged in interaction design
- "The best way to get a good idea, is to get lots of ideas" - Linus Pauling



#### Goals of Brainstorming

#### Guidelines:

- There are no dumb ideas. Period.
  - It is a brainstorming session, not a serious matter that requires only serious solutions. Remember, this is one of the more fun tools of quality, so keep the entire team involved!
- Don't criticize other people's ideas.
  - This is not a debate, discussion or forum for one person to display superiority over another.
- Build on other people's ideas.
  - Often an idea suggested by one person can trigger a bigger and/or better idea by another person. Or a variation of an idea on the board could be the next "velcro" idea. It is this building of ideas that leads to out of the box thinking and fantastic ideas.
- Reverse the thought of "quality over quantity."



#### Brainstorming

- Brainstorming is used to
  - generate ideas
  - refine ideas
  - develop ideas
- "Brainstorming is used when you're searching for ideas and discovering possibilities that may be found in problems."
- Include stake holders in creating:
  - a new future
  - a new innovation
  - a way to solve a problem
- Do not critique any ideas at this stage

# **INSTITUTE FOR THE FUTURE**

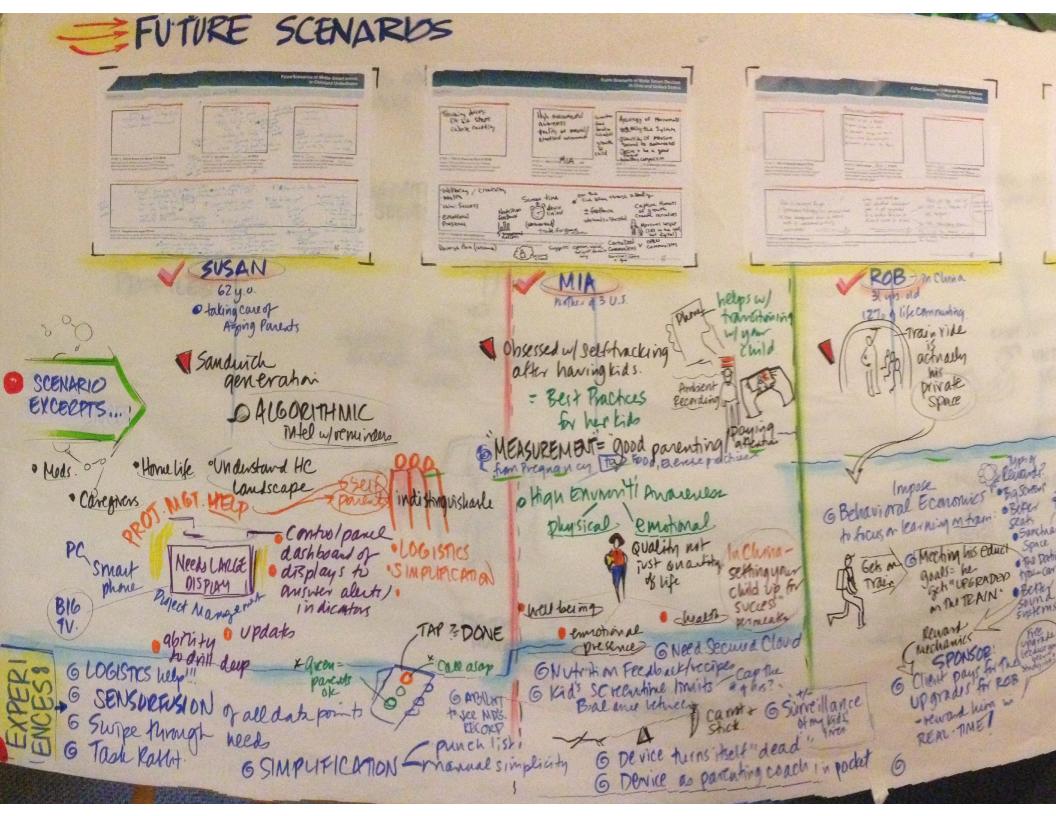
I. FORESIGHT perception of the significance and nature of events before they have occurred

