

CS 4249: Needfinding

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Week 2

(Partially synthesized from Scott Klemmer's HCI course, IDEO, Stanford D.School,
and Berry-Kahn materials)

Outline

1. Needfinding methods

2. A Case Study

3. Curiosity

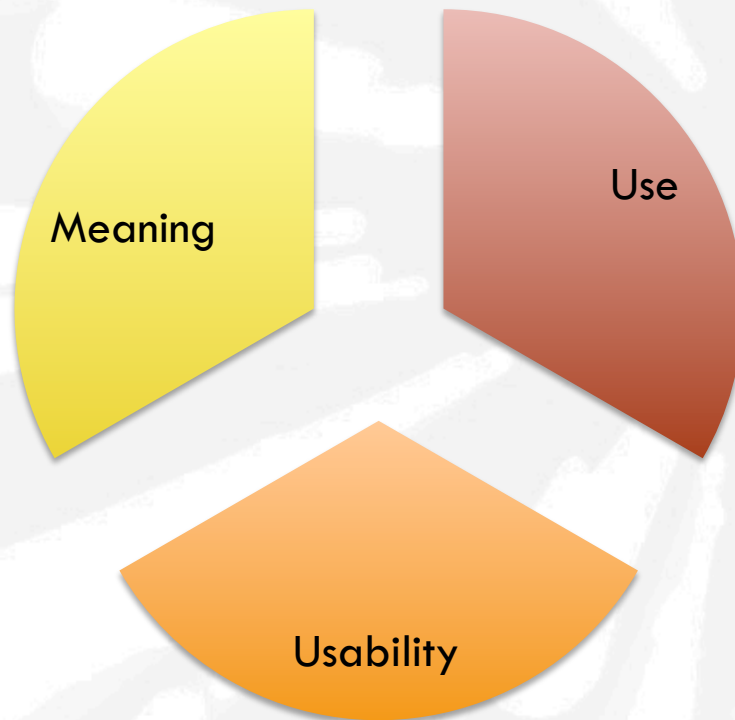
4. Recording for Analysis

- Non-interactive
- Investigator-Led
- Participant-Led

These methods will overlap a bit with evaluation methodology, to be reviewed later

What is Needfinding?

It's the act of finding needs – the **gaps** between use, usability and meaning.



Use

- The basic functionality of a product
 - Explicit need
 - Task to be solved
 - Work that has to be done
 - What it has to do

Usability

- The cognitive sense of the product
- Or its physical ergonomics

Meaning

- Expectations
- Emotional Resonance
- Organizing Frames

Quick Q

If needs are the gaps between use, usability and meaning,

But use includes the “explicit needs”

Then isn't this a circular (recursive) definition?

Empathy



- Rarely are you designing for yourself
- You need to understand the ecology in which a product / idea will be used
- Requires understanding for their point of view, walking in their shoes
 - But to do this, you need to do a thorough self-appraisal, be aware of who you are
 - Why? You need to be a neutral observer aware of your own bias
 - What does this mean? Reflexivity asks us “to explore the ways in which a researcher's involvement with a particular study influences, acts upon and informs such research”.

Your Obituary in 6 Words

[Brandon Sun](#), July 25, 2009

By David McConkey

Can just six words sum up a life? That is the premise of an Internet challenge that resulted in thousands of submissions and recently the publication of a book.

[Not Quite What I Was Planning](#) is a collection of almost 1,000 of the best of these six-word memoirs.

The idea of describing a life in six words was launched online by the [Smith Magazine](#) website, whose motto is “Everyone has a story.”

- Try this now: Spend 3 minutes coming up with your words. Do this on your own, without your
- Then spend 3 minutes to share with the person(s) behind or in front of you.
- We’ll pick a few obituaries to share in class.

Each person has a story

“Nothing profound, I just sat around.”

“I watched a lot of television.”

“Coulda, shoulda, woulda: a regretful life”

“I travelled each and every highway.”

“Thought long and hard. Got migraine.”

“Never really finished anything, except cake.”

- What do these say about the person’s values, attitudes, ideas?
- It’s only one story, but it is a story!

Need finding

- **Non-interactive: Observation**
- **Investigator-Led: Interview**
- **Participant-Led: Experience Sampling**

1. Observation



- “Deep Hanging Out”/Apprenticeship
 - Attributed to American anthropologist Clifford Geertz
 - Live in the environment that they are in
 - Provide explanation of the symbols, tasks and values that they have
 - Aids empathy in both directions
 - Many won’t admit or know that they have needs. Might find you intrusive

More questions

- What does that mean?
 - Watching people!
 - In their native environment
 - In context, when possible
- Questions don't always generate answers...
but they do generate more questions!

Why?

