Ethnography | Analyzing Gathered Data: Contextual Design Work Modeling

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Overview
- Where we left off
- Modeling the data
- Running an interpretation session
- Using the models

Where We Left Off
- Contextual Inquiry provides a mechanism to collect factual, concrete data about work
- After interviewing several users, we now have a large quantity of “raw data”:
  - Transcribed
  - Lines numbered
  - Supporting digital photographs
  - Artifacts – copies of key forms, papers or spreadsheets
- Our ultimate goal is to use this data as an impetus for design – to create a user-centered design

Modeling The Data: Overview
A model is a small object, usually built to scale, that represents in detail another, often larger object
Models give us:
- A shared understanding of the user-data
- A shared language for the design team
- An easily understandable deliverable for communication outside the design team
- Most importantly, models give us a visual representation of the user data

Modeling The Data: Types of Models
We build five types of models, to integrate, summarize and refer back to the data we’ve collected:

- **Flow**
  - How work is divided among roles and coordinated, without regard for time
- **Sequence**
  - The order of work tasks over time
- **Cultural**
  - The influencers which define expectations, desires, values and the overall approach people take to their work
- **Artifact**
  - The tangible forms people create and use to help them get their work accomplished
- **Physical**
  - The physical environment in which work is accomplished

Modeling The Data: Flow Model
Flow
- How work is divided among roles and coordinated, without regard for time
Modeling The Data: Flow Model

- **Flow**
  - How work is divided among roles and coordinated, without regard for time
  - **Individuals** who do the work, shown as circles
  - **Groups** (sets of people), shown as circles
  - **Responsibilities** of the individual or the group, shown as a list in a circle
  - **Flow** of communication, shown as arrows and lines between individuals or groups
  - **Communication topics**, shown as labels on the flow lines
  - **Artifacts**, shown as small boxes on a flow
  - **Places**, shown as large boxes
  - **Breakdowns in communication or coordination**, shown as a red lightning bolt and annotated as necessary.

Modeling The Data: Sequence Model

- **Sequence**
  - The order of work tasks over time
  - Work tasks are ordered and unfold over time. The steps people take aren't random; they happen the way they do for a purpose.
  - **Triggers**, described in sentences or blurbs
  - **Intents**, described in sentences or blurbs
  - **Actions**, described in sentences
  - **Breakdowns in doing the steps**, shown as a red lightning bolt and annotated as necessary.

Modeling The Data: Cultural Model

- **Cultural**
  - The influencers which define expectations, desires, values and the overall approach people take for their work
  - **Influencers**, shown as circles
  - The extent of the influence, illustrated by the size of the circle
  - The **influence**, shown as an arrow pointing from one influence to another, and described in text.
  - **Breakdowns in cultural influence**, shown as a red lightning bolt and annotated as necessary.

Modeling The Data: Artifact Model

- **Artifact**
  - The tangible items people create and use to help them get their work accomplished.
Modeling The Data: Artifact Model

The tangible items people create and use to help them get their work accomplished.

People create, use and modify things in the course of doing work. These things become artifacts, which each tell their own stories.

- A visual representation of the object, either drawn, photographed, or scanned
- Presentation of the object, including relevant physical characteristics
- Information presented by the object, such as the contents of a form
- The structure, or grouping, of the parts of the object
- Annotations showing informal usage of the object, such as highlighting, post-it, etc
- A description of the object and its use, in sentences
- Breakdowns in using the artifact, shown as a red lightning bolt and annotated as necessary.

Modeling The Data: Physical Model

The physical environment in which work is accomplished.

Work occurs in a physical environment that either supports and enabled the work or gets in the way.

- Places that work occurs, shown in plan view and annotated
- Physical structures that define the space, shown as geometric shapes
- Movement throughout the space, shown as arrows and lines and annotated
- Hardware, software, and tools that are present, shown visually as appropriate and annotated
- Artifacts, shown visually as appropriate and annotated
- Breakdowns in the physical space, shown as a red lightning bolt and annotated as necessary.

Running an Interpretation Session: Roles

The models are created during an Interpretation Session, which helps us assign meaning to the data.

- Interviewer
  - Describes what happened
  - Answers questions
  - Draws the Physical Model
- Modelers
  - One each for Work, Sequence, Artifact & Cultural
- Recorder
  - Takes note of any design ideas, breakdowns and key points
- Participants
- Moderator

Running an Interpretation Session: Steps

1. Hand out the transcript; make sure everyone has a copy with line numbers labeled
2. As a group, discuss the interview in general terms to make sure everyone is at the same starting point
3. Assign roles; in a small group, each person may need to perform multiple roles
4. Set up large sheets of paper on the walls, one for each model
5. Step through the interview transcript, and begin to create the models. For each line in the transcript, make additions to each model as relevant.
6. Record observations, insights, influences, questions, design ideas, and breakdowns
7. Summarize important insights on a separate piece of paper

Modeling The Data: All Models

- Always label all data on the models (citations) with line numbers from the transcript or time on the tape; allowing you to go back to the raw data
- Anything unlabeled is a hypothesis
- Legibility is very, very, very important!
Running an Interpretation Session: Try It

Interpretation Sessions take a long time, but should be fun and insightful.

Let’s do one.

Using The Models

• Now that you have models that clearly show all the data, the next step will be to use them. Your models should show you main areas to focus on for redesign efforts:

  • Breakdowns
  • Tedious task flows
  • Extraneous steps
  • Inefficiencies

• Summarize your findings in one or two pages of text, and refer back to line numbers and specific models.

Summary

• Where we left off
• Modeling the data: 5 models [flow, cultural, sequence, artifact, physical]
• Running an interpretation session
• Using the models