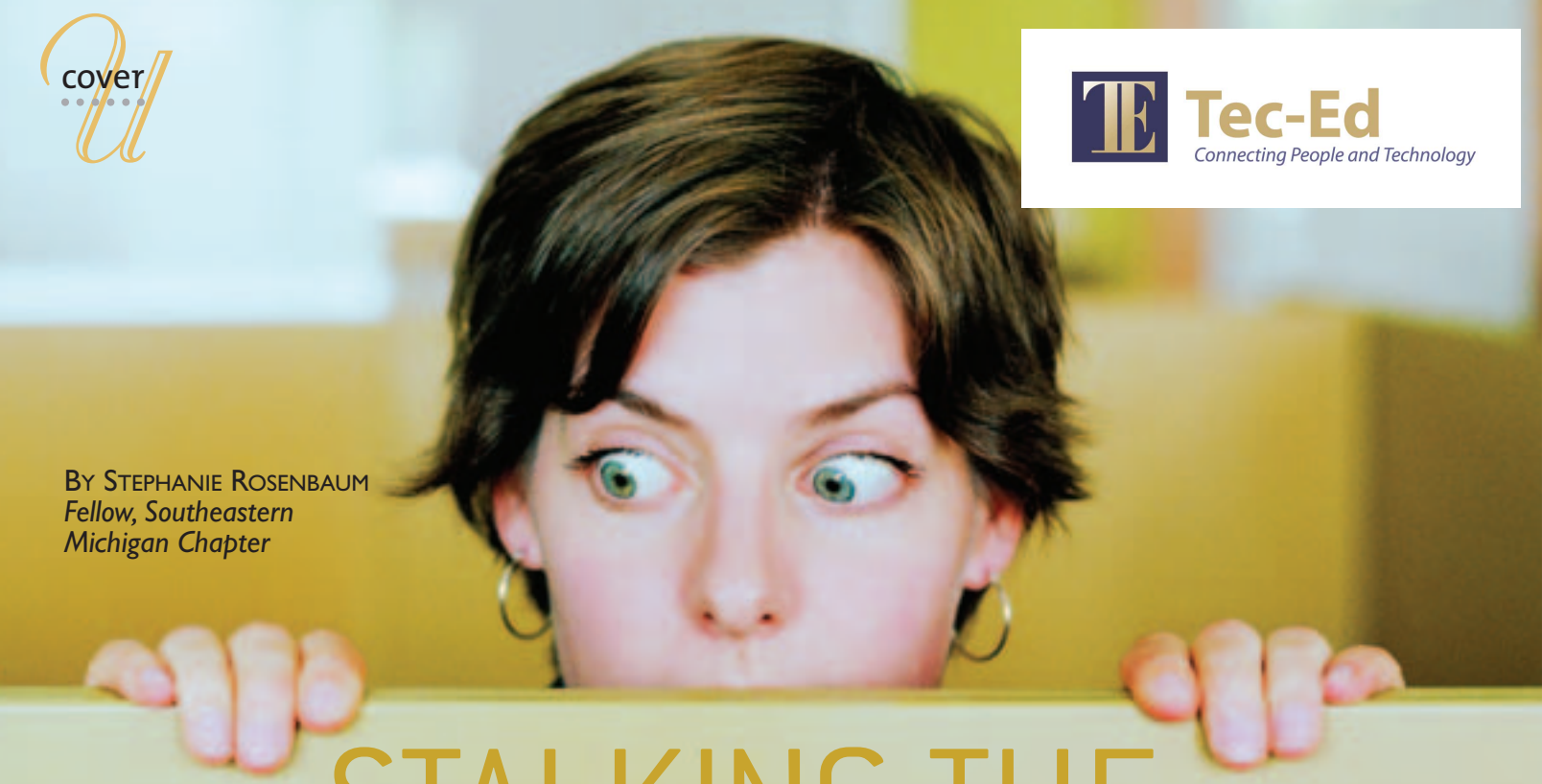

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STALKING THE USER:

PRACTICAL FIELD RESEARCH

Understanding our target audiences has always been a key element in effective communication. The usability profession has its roots in communication as well as human factors, because many of the methods for understanding people's tasks, needs, and goals have been used in technical communication for many years. For example, one of these methods is the "think aloud" protocol in usability testing, in which people say out loud whatever comes to their minds as they use a product.