Watch for:

- Mistakes – incorrect method for a task
- Slips – incorrect action for a correct intention
www.interaction-design.org/encyclopedia/human_error_slips_and_mistakes.html
- Workarounds – Getting by the system's flaws
- Artefacts – Labels that signal workarounds, warn for errors

Contextual Design

Study your product's use *in situ* but in as many different guises

- Different stakeholders
- Different times of day
- Different functions or goals
- Different facets: physical, emotional, age
- At different scales

Methods:

dschool.stanford.edu/wp-content/uploads/2011/04/rad-resource-packet.pdf

- 2x2 Matrix
- Powers of Ten

2. Interviewing

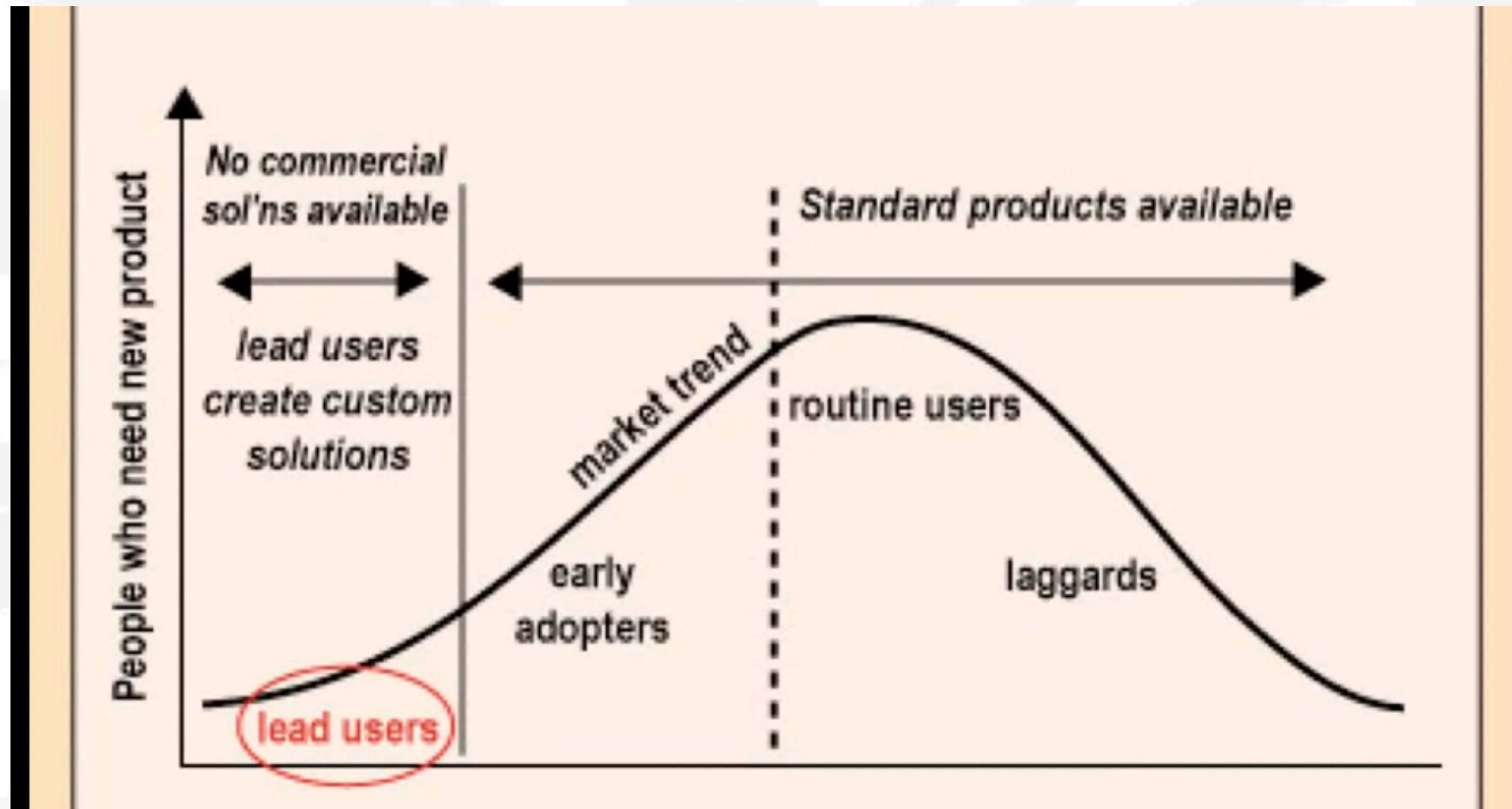
- **All stakeholders, and different abilities or roles**

Lead User
Extreme User
Expert
Casual User
First Time User

Impaired
Handicapped
Age

Managerial
Sales
End Users
Parents
Children
Support
- ... and their indirect social network
(chain/snowball sampling)
- If you cannot get actual target users,
find your best approximation

Lead Users



Credits: Scott Klemmer's HCI course @ Coursera

Interview Structure

One on one

- Open mindedness
- Awareness of what they say vs. do
- Favor concrete over preferences
- Unstructured versus Structured

Methods:

- Probing
- Silence

Focus Groups

- Appropriate for community, sensitive issues where opinion comes up by talking with others
- Different type of stakeholder for each group
- Scales better
- Can yield to individual interviews, follow up later

3. Questionnaires

- Scales better
- Good for answering specific questions
- But limited in flexibility, preset ahead of time
- Sensitive to question phrasing
 - Requires piloting, also iterative

We'll talk more about this methodology later in evaluation...