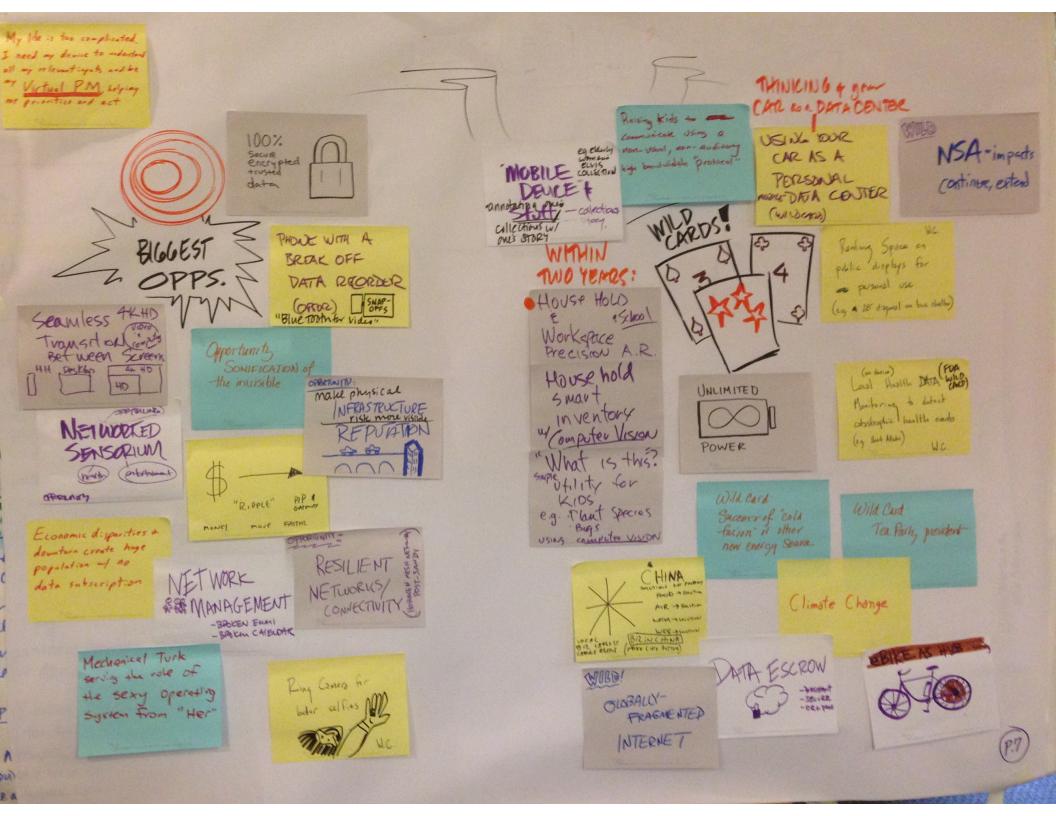
II. INSIGHT the act or outcome of grasping or perceiving the inward or hidden nature of things

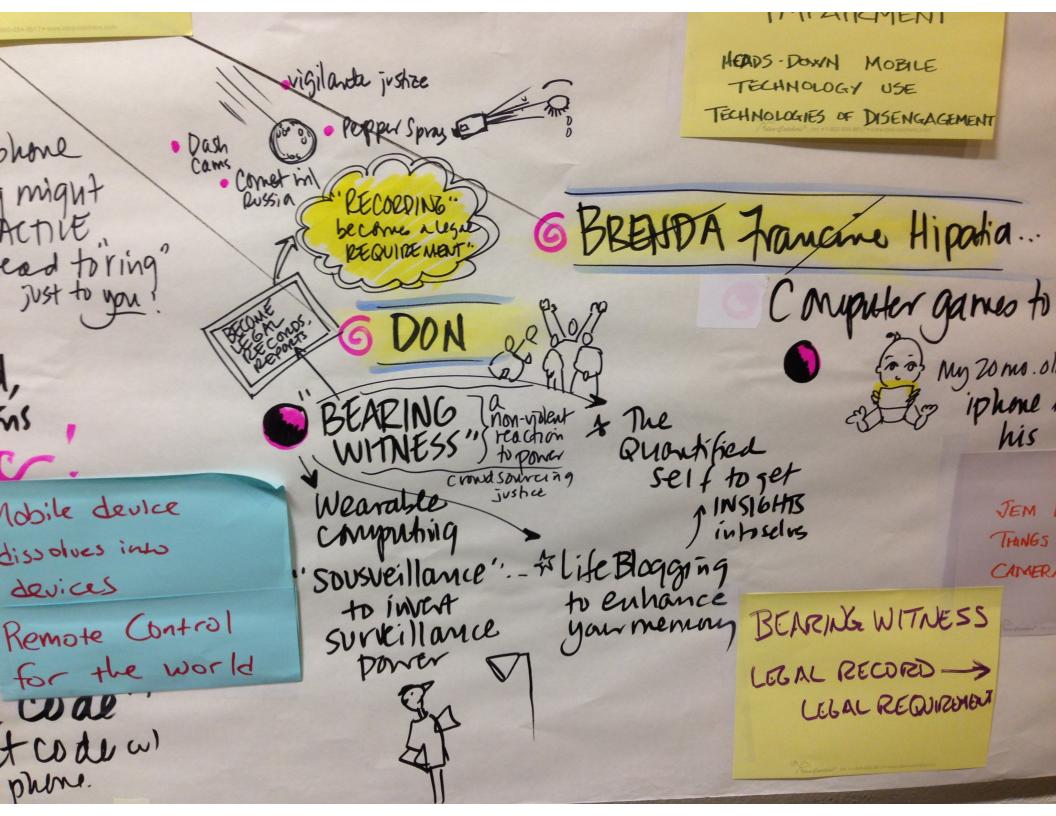
III. ACTION the state or process of acting or doing



