

Techniques for Researching and Designing Global Products in an Unstable World: A Case Study

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ABSTRACT

The value of ethnographic field work for guiding and inspiring product design is indisputable, especially for development teams working on products for other cultures. However, global instability can make it difficult or impossible for researchers and product designers to travel to foreign countries to conduct field work, leaving them ill equipped to guide culturally-appropriate product design. In this paper, we present a series of ethnographically-inspired techniques that allow researchers and development teams to gather a range of culturally relevant information for product design without visiting the countries for which they are designing. These techniques are not intended to substitute for on-the-ground ethnographic fieldwork, rather, they are intended to serve as a surrogate until further in-situ research can be conducted.

Author Keywords

International design, product development, research methods, People's Republic of China, cultural awareness.

ACM Classification Keywords

H5.0 Information Interfaces and Presentation (e.g., HCI): General.

INTRODUCTION

War, disease, terrorism, and political instability can render primary sites for global expansion and user research inhospitable or downright dangerous for foreign researchers. Indeed, unrest can prevent even the most well meaning developers from visiting their users and collecting in situ feedback to inform the design process. Here we draw on recent experiences developing technology products for

the People's Republic of China (China) against the backdrop of SARS as a way of exploring alternative methods for gaining cultural knowledge and applying it to design. We are particularly interested in the way ethnographic research, theory and methods can inspire a new generation of design research and researchers to develop culturally sensitive or culturally appropriate products, services and technologies.

The People's Republic of China is rapidly becoming the biggest worldwide market for PCs, laptops, and other consumer electronics [8]. Given the current rate at which PCs are already shipping, and the potential for growth in a nation of more than 1.3 billion, it is no surprise that most Western consumer products companies are looking at China to drive global sales growth.

Yet, developing successful products for China is not as simple as repackaging Western designs in Chinese boxes and shipping them overseas. China has a long history, 3000 years of cultural development, and a diverse geography that has its own set of cultural practices, consumer habits and specialized needs[2, 4]. There are countless examples of how careless or haphazard user research resulted in products that were unusable, or worse, embarrassing when they were released in countries other than those in which they were designed [1, 6].

Many Western corporations are beginning to design products that specifically account for the needs of Chinese consumers, and they are funding research programs to identify those users' needs. Recently, Tom Chubb, vice president of marketing for Michelin Automotive Industry Division said "There is now a major shift underway to bring forward designs specifically for China [7]." However, top-down support and project funding are not always sufficient to ensure that researchers and designers have access to, or the tools for the understanding of, their users in foreign locales.

Ideally, months of ethnographic fieldwork and other non-traditional qualitative research methods yield data that can be subject to weeks of analysis and critical reflection. Through this process, culturally appropriate user needs can inform the design process from beginning to end. However,

when travel to foreign countries is restricted or even banned, these research methods, all of which involve sending a researcher(s) into the field, are unavailable.

Our development team faced such a challenge late in 2002 we were tasked with developing a consumer product for People's Republic of China, our biggest emerging market and one of our key growth areas. Just as user research on the project began to unfold, Sudden Acute Respiratory Syndrome (SARS) broke out and travel to China and surrounding areas was banned. In an international company, competing in a global economy, discontinuing our development program or even delaying its progress until travel was restored was simply not an option.

Given the travel ban, innovative solutions had to be developed in lieu of the standard research techniques including direct immersion with end users, their culture, and environments. Yet collecting reliable and accurate data to drive product design was a necessity. With a schedule of twenty months and no time to waste, creative research techniques needed to be employed. Thus, we developed the following set of methods to gather critical user data and feedback early in our development cycle.

The remainder of this paper discusses innovative ethnographically-inspired techniques that allow researchers who are unable to visit "the field" to approximate the type of data which might have been collected in. Clearly, it goes without saying that visiting your users and interacting with them in their environments is the best way to gain a rich understanding of their cultures. Many notable usability professionals have documented the importance of field work, ethnography, and situated usability tests with users in the countries and cultures of interest [3, 4, 6], and we are certainly not arguing against the merit of that type of work and the value it adds to product and interface design. Quite the contrary, we enthusiastically encourage developers to visit their users whenever possible in order understand the intricacies of their cultures. However, in those times that visitation is just not an option; the following suggestions can help developers create culturally appropriate technologies by leveraging locally-available resources, people, and artifacts.