4. Subject Diaries

What about if you're not there to observe?

- Good for especially for longitudinal or sporadic behavior
 - Ask subjects to do the needfinding themselves (when appropriate)
 - Diary: marks on paper, or audio recording
 - Balance subject's ease of entry and investigator's need for structured input
 - Requires reminders / paging “what are you doing now?”

5. Indirect Observation

- Studying documentation, research literature
 - Useful for formal activities that have manuals

- Researching similar products
 - Prompts requirements and differentiation

These usually are auxiliary methods since they don't interact with users

Needfinding Tradeoffs

Time of investigator

Insightfulness

Ability to validate

of subjects

Case Study: Getting your hands dirty

- Follow through and discuss on IVLE later

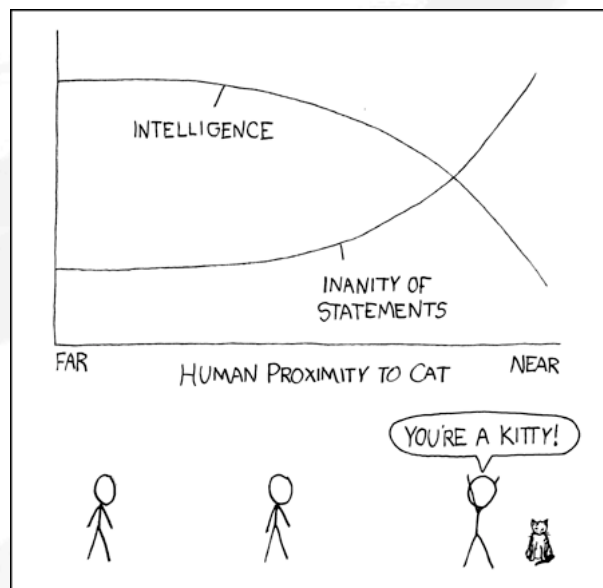


bit.ly/HYnjQT

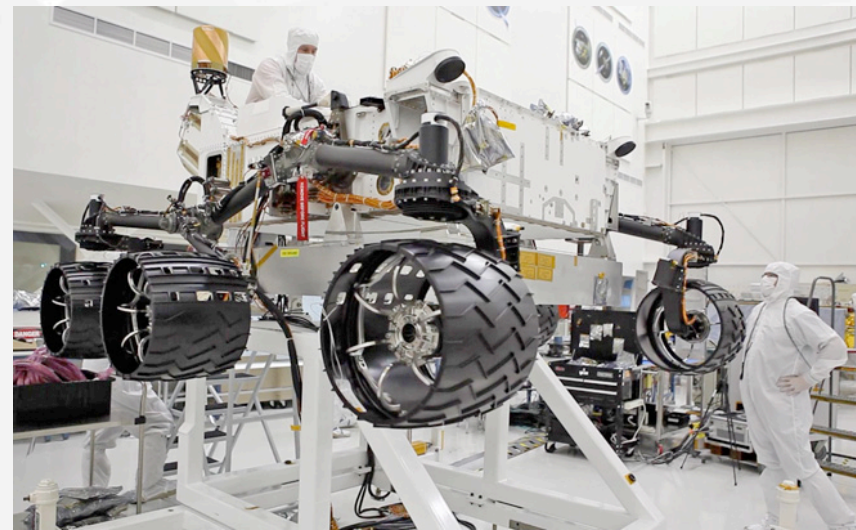
Curiosity killed the cat

“ I have no special talents.
I am only passionately
curious.”

- Albert Einstein



xkcd.com/231/



[www.wired.com/wiredscience/
2010/10/nasa-mars-rover-webcam/](http://www.wired.com/wiredscience/2010/10/nasa-mars-rover-webcam/)

Curiosity Exercises

- Read, read, read
- Play and dabble
- Embrace newness
- Seek out
- Listen and share

- Dev Patnaik of Jump:
“Read random
Wikipedia articles”

Ask

Recording for Analysis

- Notetaking
- Camera
- Audio
- Video

Factors:

- Source of illustration, anecdotes
- Permission, ethics protection
- Time to code and analyze

Summary + Issues

- **Needfinding: Opening up the possibilities**

Non-interactive: Observation

Investigator-Led: Interview

Participant-Led: Experience Sampling

- **Triangulate: Do all of the above**
- **Iterate: (the pilot is the first run)**