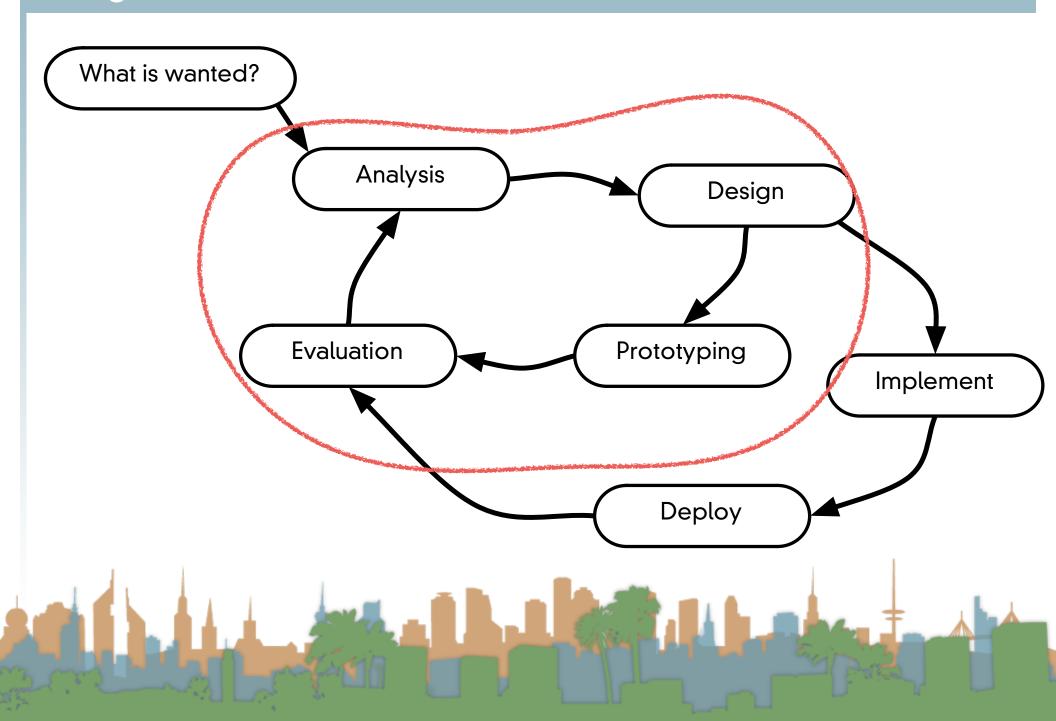






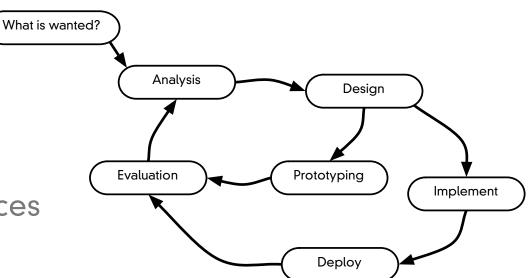


#### Design Process



### Online questionnaires

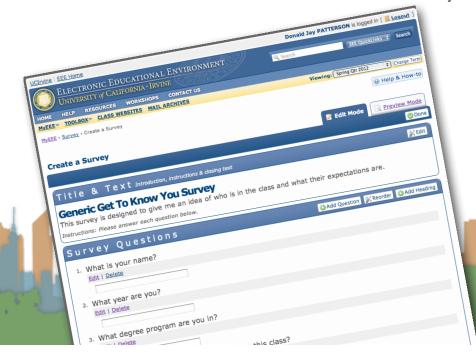
- Can be used to:
  - Gather requirements
    - "What is wanted"
  - Evaluate prototypes
    - "Evaluate"
  - Understand user experiences
    - "Analysis"





#### Advantages of online questionnaires

- Responses are usually received quickly
- No copying and postage costs
- Data can be collected in database for analysis
- Time required for data analysis is reduced
- Errors can be corrected easily





Plans & Pricing

Take a Tour \*

Resources \*

#### Example Questions & Results:

How likely are you to cancel your Netflix subscription in the next 3-6 months?							
	Respons Percen						
Extremely likely	5.7	% 15					
Very likely	5.7	% 15					
Moderately likely	13.7	% 36					
Slightly likely	26.3	% 69					
Not at all likely	48.5	% 127					

#### Why do you think you might cancel your Netflix subscription in the next 3-6 months?

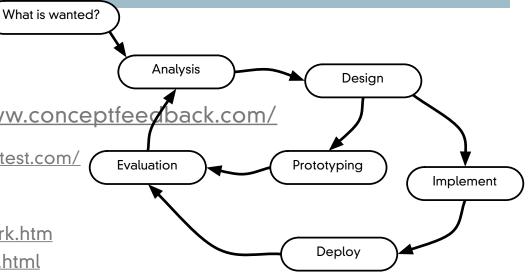
		Response Percent	Response Count
Price is too high		23.7%	32
May move to a competitor		5.2%	7
Don't use enough		20.0%	27
