



Field Research in Commercial Product Development

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Tec-Ed, Inc.

June 25, 2003

Definition of Field Research

- Observing people in their everyday situations (homes, workplaces, schools) to learn their normal or natural behavior.

Why Do Field Research?

Develop an in-depth understanding of users by:

- Observing users performing their real activities in their own environments.
- Interviewing users about their goals and tasks while surrounded by their own artifacts
- Interviewing users in the context of their normal behavior.

Field research reveals hidden problems.

Structure of Presentation

- Why do field research
- Types of field research with case studies
- Guidelines for doing field research

Field Research: Underutilized, Yet Important

- Field research traditionally done by larger organizations over long periods.
- Budget, schedule, and logistics combine to defeat efforts to justify support field studies.
- In the case of “either or,” usability testing usually takes precedence over field research

Pitfalls of Relying Only Upon Lab Tests

- Often assume a fairly homogenous audience.
- Do not observe users in their context of work or home.
- Focus on ease of learning and the “out of box” experience - miss the “continued use” issues.

Field Research Is Different From Usability Focus Groups

- Focus groups - away from the user's personal space.
- Field research - users see artifact reminders and mention behaviors they have internalized.

Conducting Field Research

- Must actually be “in the field” to do it and must research users’ behavior
- “Contact” with users versus “research”; “site visit” versus “field research”
 - In research, we observe people’s behavior while exerting care not to influence that behavior.
 - Salespeople and trainers have contact with users; go on site visits to educate, train, or convince people

Types of Field Research

- Contextual inquiry
 - Definition, case study, audience Q&A
- Ethnographic interview
 - Definition, case study, audience Q&A

Definition of Contextual Inquiry

- Qualitative data-gathering and data-analysis methodology adapted from the fields of psychology, anthropology, and sociology.
- Task based: We observe and talk with people in their workplaces and homes as they do normal activities.

Key Characteristics of Contextual Inquiry

- Users become partners in the inquiry.
- They show us how they get their jobs done or perform tasks at home.
- Ongoing dialog enhances data collection.
- Protocol = set of general concerns to guide observation.
- Result: ongoing, not summary, experience; concrete data, not abstract information.

Dilemmas with Classic Contextual Inquiry In Commercial Settings

- Requires hours of time with each user--up to a full day each
- Companies balk at paying for such abundant data
- Companies also cannot spare employees for such long periods

Condensed Contextual Inquiry

- Identifies a more constrained set of concerns to investigate than the classic version
- Allows researchers to focus on a few critical issues during sessions with users
- Similar to idea of iterative usability testing of just a few issues each cycle

Condensed Contextual Inquiry Retains Strengths of Classic

- Explore people's use of products within the restrictions of their actual work.
- See when and how companion software and artifacts are used to complement the product.
- Clarify details about tasks while they occur, to avoid misunderstandings about what users did and why.

Condensed Contextual Inquiry Methodology

- Work with product development and marketing to identify important user characteristics, tasks, and issues.
- Inquiry team = two people (one facilitator/observer, one recorder/observer).
- People's home offices and work cubicles often not large enough for more observers.
- Product developers can keep working - and must trust inquiry team

Condensed Contextual Inquiry

Methodology *(cont.)*

- Limited--as opposed to comprehensive--nature of work under observation
- Appropriate for examining flow of tasks in an established routine--as opposed to designing a complex system from the ground up
- Identifies workarounds and artifacts that represent opportunities for introducing new features and functions within that routine

Condensed Contextual Inquiry

Methodology *(cont.)*

- Inquiry team must communicate effectively to product developers
- Explain results via anecdotal stories
- Product developers ask questions of the team and experience the interviews vicariously
- Videotaping not usually an option for security and privacy reasons

Case Study of Condensed Contextual Inquiry: Search Study

- What kinds of information do home users look for on the Web?
- How do they go about looking for it?
- What is people's pattern of behavior for exploring search results items?
- What are people's criteria for evaluating search results for relevancy?
- What, if any, steps do people take to refine a search?

Participants

- Field study of 18 home computer users
- Two geographical areas visited
- Screened for diversity in age, employment, & education, as well as gender balance
- Low/medium search skill only
- Balance of search engine preferences

Tasks



- One-hour sessions
- Searches were “lookups” - use of search box not mandatory
- Searches were user-defined
- Number of lookups averaged 2 per session
- Total of 36 lookups observed
- Total of 93 search iterations observed

Data Tabulation: Search Classifications

- Goal category (known item, exploratory, existence, comprehensive)
- Scope of lookup (whole Web, specific site)
- Searching vs. browsing and in what order and combination
- Search style: linear vs. berrypicking

Other Quantitative Data Collected

- Search terms, how changed from one iteration to the next
- Number of iterations
- Number of minutes per lookup
- Switching search engines
- Success or failure (participant's opinion, opinion of observers)

Qualitative Data Collected

- Participant perception of the importance of succeeding at search goal
- Participant opinion of search experience
- Participant's preference for better search experiences

