

THE POWER OF OBSERVATION



**The science of
ethnography provides
a better parking
experience.**

By David Cummins and Ellen Isaacs

Breakthroughs are often born in the lab or boardroom, but they live or die in the real world where people determine their value through real use. Xerox has employed ethnography for many years to gain a better understanding of human behavior in naturalistic settings, and now we are applying it to parking and parking enforcement. Our field research plays a critical role in rolling out new services and solutions, as it reveals unforeseen human variables that do not surface in the lab, in computer simulations, or in surveys and focus groups.

Palo Alto Research Center (PARC), which is wholly owned by Xerox, works with commercial clients to help them focus their product concept to reach the proper audience, sometimes after the original product concept missed the mark. We are currently working with public sector clients that include those managing parking for a city. PARC's ethnography team directly observes people in the market to understand what they're doing and to identify hidden unmet needs. When you watch people carefully, you notice that they often work around problems without even realizing it; these invisible obstacles represent potential opportunities for novel technology solutions.

Some business thinkers are skeptical of this hands-on approach because it takes time and there's no guarantee we'll find the key insight that will transform their thinking or product concept. Although Xerox has, over many years, proven that this approach is well worth the investment, PARC has developed a rapid eth-

nography method that generates more focused findings in a compressed timeframe—generally, one to three months. In the last few years, PARC has applied this rapid ethnography method to projects in healthcare, transportation, and mobile communication, all of which generated specific, long-lasting benefits.

Some of the most fruitful ethnography projects have involved parking. For whatever reason, parking seems to evoke some of the more interesting behaviors in the human repertoire. The following examples showcase how rapid ethnography research is helping uncover innovative solutions to simplify and improve parking enforcement as well as the way people find and pay for parking.

Parking Enforcement Observation

The Parking Solutions unit of Xerox asked the PARC team to explore using historical data on parking violations to predict where they would



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likely occur and create a system that would provide parking enforcement officers with turn-by-turn directions to these potential violations. This was the technology concept proposed, but as you'll see, the field study suggested several alternative areas for innovation that would transcend the initial concept and solve other observed problems.

The PARC team shadowed three parking enforcement officers (PEOs) in two cities and videotaped them as they worked. One city had already installed a system with sensors in parking spaces that could guide officers to real violations. As we systematically reviewed and logged the video footage, we gained a richer understanding of their everyday practices than we could pick up during the original observations. We also noticed some of those inevitable obstacles the officers were working around.

For example, we learned that PEO beats are often small and the officers who are responsible for patrolling those beats become intimately familiar with the streets, so providing turn-by-turn directions to violations has limited utility and is possibly even patronizing. This observation steered Xerox away from spending time and money developing a myopic turn-by-turn system. Instead, our focus shifted toward developing a dispatch and communications tool for enforcement managers, supervisors, and officers (which led to further ethnographic research to understand that domain).

In addition, we noted that the original technology concept was aimed at helping officers notice more meter violations (such as expired meters), but there seemed to be a bigger opportunity in supporting the enforcement of time-limited parking (such as two-hour parking). These zones are more labor-intensive because they require two trips to the same street at different times, yet they yield far fewer tickets. This two-pass effort could be reduced if cars could "know" when they arrive and communicate it to the PEO's device as he or she drives by, enabling enforcement of any street in a single pass. Based on this finding, we are working with engineering researchers in our organization to brainstorm ways to enable one-pass enforcement.

This type of two-tiered outcome is common. We try to address the clients' explicit questions about

their technology concept, but we also look for hidden opportunities that go unnoticed until you observe people doing their work (or play).

LA Express Park

Shifting gears, let's take a look at parking from a commuter's point of view. For most drivers, the cost of parking is a moot point when they are wasting time and gas cruising for a parking space that doesn't exist. We all know this feeling. And if you're a local business, low parking turnover can translate into less foot traffic, directly affecting sales.