MEDIATED IMMERSION

In order to design culturally appropriate consumer products, it is critical that the development team have an intimate understanding of daily life in the targeted countries. To provide such a glimpse into the real lives of our users, we began our research significant background research, using available secondary sources. We started with non-fiction materials that documented People's Republic of China's history and cultural development, picture books of traditional Chinese artifacts, and travel books in order to gain a broad based understanding of the country's publicly presented culture and values. The *Modern China* journals and *Lonely Planet* series proved to be especially helpful in that regard. Next, we investigated Chinese news and current

events by importing magazines and reading Chinese web sites (china.org was a favorite). Although we understood the shortcomings of these resources, including out-of-date information and the potential bias, particularly those sources that were produced by various government authorities, they nonetheless cued us in to key cultural values that can affect product design. For example, it was in that early literature review that we first became aware of the importance of health and wellness in Chinese culture.

In order to add depth and realism to our understanding of Chinese culture, we followed up our literature review with a review of video documentaries on the region. (The PBS *China in the Red* and *Precious Children* series' were accessible and informative). In order to maximize the effect of "being there" the team watched the videos from within our Culture Capsule (described below), a room free of local (American) influences and distractions. Thus the videos allowed us to imagine we were viewing users as if we were observing them in their own cultural settings, simulating participant observation. For example, by watching *Precious Children*, we were able to see and understand the unique interactions between Chinese children and their teachers in a way that would not have been possible through printed words alone. Simply watching people interact with objects, getting quick glimpses into homes or offices and seeing their emotions allowed us to draw meaningful conclusions about daily life and product design while being thousands of miles away.

To conclude our mediated immersion, we contacted an in-house ethnographic research group and mined them for information. Although the researchers had not conducted field work with an eye for product design, that had spend an extensive amount of time immersed in pre-SARS People's Republic of China. They offered us their field notebooks, photographs, and presentations, and participated in many group discussions that provided a wealth of both undiscovered and reaffirming data. Though different than data we would have collected ourselves, their materials provided our first raw look at Chinese culture. Unlike the videos that were edited to solicit specific conclusions, these resources provided a broader look at daily life in China. Since we began our secondary immersion by building a basic understanding of China, its history, and its values, we were equipped to interpret the ethnographic resources in ways that meaningfully informed our project. Although we would have preferred to collect the materials ourselves, the data from our colleagues offered cultural insights allowing us to drive our designs forward while travel was banned.

CULTURE CAPSULE

Once we were confident that we had a reasonably rich understanding of Chinese culture, we endeavored to create a physical environment representative of our users' environments. In much the same way that some museum installations allow glimpses into other lives and times, our "Culture Capsule" allowed the design team to encounter,

first hand, one pared-down version of the physicality of Chinese life.

Referencing photographs from China, we collected important cultural objects including books, jewelry boxes, political and religious paraphernalia, and technology, and arranged them in a conference room to mimic a Chinese home. Since bringing Chinese furniture to the US on short notice was impractical, we compared photos of Asian home furnishings to locally available desks and chairs, selecting items to recreate a Chinese "home office" in the Culture Capsule room. Finally, we arranged all available research materials on the walls and around the room to create a completely immersive environment.

The newly-constructed environment served two purposes. First, it provided our product designers culturally appropriate physical inspiration as they began fleshing out product concept ideas. The room served as a kind of liminal space, one that encouraged them to distance themselves from their own desks for a few hours while they work. The artifacts and spatial arrangements served as prompts and mnemonics for an altered mind-set. Second, the space served as a showcase for the work on the project to date. It represented such a departure from other workspaces at the company that visitors, managers, and colleagues could not help but recognize the strong connection between the research and subsequent concepts. In fact, employees from other company sites would travel to the facility just to have project meetings in the room. Although the Culture Capsule's authenticity would have benefited from an increased effort to collect and arrange authentic Chinese artifacts, particularly furniture and other larger items that were inaccessible at the time, it was nonetheless an invaluable inspirational tool in the early stages of product development.

LOCALIZED FIELD WORK

With a set of concepts created and no apparent end to SARS in sight, we began to look for ways to have real users evaluate the concepts. In addition to collecting concept feedback, we also wanted to create a dialog with Chinese consumers that offered greater insights about our target users and their culture. Our hope was to uncover information that could not come from books and videos, but only from understanding the opinions and emotions of real users.