Content I want is not available		27.4%	37
Poor video or audio quality		5.2%	7
Poor customer service		0.0%	0
Poor technical support	T	0.7%	1
Other (please specify)		17.8%	24

## Survey Tools

- EEE Tools Survey
  - https://eee.uci.edu/toolbox/survey/published.php
- Survey Monkey
  - http://www.surveymonkey.com/
  - Supports Targeted Audiences
- Google Forms
  - <a href="http://youtu.be/xEY10Ub-k-U">http://youtu.be/xEY10Ub-k-U</a>
- Mechanical Turk
  - https://www.mturk.com/mturk/welcome
- Audiences
  - Social Sciences Pool
    - http://hsl.ss.uci.edu/hsl\_experimenter-info
  - mailing lists
  - Survey Monkey
- Lotteries

#### **Analysis**

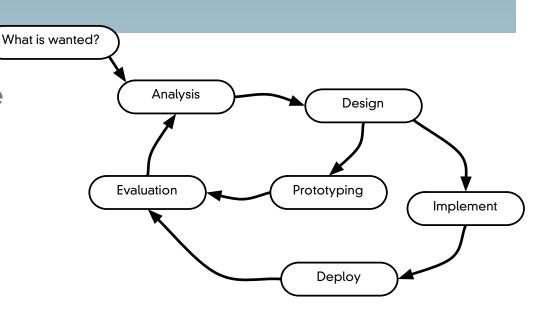
- "Expert Review"
  - Concept Feedback: <a href="http://www.conceptfeedback.com/">http://www.conceptfeedback.com/</a>
  - FiveSecondTest: <a href="http://fivesecondtest.com/">http://fivesecondtest.com/</a>
- Chalkmark/ClickHeat
  - http://www.optimalworkshop.com/chalkmark.htm
  - http://www.labsmedia.com/clickheat/index.html
  - Test user understanding of action
  - screen shot + heatmap
- Action Tracking
  - ClickTale: <a href="http://www.clicktale.com/default.aspx">http://www.clicktale.com/default.aspx</a>

