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

2. A Case Study

3. Curiosity

4. Recording for Analysis

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 is 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”.

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CS 4249: Phenomena and Theories of HCI
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!
Watch for:

- **Mistakes** – incorrect method for a task

- **Slips** – incorrect action for a correct intention

- **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:

- 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/HYniQT
Curiosity killed the cat

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

www.wired.com/wiredscience/2010/10/nasa-mars-rover-webcam/
xkcd.com/231/
Curiosity Exercises

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

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