Data Collected: Photos (Sample Home Workspace)



Data Recording and Analysis

Goal	Goal Category	Look-up Activity	Scope	Style	Summary	Succeed?	Duration (min.)	Importance
Website for crockpot recipes; something that contains vegetables and no meat	Exploratory	Browse	Site: justcrockpotrecipes.com	Berry-picking	Goes to URL she has in torn-out news article, uses links to find recipes, doesn't see the link she had originally articulated as her goal (really her husband's goal), explores other links for newly formed goal (beef recipes). Copies results she wants to keep into Wordpad.	Yes	6	Important—dinner

Data Recording and Analysis *(cont.)*

Goal	Goal Category	Lookup Activity	Scope	Style	Summary	Succeed ?	Duration (min.)	Importance
Contact information at Henry Ford museum	Known item	Search	Whole Web	Linear	Lack of spaces in search string prevented participant from achieving any useful results.	No	9	Very important

Goal	String1	String2	String3	String4
Contact information at Henry Ford museum	henryfordmuseumandgreenfieldvillage, henryfordmuseumandgreenfieldvillage	henryfordmuseum [on bonzai]	Providenet [on bonzai]	henryfordmuseum [on Provide Net]

We Learned About...

- Lookup durations, including average & median for all lookups and by goal (known item, etc.)
- When people searched vs. browsed
- When berrypicking was more likely to occur
- How people used search results
- Effect of spelling errors

Findings - Satisfaction

- What participants attributed their success to
- Effect of low-speed equipment on user satisfaction
- Satisfaction level of berrypickers vs. linear searchers

Could Lab Test Have Yielded the Same Data?

- Lookup durations: Artifacts (bookmarked favorites and scraps of paper) affected how long a lookup took
- Searching vs. browsing behavior: Influenced by starting point, which bookmarked favorites and scraps of paper determined
- Berrypicking - Comfort of being on own “turf” may have encouraged this tendency

Effect of User's Own Equipment

- Users with slow equipment did not know what they were missing...
- Gave up sooner than users with faster connections/processors or newer browsers
 - Different from hearing complaints in the lab about slow-loading web pages
- Laptops and their screen real estate are a reality for physically impaired who work from bed

Disabled Home User's Context



Contextual Inquiry: Audience Participation

- What were you trying to learn?
- Why did you choose contextual inquiry for the study?
- Whom did you observe?
- Where did you go to do the study?
- What reflections about the contextual method can you share?

Ethnographic Interview

A structured interview about use conducted by a usability practitioner, with a clearly defined set of questions to ask all users in the study.

Classical Ethnographic Interview

- Builds a deep understanding of the target users' situations and motives.
- Requires a great deal of time building sufficient understanding to learn what to research.
- Condensed ethnographic research methods have evolved [Wood, 1996].

Condensed Ethnographic Interview

- Researches only a limited scope of user's life.
- Structure meets budget and schedule constraints.
- Due to its structured nature, ethnographic interview results are more straightforward to present.

When To Use Ethnographic Interview

- When research domain encompasses more than performing tasks.
- When impractical to observe tasks.

Ethnographic Interview

Case History

- Purpose: Learn how web technology can support information needs of vehicle owners
- Visited 19 homes of vehicle owners throughout the U.S.
- Observed how they kept their vehicle records
- Photographed and analyzed artifacts

Ethnographic Interview Case History *(cont.)*

- Included 6 car owners, 7 truck owners, and 6 SUV owners
- Owned a mix of new, used, lease, and off-lease vehicles
- Lived in Northern California, Southeastern Michigan, and Western New York
- Spent approximately 1 hour with interview team in their homes

Artifacts (1 of 4)



Artifacts (2 of 4)



Artifacts (3 of 4)



Artifacts (4 of 4)



What Did We Learn?

- Different stages of ownership described for cars, trucks, and SUVs
- Reasons for keeping and not keeping vehicle records
- Why people would and wouldn't use an owners' website
- Valued benefits of an ownership program

Ethnographic Interview: Audience Participation

- What were you trying to learn?
- Why did you choose ethnographic interview for this study?
- Whom did you observe?
- Where did you go to do the study?
- What reflections about the ethnographic interview method can you share?

General Guidelines for Field Research

- Identify user populations to interview and create a recruiting script
- Decide what topics to cover and, if appropriate, what tasks to observe
- Recruit users
- Create an interview protocol
- Pilot-test the interview materials

General Guidelines for Field Research cont'd

- Conduct the interviews
 - Allow extra time for social niceties
- Record the session
- Analyze the data
- Report the findings

Field Research Tips and Tricks

- Brace Yourself For Strangeness
 - Home is where the weird is
 - Giant screeching birds
 - Naked children
 - Axe murderers
- Keep both hands free with neck wearables

Field Research Tips and Tricks

- Cell phones are indispensable
- Keep snacks in the car
- Male/female balance is good
- GPS(?)

Q & A



Questions, answers, fun, etc.

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