Getting Data
CS 464, Spring 2018

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User-Centered Design

Goal: Innovate and invent; identify opportunity users don’t see themselves.

• Goes far beyond traditional requirements gathering looking for pain points and problem solving

• Designers need detailed data (facts) and insight (understanding) to achieve this goal

Previously: designs needed to be grounded in user task understanding

Today: designs must be grounded in user’s lives

Why? Almost everything we do extends past the traditional workplace; innovative designs help enhance the user’s sense of self, community relationships.
User-Centered Design

What? *Relevant details.*

It is hard to get such detail

- Important details are often invisible because people don’t pay any attention to them. They have become habitual ways of doing things.

- You can’t ask users what these are – they don’t know, they aren’t aware of the habitual things they do.

- A really good way you can discover them is to watch them occur and talk about them, hence *field studies* are required.
User-Centered Design

What about marketing info?

• Aimed at scoping out market potential
• Tend to be quantitative, use pre-defined questions
• May identify things to explore, but don’t provide detailed data useful for design

Qualitative field studies can uncover detail about user activities and potential innovative products
User-Centered Design

What about other qualitative techniques?

• Focus groups – people don’t remember habitual details so putting them in another location and asking them doesn’t‘ elicit detail data

• In-house experts – same problem; they are not in the context of the work environment of interest
  • Also, there are many different user roles, and an in-house expert can’t be an expert in all of them
User-Centered Design

What about prototype or A/B testing techniques?

• May be useful for incremental improvements once a design exists, but don’t help designers come up with innovative products

• Users may be able to say whether they like something or not, but usually can’t give enough detail about what they are really trying to do that designers can take action
User-Centered Design

Data has to be internalized by the entire design team

- Performing a field observation helps do this for whoever went to the field
  - We will use contextual interviews for our field observation technique
- Have to immerse the entire team; we do this by having the entire team interpret data from multiple contextual interviews and work together to find insights
  - We will build models that emphasize different aspects of the detailed user data to drive a systematic analysis of the data and capture insights
Contextual Inquiry

What: Go to where the user is working, watch them work and talk with them about what they are doing

Immediate result: You understand them better!

Ideally: They are currently working on the task you want to observe, so this is a contextual interview

Sometimes this isn’t possible, so a retrospective interview might be used (see slide 11).
Contextual Inquiry

Interview relationship: Master/Apprentice model
• Attitudes and behaviors elicit the best quality data
  • Apprentice inquiry attitude on the part of the researcher
  • Master sharing attitude on the part of the user
• Master craftsmen teach by doing; users talk about what they’re doing as they do it, so all their habitual details are readily observable.
• In the apprentice role the interviewer can ask about details and discover which are relevant
Contextual Inquiry

Interview relationship: Master/Apprentice model

• This is also the time to test interpretations of what the user is doing; talking about details keeps users from giving generalizations

• Doing something with the objects they use helps people remember details; these artifacts and context are critical

Researcher is *immersing in user’s world to transform it*, not trying to become good enough to do the work
Contextual Inquiry

Interview relationship: Master/Apprentice model

**Retrospective interview:** Use artifacts created in past work to walk through what actually happened

- Especially useful for observing activities that happen infrequently or over long periods of time. Two ways:
  1. Replay/reconstruct the event; user walks to places, uses software that they used (repeating what they did) – reconstructs things in order
  2. Use artifacts to re-tell the story; takes probing to get at details

- Don’t use for things that are over 2 weeks old; otherwise you get abstracted data no matter what you try
Contextual Inquiry Principles

1. Context: Go to the user and see what they do as they do it

Allows researcher to obtain on-going experience and concrete data

-- The opposite of what often passes for data: summary and abstract data!

• We are taught to summarize, and it’s hard not to do this
  • A corollary is to abstract information

Allows researcher to see user’s emotional reactions and discuss motives as work progresses
Contextual Inquiry Principles

2. Partnership: Collaboration between user and interviewer

Allows user and researcher to explore to understand the user’s activities

The interview alternates between watching and probing the user for understanding and interpretation (often looking for patterns) – called **withdrawl and return**
Contextual Inquiry Principles

2. Partnership: Collaboration between user and interviewer

Alternate relationship models – don’t use them except as beginning/end of the contextual inquiry, per the interview outline (InterviewingQuickGuide.pdf):

Interviewer/interviewee: user doesn’t talk much or give you relevant details of their work

Expert/novice: user views you as an expert and asks you questions – again, you don’t learn relevant details of their work

Guest/host: user views you as a guest; no relevant detail for you!
Contextual Inquiry Principles

3. Interpretation: good facts are only the starting point; an accurate interpretation of them is necessary for design innovations

From a fact, the observer makes an hypothesis about what it means, or the intent behind it. The hypothesis carries a design implication that becomes a design idea.

It is critical to validate all interpretations – by sharing them with the user, in the context of the event that was the fact.

Better to have them correct your attempt at an interpretation than just asking them ‘why?’ They’ll often make something up when asked directly, whereas they’ll think about it and correct your interpretation.
Contextual Inquiry Principles

3. Interpretation: good facts are only the starting point; an accurate interpretation of them is necessary for design innovations

It is also critical to validate interpretations in a way that allows the user to correct and tune your understanding – if you don’t take this step then you are bringing away understanding that are at least partially made up.

“huh?” = not even close

“umm, ... could be” = no (pauses mean ‘no’)

“yes, but”, or “yes, and” = what follows counts – if ‘yes, but’, then you were wrong and what follows is what is true, if ‘yes, and’ then it confirms your understanding and adds more information to it
Contextual Inquiry Principles

4. Focus: team’s idea of: problem, users affected, activities/tasks that are relevant, situations/locations that are relevant

Tells everyone what they need to find out in interviews, what to think about during interpretations, design

Gives the interviewer a way to keep the conversation on topics that are relevant without taking control from the user; interviewer shares focus with user and pays attention to related activities

• Additionally each interviewer comes in with slightly different interests and notices different things, even within the project focus
  • As a result different interviews add additional detail to build up an entire picture of the user’s work
Contextual Inquiry Principles

4. Focus: team’s idea of: problem, users affected, activities/tasks that are relevant, situations/locations that are relevant

Defined explicitly at the beginning of the project, may be refined as interviews progress.
Contextual Inquiry Principles

4. Focus: team’s idea of: problem, users affected, activities/tasks that are relevant, situations/locations that are relevant

Look for contradictions and surprises during interviews – these are opportunities to expand your thinking and understanding, and can lead to innovation

- Nobody does anything for no reason – your job is to understand the reason

Look for you nodding understanding – don’t assume you know what they mean!

- Instead test your understanding by stating your interpretation and validating it with the user

Look for terminology/explanations you don’t understand – ASK what they mean
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