Last summer, a PARC-Xerox team observed parking behavior, conducted driver interviews and surveys, and even participated in parking activities ourselves in four downtown Los Angeles districts. This was in support of the LA Express Park project run by the city's Department of Transportation. We spent the bulk of our time standing on streets or in parking garages as we watched drivers using meters, workers making deliveries, and officers issuing tickets. Respondents were encouraged to complete the surveys through incentives such as paid parking and gift certificates to local shops.

More than half (59 percent) of respondents knew the price per hour at their meter. More than half (60 percent) were also aware that parking prices might be different close by. However, very few drivers realized that "close by" sometimes meant as close as across the street. Also, few respondents were aware of existing smartphone parking applications that could help them find and pay for parking. Discussions with these respondents revealed that they were interested in learning how to use these apps to plan for parking and avoid parking tickets.

Xerox researchers developed an algorithm that helps Los Angeles make educated pricing adjustments in real time based on demand, time of day, and other factors. The Los Angeles Department of Transportation is now seeing a higher utilization of parking on each block, reducing traffic congestion and pollution generated by drivers hunting for curbside parking. Drivers are also taking advantage of a parking app that helps them identify open parking spaces as they become available. Once again, our observations provided us with the insights we needed to develop proper solutions and effective public communications.



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Time Versus Value

Time will always be a concern for clients who are under pressure to produce products that will succeed in the market. Yet in these cases the effect of the ethnographic work had long-lasting effects that more than justified the month or so of effort (which was done in parallel with the rest of the team's activities). In both cases, Xerox avoided spending a lot of time and resources developing a solution that was not likely to have success, and focused its efforts in a more productive direction.

PARC is able to produce these results in a short amount of time for a few reasons:

- All the ethnographers who participate in these studies are highly trained and have a lot of experience analyzing observational data to extract findings to inform technology development.
- We take steps to keep the lines of communication open during the project rather than delivering results at the end.
- We increase the effect of the findings by producing video podcasts that show, rather than tell, the client about key user behavior and illustrate how our conclusions are based on systematic analysis of our direct observations. These podcasts tend to get shared beyond the original clients to other stakeholders in the organization who influence decisions.

Still, there's no doubt there are limitations to Xerox's rapid ethnography approach. If you spend relatively short periods of time doing intensive observations and analysis, you simply can't expect to gain a deep understanding of the many facets of a complex activity, you can't be sure your findings are representative of a broader market, and you might base conclusions on a distorted picture of the activity you're observing. We mitigate these concerns, however, by

validating our conclusions with experts and by following up with quantitative methods.

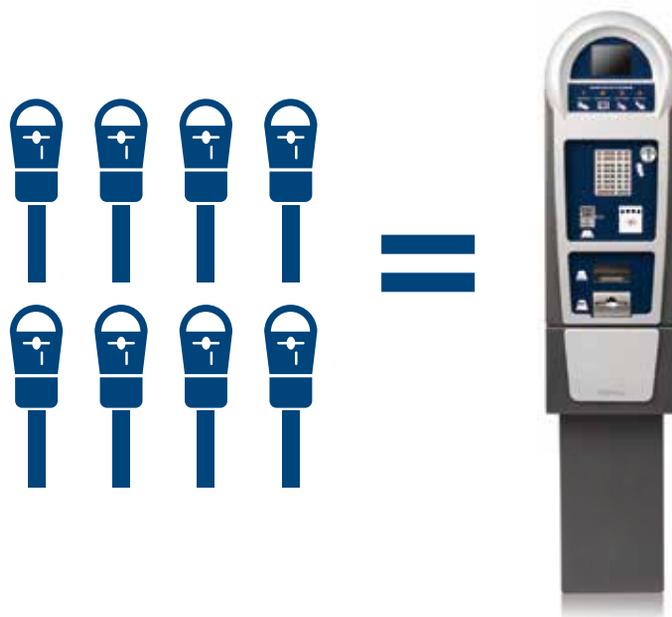
In these cases, Xerox's investment in ethnography had paid off by identifying issues and opportunities that traditional indirect methods would not have picked up. Companies that want to be competitive in industries with rapidly evolving products can't waste time pursuing unproductive strategies, and we believe it pays off to spend a little time up front to save time later. **P**



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