Usability practitioners are now finding that we can adapt the field research methods of anthropology to learn even more about our users and design more usable products, Web sites, and documentation. Field usability research involves observing people in their own environments—workplaces, homes, and schools—to learn their natural behavior.

Why Field Research Is Valuable

Field research will never supplant laboratory usability testing, for a good reason—usability testing works. If you want to identify usability problems, measure or compare user performance, or convince the development team that a usability problem must be addressed, then conduct a usability test.

But we also need to learn things about audience behavior that can't be observed in a usability lab for the following reasons:

- Distractions may be very different at home from at work: the phone rings, urgent e-mails arrive, children demand attention, and pets run through the room. We need to learn how environment-related distractions affect user interactions with products and Web sites.
- Especially when using complex business products, people can't behave normally without their own (usually proprietary) data—and even if users were permitted to bring their data to your lab, it's rarely practical for them to do so.
- Use of Web sites varies dramatically with "equipment speed" (a combination of processor speed and Internet connection speed). Equipment speed in people's homes or offices may differ from that in your usability lab.
- Many products can be observed realistically only in their normal context of use, such as a clinical information system in a hospital or a control system for manufacturing automation.
- Users often consult documents and other sources that may be available only in their work or home environments. Even if they could bring their

resources to your usability lab, users don't know in advance what they'll want to consult while using your product or Web site.

Barriers to Field Research

Usability testing—especially iterative usability testing—is easy to justify and highly productive. The literature on "discount usability" (quick, simple, and inexpensive methods of usability testing) describes how well usability testing achieves immediate commercial goals. In contrast, field research traditionally has consisted of lengthy in-depth studies, mostly conducted by large organizations that can invest in research for long-term product improvements.

In practical field research, we go to our users' settings and observe them in their "natural habitat." We take notes of our observations and interviews, and we analyze the data for trends. To gain a rich, holistic, detailed picture of what happens in users' environments, we take pictures and record people's comments. And, of course, we do it all on a corporate product-development timeline!

Thus, the primary barriers to conducting field usability research are cost, time, recruiting, and skill:

- Because of the hours required to schedule field sessions and travel to them, the cost per participant is higher than for usability testing in your lab. Even if your organization doesn't track this time as part of the project cost (and it should), travel expenses can add up.
- The timeline for a field research project will usually be longer than that for usability testing, because it's difficult to schedule more than two visits a day.
- People and organizations may resist visits from outsiders, especially when you want to make video (or audio) recordings and take photographs. Whoever on your team recruits participants must be persuasive and reassuring with candidates.
- Facilitating field research sessions and analyzing the collected data require more training and experience than lab testing, because we have only a list of issues, rather than a detailed script to follow; and the qualitative data can be hard to organize.

Building field research skills is a challenge. Think of the most demanding parts of usability testing: providing interventions or "hints" without giving away the answer, asking probing yet nondirective questions, maintaining a neutral demeanor no matter how wrong (or funny) the user behavior. We need the same skills in field research, with the added complexity that we don't know what tasks the user is going to perform!

The best way to become a successful field researcher is to apprentice with one. Although the suggested readings at the end of this article will help, you should try to tag along as observer or note-taker on several field sessions before taking on the role of facilitator.

Practical Field Methods

As usability practitioners in industry, my colleagues and I wanted to apply the rich qualitative data from field research despite the schedule and budget constraints of product development. We therefore developed modifications and guidelines for using field research methods successfully in industry.

Condensed Contextual Inquiry

Adapted from the fields of anthropology, psychology, and sociology, *contextual inquiry* consists of observing and talking with people in their workplaces and homes while they perform normal activities. Key characteristics of contextual inquiry include the following:

- We explore people's use of products within the restrictions of their actual work.
- Users become partners in the inquiry with the usability team; an ongoing dialogue enhances data collection.
- The inquiry is based on a set of general concerns to guide observation, not on a list of specific questions to ask.
- We clarify details about tasks while they occur, to avoid misunderstandings about users' goals and actions.

However, classic contextual inquiry requires hours of time with each user—up to a full day each. Most practitioners can't spend the time to collect and analyze so much data, and customer companies won't let employees participate in day-long sessions.