Our local search for such users led us to a Chinese Association at a nearby university. The Chinese Association was made up of foreign exchange students from China working towards undergraduate and graduate degrees. These students were very new to the US, making them ideal candidates to communicate Chinese trends and cultural values. Several students from the Chinese Association agreed to meet with us at a local coffee shop. Bringing the students to a relaxed off-campus atmosphere allowed them to unwind and be more frank in their discussions. As a result, the conversation yielded many

interesting cultural design insights that otherwise would have been unavailable to the team. "Beauty and looks are very important in a cell phone because you show it off to friends. US cell phones are ugly. No girl would like a US phone. She would think you are an old person," said one male student.

Although these students did not reflect the average Chinese consumers, their insights came much closer than our secondary resources to the types of information that we would have gathered in the field in China, and were extremely valuable.

LOCALIZED CONCEPT EXPLORATION

Leveraging the new relationships built with the Chinese Association, we arranged an informal design exploration with the students. Our hope was to generate greater insight about our target users and spark idea generation stimulated by several early product concepts. The session was organized to challenge the students' thinking. We were interested to learn why concepts were interesting or not interesting to them, rather than whether any of the ideas were marketable.

Methods

Twelve students were selected for the concept exploration, ten male and two female students attended. As with our previous discussion, these students did not represent average Chinese consumers. Rather they represented upper-class, well educated, comparatively young Chinese with the following population skews:

- Although many of the students were new to the US, some had lived in the States for two or three years and they were somewhat more removed from daily Chinese influences.
- Most of the students were pursuing technology-based degrees (electrical, computer engineering, etc.) and were very technologically aware. A large group of the students have built or worked on their PCs.
- The students were accustomed to using high-speed internet connections, while most Chinese residents who use the Internet have low-speed (dial-up) connections only.

From the twelve students attending, groups of two to four were assembled and walked through image storyboards of product concepts one by one, by a member of the team. The four small group discussions lasted 60 minutes each, and were conducted in parallel. The approach allowed for more one-on-one style conversations and the team was able to have a total of four hours worth of discussion in 60 minutes time. At the conclusion of the small group discussions, the students gathered for a large group follow-up discussion.

In order to ensure we elicited feedback about how the product concepts might be received in China (and not only by Chinese students in America) a variety of measures were

taken to help the students visualize life at home. Not only were concept images visually situated in photographs of Chinese homes and environments, but the storyboards themselves were surrounded by photos of China. In addition, students were primed with questions about home and life in China prior to the product concept discussion. This encouraged them to approach the discussion from while thinking about home. Finally, moderators intentionally probed around usages situated in China to keep discussions on track.

Results

The students identified the following culturally relevant themes for technological design:

- *More for less.* More functionality of less money. All the students wanted to get a lot more out of each concept for the same amount of money.
- *Sharing.* The students were happy to have technologies share with each other as well as people sharing with technology and people sharing with people. They were willing to share funds for collective gain (even among this elite population) as well as optimizing personal use.
- *Health.* This group was not worried but made comments about people being concerned with health risks from Personal Computers. Specific concerns included cathode ray tube (CRT) monitors damaging vision, radiation for the computer itself, and spreading germs through keyboards.
- *Price and competition.* All students mentioned the possibility of being undercut by reverse engineering unless there was some way to protect their investments. (Cost was a concern, again, even in this relatively elite group.)

Based on these new learnings the product concepts were reevaluated and adjusted to accommodate the insights from the students.

RESEARCH VALIDATION IN PEOPLE'S REPUBLIC OF CHINA

As the local research wrapped up, SARS began to subside and the ban on travel to China was lifted. We traveled to China to conduct user research including participant observation, in-home visits, and situated design exploration to validate previous research.

During the ten day trip a wealth of new information was learned and much of our previous information validated. While our secondary US-based research identified appropriate themes, our Chinese-based follow up studies deepened our understanding of the aspects of Chinese culture that affect product design. For example, one theme that was validated from our previous research was health related worries about PCs. During our field work, we

learned that Chinese parents were especially worried about radiation damage from traditional cathode ray tube (CRT) computer monitors to their children's eyes.

CONCLUSION

Since we were able to conduct field research in People's Republic of China, we saw that many of the conclusions from our ethnographically-inspired techniques were valid. Although our local research did not provide the depth gained from the international studies, it was nonetheless a valuable tool to inspire and shape product development when we were unable to travel abroad.

Corporate schedules carry on despite global unrest. By beginning the research process locally we were able to incorporate culturally appropriate design insights without stalling the development process. Developing and incorporating a keen understand of the culture for which you are designing is a critical part of any international product development project. While travel to target locales is always the best option for gaining such an understanding, locally-based research, immersion, and exploration techniques deliver valuable and valid results.

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