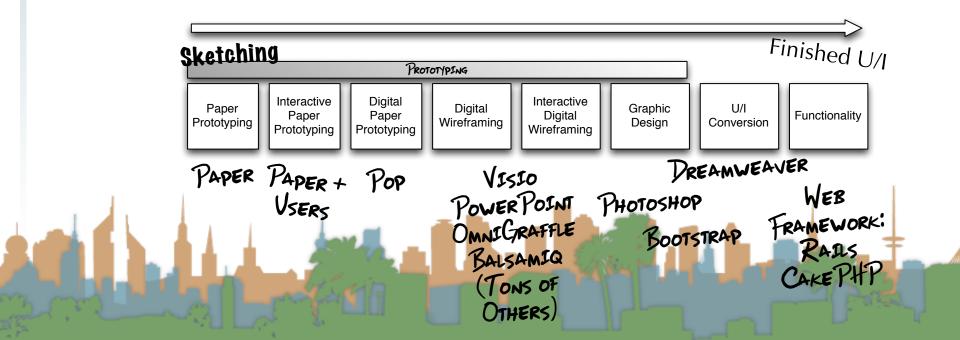


#### Prototyping

 Each time you do a prototype it becomes more refined

- from Sketching
- to deployment
- and beyond





# Prototyping

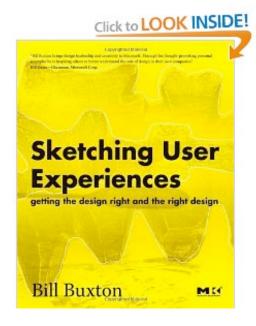


http://www.youtube.com/watch?
 feature=player\_embedded&v=tkqqPGXMXRc



#### Prototyping

- Paper Prototyping
  - Post it video
  - Tektronics video
    - http://www.elsevierdirect.com/companion.jsp?ISBN=9780123740373
  - iPhone:
    - http://www.youtube.com/watch?v=6TbyXq3XHSc
- Hybrid
  - Pop!
    - <a href="http://popapp.in/">http://popapp.in/</a>
- Digital Sketching Prototyping
  - Balsamiq:
    - http://www.youtube.com/watch?v=70hfU7\_95Gw
  - PowerPoint:





- Why sketching?
  - Quick
  - Timely
  - Inexpensive
  - Disposable
  - Plentiful
  - Clear Vocabulary
  - Distinct Gesture
  - Minimal Detail
  - Appropriate degree of refinement
  - Suggest and explore, not confirm
  - Ambiguity

Quick to make (at least after some practice)

- Why sketching?
  - Quick
  - Timely
  - Inexpensive
  - Disposable
  - Plentiful
  - Clear Vocabulary
  - Distinct Gesture
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Can be provided when needed

- Why sketching?
  - Quick
  - Timely
  - Inexpensive)
  - Disposable
  - Plentiful
  - Clear Vocabulary
  - Distinct Gesture
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A sketch is cheap. High cost inhibits design (early in the process)

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If you can't afford to throw it away it probably isn't a sketch. The investment is in the concept, not the art. It's value depends on its disposability.

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Sketched interfaces tend to work best as a series, in context with many other sketches.

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The way a sketch is drawn distinguishes it from other ways of rendering. The style signifies to it's viewers that it's "just a sketch"

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  - Suggest and explore, not confirm
  - Ambiguity

There is a fluidity to sketches that gives them a sense of openness and freedom. They are not precise like a blueprint or engineering drawing.

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  - Quick
  - Timely
  - Inexpensive
  - Disposable
  - Plentiful
  - Clear Vocabulary
  - Distinct Gesture
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They include only what is necessary to communicate the concept. Extra detail is distracting. Going beyond "good enough" is a bad thing with sketching.

- Why sketching?
  - Quick
  - Timely
  - Inexpensive
  - Disposable
  - Plentiful
  - Clear Vocabulary
  - Distinct Gesture
  - Minimal Detail
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  - Suggest and explore, not confirm
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a sketch is helpful because it suggests only a level of precision that corresponds to the level of certainty in the designer's minds at the time.

