12.2 CONTEXTUAL INQUIRY

Contextual Inquiry (CI) is the name given to the first stage of Contextual Design. It is essentially a combination of a focused interview and observation. As Holtzblatt and Beyer observe,

> The core premise of CI is very simple: go where the customer works, observe the customer as he or she works, and talk to the customer about the work. Do that, and you can't help but gain a better understanding of your customer.

CI is made up from a number of techniques that are designed to help the analyst understand what it is your client needs. (In these chapters we use the term 'analyst' to refer to someone finding out about existing work, and 'designer' when we reach the later stages. Of course, analyst and designer may be the same person in practice.) CI brings together a number of techniques, including interviewing (called the Contextual Interview), artefact collection and observation under one unifying theme or philosophy.

There are four guiding principles of contextual inquiry: context, partnership, interpretation and focus.

Context

Here the advice is to go to the customer's workplace and observe how work is actually carried out. This allows the analyst to experience the rich everyday detail of work. It is best to focus on concrete data and tasks rather than generalized abstraction, for example to steer customers away from statements like 'usually …' or 'in our group, we …'. Occasionally these observations may need to be supplemented by retrospective explanations ('When I saw you checking the bill against the bar receipts, why was that exactly?') from the customer.

Partnership

One of the core premises of CD – and of its Scandinavian ancestors – is that analyst and customer are expert in their different fields. The analyst should be looking for patterns and structure in the work, while the customer contributes her knowledge of how the work really gets done. As redesign ideas occur, they can also be discussed. Thus customers can genuinely influence the analyst's interpretations of the work and design ideas based upon it. The relationship is characterized by Beyer and Holtzblatt as the 'master–apprentice model'. The customer 'teaches' the analyst by doing the work and talking about it while working. This helps avoid some problems of tacit (implicit, unspoken) knowledge. The periods of observation should be interspersed with discussion. This is well illustrated with a couple of quotations from Beyer and Holtzblatt themselves:

> 'One customer said he would not use a manual's index to find the solution to a problem: "It's never in the index." He could not say what led him to this conclusion … All his bad experiences were rolled up into one simple abstraction: it's not there. But when we watched him looking things up, we could see that he was using terms from his work domain, but the index listed parts of the system. We learned what the problem was and what we could do to fix it.'

> 'A customer was unable to describe how she made her monthly report. When asked to create it, she pulled out her last report and started filling in the parts. The old report was her reminder of how to create the next one.'
>
> Beyer and Holtzblatt (1998, p. 44)

Interpretation

It is not enough simply to observe and document: the analyst must interpret workplace data so that it is properly understood. For example, in our hotel case study, the receptionist can be seen crossing off guests' names on a paper list as they arrive as well as updating data on-screen. Why should this be happening, and what does this mean for a redesigned system? Possible reasons might be:

- The on-line guest data system is unreliable.
- Not all reservations are on the system.
- The receptionist isn't confident she is using the system properly.
- It is easier for other staff to consult a paper copy.

The analyst should reflect her interpretations back to the customer and listen to the response. Be prepared to be wrong.

Focus

Each site visit and interview needs a focus, though concentrating on one part of the work helps to see detail but at the expense of other aspects. If there is a team of analysts, sharing data in the group can help to avoid the problem. While the interview is happening, one sign of an over-narrow focus might be unexpected actions by the customer. In our experience, the opposite difficulty commonly occurs when customers divert conversation into areas of their job that are not pertinent to the problem in hand. In this case, a few tactful prompts usually help to refocus. If not, treat the information as useful general background to organizational life and culture.

Practicalities of the Contextual Interview

As for any work at customer sites, it is essential to have a notebook and ideally a tape-recorder or video-camera. The first 15 minutes or so should take care of the usual introductions, the obtaining of permissions, explanations of the process and the focus for the interview.

Then the Contextual Interview itself follows. Its length will depend on the nature of the job and the time available, but around 2–3 hours' mixed conversation and observation is not unusual. In many jobs, your interviewee may move around the workplace – be prepared to follow them. You should try to observe as many different types of everyday tasks as possible, but some will be more difficult to see 'live' than others. Here are some suggestions for capturing this sort of data:

- Intermittent, unscheduled and brief tasks, e.g. recovering from a system crash:
  - Have customers note the event, save any related artefacts, then discuss in a follow-up interview.
- Uninterruptible work, e.g. a training session or client meeting:
  - Videotape or take detailed notes and review later with the customer.

- Very lengthy collaborative projects, e.g. major engineering design projects:
  - Interview different customers at different stages in the process.
  - Collect project documents and other artefacts and walk through the process with customers.
- Focused, fine-grained tasks, such as interacting with a complex piece of software:
  - Videotape and review later with customer. A word of warning: while video recording may seem an attractive solution to capturing data, it should be treated with caution. The appeal of simply pointing a camera at your customer (or whoever) and reviewing the data later must be balanced against the fact that an hour's videotape will take significantly longer to analyse offline than an hour – perhaps twice or three times as long.

Finally, use the last 15 minutes of the interview to review what you have learned, remembering to ask your interviewee what you might have missed.

Whom to interview?

Beyer and Holtzblatt's rule of thumb is that for a product designed to support work in different organizations, two or three people should be interviewed for each work role in each of four to six organizations. The organizations should ideally represent the diversity to be found in the market sector, in terms of technological sophistication, size, physical organization and so forth. In practice, we find that we often have to be flexible about whom we see. Customer organizations do not always supply the 'right' people, and contextual inquiry sessions often suggest other people who should be involved.

?

Challenge 12.2

Think about a medium-sized, neighbourhood restaurant. Imagine you are planning a Contextual Inquiry for a system that will allow waiting staff to take orders on a hand-held device which can then be downloaded to a PC and displayed in the kitchen. The system also generates bills and keeps track of which dishes have been sold. The restaurant personnel comprise:

- *The owner, who runs the business and devises menus in consultation with the chef*
- *The chef, who runs the kitchen, devises menus and new dishes, orders supplies*
- *Two under-chefs, who cook the food and deliver the dishes to waiting staff*
- *A part-time baker, who comes in the early morning, leaving before lunch preparation starts*
- *Three waiting staff, who take orders from customers to the kitchen and serve food*
- *A wine waiter*
- *Two washers-up*
- *A part-time cleaner*
- *A part-time book-keeper, who prepares the accounts.*

List which people you would interview and what aspects of their jobs you would focus upon.