

Contextual inquiry

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Contextual inquiry (CI) is a user-centered design (UCD) ethnographic research method, part of the Contextual Design methodology. A contextual inquiry interview is usually structured as an approximately two-hour, one-on-one interaction in which the researcher watches the user do their normal activities and discusses what they see with the user.

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Description

Contextual inquiry defines four principles to guide the interaction:

- **Context**—Interviews are conducted in the user's actual workplace. The researcher watches users do their own work tasks and discusses any artifacts they generate or use with them. In addition, the researcher gathers detailed re-tellings of specific past events when they are relevant to the project focus.
- **Partnership**—User and researcher collaborate to understand the user's work. The interview alternates between observing the user as they work and discussing what the user did and why.
- **Interpretation**—The researcher shares their interpretations and insights with the user during the interview. The user may expand or correct the researcher's understanding.
- **Focus**—The researcher steers the interaction towards topics which are relevant to the team's scope.

If specific tasks are important, the user may be asked to perform those tasks.

A contextual interview generally has three phases, which may not be formally separated in the interview itself:

- **The introduction**—The researcher introduces him or herself and shares their design focus. They may request permission to record and start recording. They promise confidentiality to the user.

They solicit a high-level overview of the user's work. They agree with the user on the specific tasks the user will work on during the interview.

- The body of the interview—The researcher observes the work and discusses what they see. They take notes, usually handwritten of everything that happens.
- The wrap-up—The researcher summarizes what they learned from the interview, offering the user a chance to give final corrections and clarifications.

Before a contextual inquiry, user visits must be set up. The users selected must be doing work of interest currently, must be able to have the researcher come into their workplace (wherever it is), and should represent a wide range of different types of users. A contextual inquiry may gather data from as few as 4 users (for a single, small task) to 30 or more.

Following a contextual inquiry field interview, the method defines interpretation sessions as a way to analyze the data. In an interpretation session, 3-8 team members gather to hear the researcher re-tell the story of the interview in order. As the interview is re-told, the team add individual insights and facts as notes. They also may capture representations of the user's activities as work models (defined in the Contextual design methodology). The notes may be organized using an affinity diagram. Many teams use the contextual data to generate in-depth personas.

Contextual inquiries may be conducted to understand the needs of a market and to scope the opportunities. They may be conducted to understand the work of specific roles or tasks, to learn the responsibilities and structure of the role. Or they may be narrowly focused on specific tasks, to learn the details necessary to support that task.

Advantages

Contextual inquiry offers the following advantages over other customer research methods:

- The open-ended nature of the interaction makes it possible to reveal tacit knowledge, knowledge about their own work process that users themselves are not consciously aware of. Tacit knowledge has traditionally been very hard for researchers to uncover.
- The information produced by contextual inquiry is highly reliable. Surveys and questionnaires assume the questions they include are important. Traditional usability tests assume the tasks the user is asked to perform are relevant. Contextual inquiries focus on the work users need to accomplish, done their way—so it is always relevant to the user. And because it's their own work, the users are more committed to it than they would be to a sample task.
- The information produced by contextual inquiry is highly detailed. Marketing methods such as surveys produce high-level information but not the detailed work practice data needed to design products. It is very difficult to get this level of detail any other way.
- Contextual inquiry is a very flexible technique. Contextual inquiries have been conducted in homes, offices, operating theaters, automobiles, factory floors, construction sites, maintenance tunnels, and chip fabrication labs, among many other places.

Limitations

Contextual inquiry has the following limitations:

- As a qualitative research technique, the results from a contextual inquiry may be inadequate for conducting statistical inference. If 50% of users studied raised a specific issue, it cannot be concluded that 50% of the population experiences that issue. Follow-up surveys can provide quantitative sizing information where needed.
- Contextual inquiry is resource-intensive. It requires travel to the informant's site, a few hours with

each user, and then a few more hours to interpret the results of the interview.

History of the method

Contextual inquiry was first referenced as a “phenomenological research method” in a paper by Whiteside, Bennet, and Holtzblatt in 1988,^[1] which lays out much of the justification for using qualitative research methods in design. It was first fully described as a method in its own right by Wixon, Holtzblatt, and Knox in 1990,^[2] where comparisons with other research methods are offered. It is most fully described by Holtzblatt and Beyer in 1995.^[3]

Contextual Inquiry was extended to the full Contextual Design methodology by Beyer and Holtzblatt between 1988 and 1992. Contextual Design was briefly described by them for Communications of the ACM in 1995,^[3] and was fully described in Contextual Design in 1997.^[4]

Work models as a way of capturing representations of user work during interpretation sessions were first briefly described by Beyer and Holtzblatt in 1993^[5] and then more fully in 1995.^[6]

See also

- Questionnaire
- Interview
- Affinity diagram
- Scenario
- Persona
- Ethnography
- Contextual design

References

1. J. Whiteside, J. Bennett, and K. Holtzblatt, “Usability Engineering: Our Experience and Evolution,” Handbook of Human Computer Interaction, M. Helander (Ed.). New York: North Holland, 1988.
2. D. Wixon, K. Holtzblatt, and S. Knox, “Contextual Design: An Emergent View of System Design,” in Proceedings of CHI ‘90: Conference of Human Factors in Computing Systems, 1990. Seattle, WA.
3. Beyer, H. and Holtzblatt, K. “Apprenticing with the Customer,” Communications of the ACM, May 1995.
4. Beyer, H. and Holtzblatt, K., Contextual Design: Defining Customer-Centered Systems, Morgan Kaufmann Publishers Inc., San Francisco (1997).
5. K. Holtzblatt and H. Beyer, “Making Customer-Centered Design Work for Teams,” Communications of the ACM, October 1993.
6. K. Holtzblatt and H. Beyer, “Representing work for the Purpose of Design,” in Representations of Work, HICSS Monograph (Hawaii International Conference on System Sciences), January 1994. Lucy Suchman, Editor.

Additional Reading

- S. Jones, *Learning DECwrite in the Workplace; Using Contextual Inquiry to Articulate Learning*. Internal Digital Report: DEC-TR 677, December 1989.

An early use of CI to analyze the use of a software product.

- L. Cohen, *Quality Function Deployment: How to Make QFD Work for You*. Addison-Wesley Publishing Company, Reading, Massachusetts, 1995.

Discusses the use of CI in Quality Function Deployment

- D. Wixon and J. Ramey (Eds.), *Field Methods Case Book for Product Design*. John Wiley & Sons, Inc., NY, NY, 1996.

This book describes the experience of several different practitioners using field methods. Several people who have used Contextual Inquiry and Contextual Design have written chapters describing their experiences. This is a good resource for anyone wanting to adopt customer-centered methods in their own organization. It includes a chapter by Holtzblatt and Beyer describing the whole Contextual Design process.

- Nardi, B. *Context and Consciousness : Activity Theory and Human-Computer Interaction*. Massachusetts Institute of Technology Press, Cambridge, MA, USA ©1995

Activity theory provides the theoretic motivation for ethnographic research.

External links

- Contextual inquiry at UsabilityNet (<http://www.usabilitynet.org/tools/contextualinquiry.htm>)
- Contextual Interviews at Usability.gov (<http://www.usability.gov/methods/contextual.html>)
- Getting Started with Contextual Techniques (http://www.sigchi.org/chi96/proceedings/sigs/Beyer/bh_txt.htm)

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