Because my colleagues and I wanted to use contextual inquiry even when time is short, we developed what we call the "condensed contextual inquiry." This method identifies a more constrained set of concerns, enabling us to focus on a few key issues during shorter sessions with users. The inquiry team is limited to two usability specialists, and sessions rarely exceed two hours.

For example, an Internet service provider (ISP) wanted to study people looking for information on the Internet from their home computers. In eighteen home visits, we watched people perform from one to three "information lookup" tasks of their own devising, and we observed how and when they used searching and browsing. Not only did people follow their own areas of interest, but some spent the whole session on one task, while others performed two or three tasks.

Ethnographic Interviewing

In classic ethnographic research, observers become part of a culture so that they can explore and modify their assumptions about it. In product research, *ethnographic interviewing* helps us understand how the context of use affects the way people approach their jobs or other tasks.

While contextual inquiry is primarily observation of use, interspersed with dialogue and questions, ethnographic interviewing requires researchers to ask questions about use. We conduct ethnographic interviews to study issues that are broader than individual activities, where time constraints cannot accommodate contextual inquiries, or when observing relevant user behavior is impractical because it occurs rarely or unpredictably (or when the distractions of ongoing dialogue could be risky, as in surgery).

Holding interviews in the users' environment makes the discussions more concrete. The researchers and participants explore notebooks, yellow stickies, forms, and other artifacts that complement product use. Researchers also photograph these items.

Karen Moskowitz/Stone

For example, my colleagues and I used ethnographic interviews to study physicians in hospitals and system administrators managing telephone conferencing servers. In the consumer arena, we conducted ethnographic interviews for the interactive agency of a Big Three automaker, which wanted to learn how people keep vehicle records (maintenance, insurance, etc.). The agency planned to redesign the automaker's Web site for vehicle owners, using our research data on what records people keep in their cars, garages, and file cabinets at home.

Field Usability Testing

Field usability testing adapts the well-known methodology of laboratory testing by conducting the sessions in the participants' own environments, on their own computers (or other equipment). Especially in home-based research, participants' choices of computer, software, and ISP noticeably affect their experience and behavior with products and services.

In field usability testing, we design tasks that address the participants' own goals, where task objects include the users' files, bookmarks, or databases. These adaptations give us qualitative data about the target audience that we can't collect in the lab. Although field usability testing will help you learn what problems users encounter, owing to the variations in computer equipment and user tasks, it is less suitable for measurements such as comparing which version of a form is faster to complete.

In one field usability test, a publisher of engineering journals wanted to learn how effectively people could use a new biomedical engineering library product to locate reference material. We held usability test sessions at a pharmaceutical firm, a commercial biochemical research laboratory, and a university conducting biomedical research. Because participants were surrounded by physical reminders of what they wanted to search for, the test situation was more realistic. Also, these institutions would not have agreed to participate in the usability testing if their staffs had to leave the workplace.

When to Use Field Methods

Ideally, every user research program should include some field studies and some laboratory testing. But how do you decide which method to use, and when to use it?

When you need to collect quantitative data about a product's usability, find out how it compares to the competition.

In general, when you need to collect quantitative data about a product's usability, find out how it compares to the competition, or make a go/no-go decision about a particular feature, you should conduct usability testing. When you want to understand your customers better—for example, learn the different ways they're using your product, or what features would be useful to them in future product versions—it's time to suggest a field study.

Use the following guidelines for choosing among the field research methods described in this article:

- If people can achieve a real-life goal with your product or Web site in a one- or two-hour period, even if you can't observe everything they do with the product (or everything the product can do), plan a *contextual inquiry*.
- If the user behavior occurs over an extended period of time, with many interruptions, or if the product usage can't safely be interrupted, *ethnographic interviews* may be the best research method.
- If you would normally conduct usability testing, but the participants are reluctant to leave their offices or homes, consider a *field usability test*. We have successfully used this method with busy scientists, research librarians, and physicians—and it has potential for disabled users or parents at home with small children.

In every field research project we've performed, regardless of the specific method, we collected surprising, enlightening data that we could never have learned in our usability laboratory. Field research is demanding work, but the insights it yields strengthen our understanding of people and how they use technology.

Suggested Readings

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