- Why sketching?
  - Quick
  - Timely
  - Inexpensive
  - Disposable
  - Plentiful
  - Clear Vocabulary interactions.
  - Distinct Gesture
  - Minimal Detail
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  - Ambiguity

Sketches don't "tell" they
"suggest". Their value lies not
in the drawing, but in its ability
to provide a catalyst to the
desired and appropriate
behavior, conversations, and

- Why sketching?
  - Quick
  - Timely
  - Inexpensive
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  - Plentiful
  - Clear Vocabulary
  - Distinct Gesture
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  - Suggest and explore, not confirm
  - Ambiguity

Sketches are intentionally ambiguous. They can be interpreted in different ways. Unexpected relationships emerge from viewing them, even for the sketcher.

#### Prototyping - Enterprise Tools - post sketching

- Expression Blend MS family of products
  - <a href="http://expression.microsoft.com/en-us/cc136530">http://expression.microsoft.com/en-us/cc136530</a>
  - http://youtu.be/47Luwq85NCs
  - SketchFlow Silverlight deprecated
- Adobe Catalyst Flash deprecated
  - For creating Flash/Flex interaction design
    - http://www.adobe.com/products/flashcatalyst.html
- Adobe Dreamweaver HTML
  - http://www.adobe.com/products/ dreamweaver.html
  - http://www.adobe.com/products/dreamweaver.html#nerolimedia\_split\_dw-updates-cc\_708x398-1300.mp4
  - http://www.adobe.com/products/dreamweaver/features, sl id-contentfilter sl featuredisplaytypes sl new.html#content-dotcom-en-fe

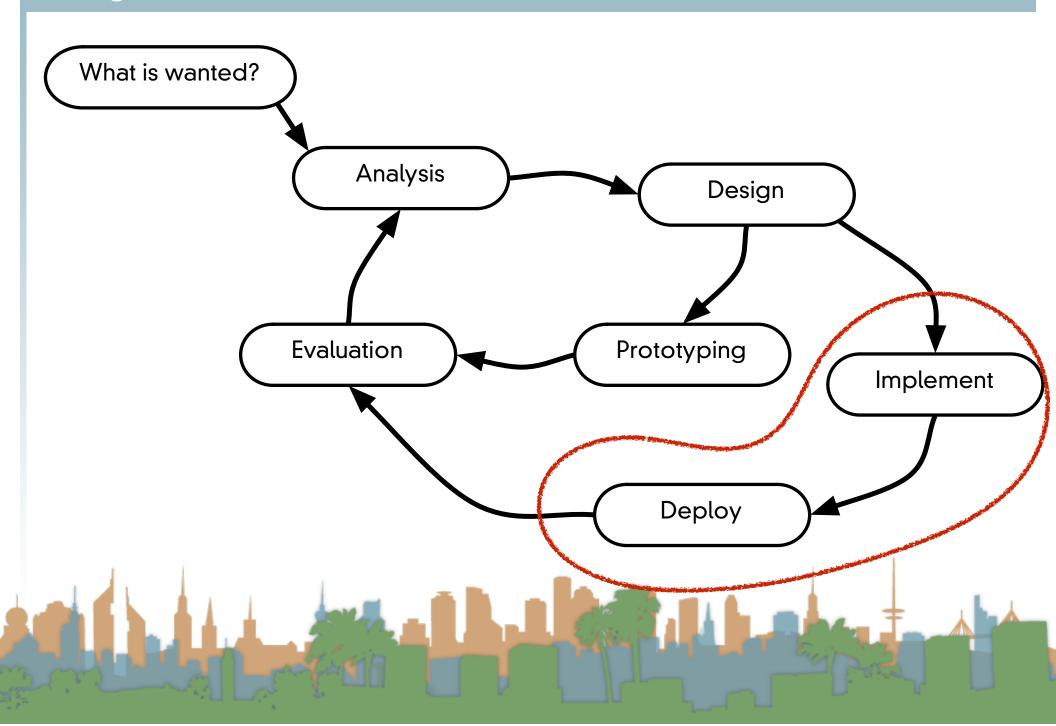








# Design Process



## UI/UX evaluation post-deploy

- Feedback Army
  - http://www.feedbackarmy.com/
- Silverback
  - http://silverbackapp.com/
- Userfly
  - http://userfly.com/
- Morae
  - http://www.techsmith.com/morae/uses.asp
- Hana Lab



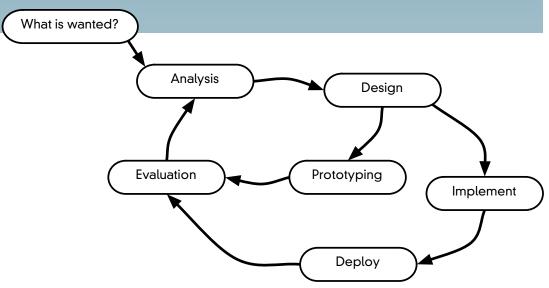


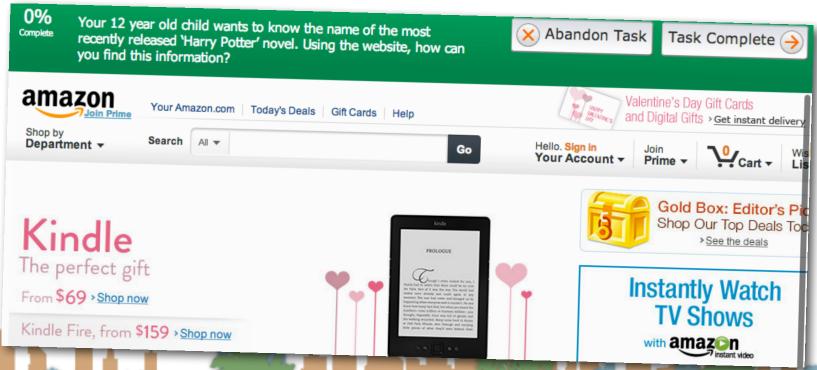




#### Acceptance tests

Loop 11: <a href="http://www.loop11.com/">http://www.loop11.com/</a>

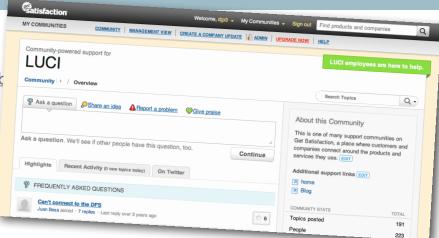




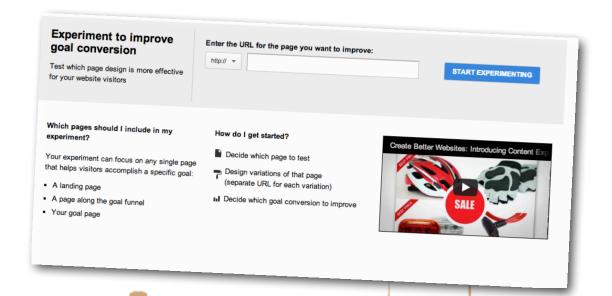
http://www.usefulusability.com/24-usability-testing-tools/

# UI/UX evaluation post-deploy

- Get Satisfaction
  - http://www.youtube.com/watch?feature=player\_emk
- Google Analytics
- Google Context Experiments





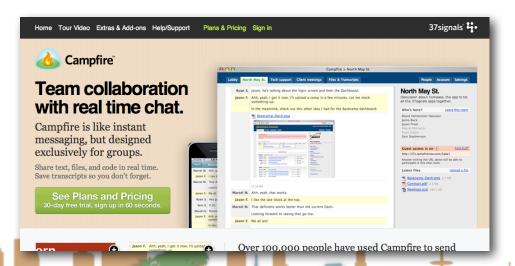


## UI/UX evaluation post-deploy

- Get Satisfaction
  - http://www.youtube.com/v feature=player\_embeddec CRF4
- Campfire
  - http://campfirenow.com/#/
- Google Analytics







## Need followup

- Other ideas
  - Camtasia
    - screen recorder
  - processing
    - visualization design
  - Kompozer.net
    - web design for dummies
  - Pencil Project
    - online Balsamiq
  - Lucid chart
    - online omnigraffle
  - Axure.com instead of Balsamiq
- Usabilla

#### Summary

- Good interaction design requires
  - an iterative design process
  - input from stakeholders at each step
  - pairing of appropriate tools at the appropriate step
  - expertise with tools
  - wise tradeoffs between time, money, and quality
  - the ability to effectively communicate why you are doing what you are doing to the customer



### For next time

- Pencil Project
  - open-source prototyping
    - http://pencil.evolus.vn/Features.html
- invision
  - collaborative design review system
    - http://www.invisionapp.com/#tour
- Flat UI
  - Bootstrap skin CSS system
  - http://designmodo.github.io/Flat-UI/
- Objectified
  - Documentary on product design
    - http://www.objectifiedfilm.com/

#### For next time

- Prototyping
  - JustinMind
    - http://www.justinmind.com/prototyper/ examples
  - CSS based android mock up tool
    - Fries
      - http://jaunesarmiento.me/fries/



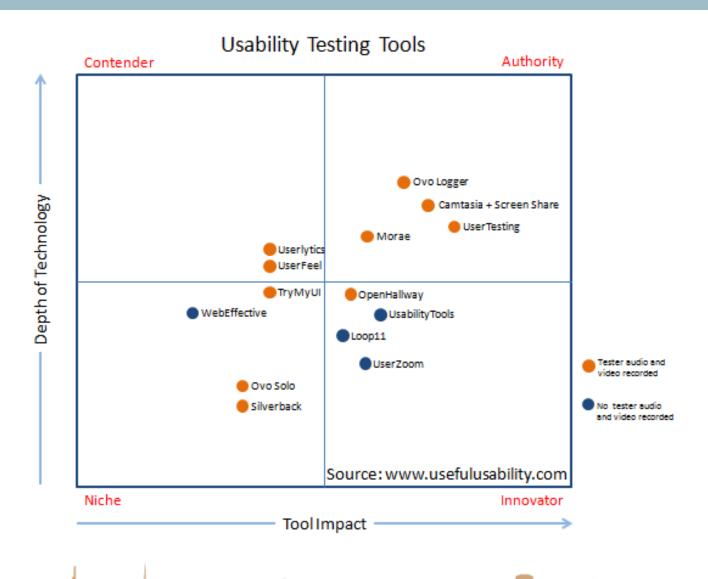
### For next time

#### **Evaluation of Prototyping Tools**

cooper

TOOL	TIME/SPEED	FIDELITY	COLLABORATION/ SHARING	USABILITY TESTING	SUPPORT	INTERACTIONS/ GESTURES	ANIMATIONS	DEVICE TESTING
Briefs	120 min	Above Average	Low	Average	Low	None	Average	High
Flinto	5 min	Above Average	Average	Average	Low	Low	Average	Above Average
InVision	10 min	Average	High	Average	Above Average	Low	None	None
proto.io	120 min	Above Average	High	Average	Above Average	High	Average	Average
Axure	30 min	Above Average	Average	Average	High	Average	Above Average	Low
Protoshare	40 min	High	High	Average	High	Low	High	Low
Solidify	20 min	Average	High	High	Above Average	None	None	Above Average
Easel	15 min	Average	High	Average	High	None	None	Low
Justinmind	40 min	Above Average	Above Average	Average	High	High	Above Average	Above Average
Fluid	45 min	Above Average	Above Average	Average	Average	Above Average	Above Average	Above Average

#### For next time: usability testing tools



#### For next time: usability testing tools

e F

abetteruserexperience.com/ux-directory/





- UX Directory

#### **UX Directory**

A Better User Experience proudly presents a better web directory of UX design services and tools.

If you know of a tool that we should link to but aren't, drop us a line and we'll add it.

#### **UX Tools**

#### **User Testing Tools**

- Chalkmark Make it easyTM with our online usability testing software
- ClickTest User interaction analysis for your mocks and wireframes
- Content Experiments in Google Analytics Testing up to five full versions of a single page, each delivered to visitors from a separate URL
- Domain Polish Inexpensive, on-demand focus groups
- EasyUsability.com Usability test your website with targeted users for \$15
- Five Second Test Landing page optimization for your mocks and wireframes
- IntuitionHQ Website usability testing for web designers
- Loop11 ONLINE USABILITY TESTING. POWERFUL. SIMPLE.
- Morae Software & Web User Experience Testing
- NavFlow Path and conversion analysis for your mocks and wireframes.
- Optimal Sort Online Card Sorting Software
- Optimizely A/B testing you'll actually use
- Solidify Easily Test Workflows and Ideas
- Three Quick Questions \$5 for three questions. Read our

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inspectlet
Record and watch
everything your
users do.



