Xerox Corporation: Harnessing communal expertise sharing to enhance services
Ethnography in Action

“The PARC Eureka knowledge system helped our technicians move from a hierarchy of control to a hierarchy of expertise; this was essential for us as we were moving beyond machines and into services. More importantly, the socio-cultural perspective that Xerox has always supported and drawn from PARC ethnographers helped us focus on increasing employee knowledge, and most of all on delighting our customers.”

—Sophie Vandebroek, Chief Technology Officer, Xerox & President of Xerox Innovation Group

OVERVIEW:

**Situation Analysis**
Global document and business process management company Xerox had 25,000 service technicians worldwide to help ensure that the machines it was selling to its customers performed as expected—a scale of about 1 million service calls a month. If Xerox could leverage this experience and knowledge to improve the effectiveness of technician services, it would not only improve revenues and capture a larger share of the service market, but more importantly increase customer satisfaction and loyalty. To help Xerox improve services, PARC had been working on portable, AI-based, electronic expert systems that could aid technicians in diagnosing and isolating machine faults.

**Insight**
Xerox had already decided to move away from principles-based to more directive, decision-tree-based repair approaches. The assumption behind this approach was that technicians would only need to be trained in using the documentation to diagnose repairs. PARC ethnographers saw that the technicians didn’t really need guidance for common faults; they already knew the procedures. The thorniest and most expensive problems for machines in the field were the ones that were new, surprising, and not covered by any documentation.

By observing what technicians actually did in their day-to-day, often tacit practices (as opposed to what they explicitly might have
said), PARC ethnographers realized that technicians, when stuck, would turn to their peers or engineering experts for guidance. Furthermore, they would swap “war stories” about these experiences at meetings with their co-workers. PARC scientists wondered, why not turn the AI model on its head and turn the work community itself into a “living expert system”?

**Process/Methods**
PARC began working on technologies designed to leverage the kind of knowledge-sharing and knowledge-building conversations Xerox service technicians engaged in – the kind that take place around parts depots, coffee machines, and water coolers. Through multiple field-observation, analysis, design, and field-testing iterations, PARC scientists translated their initial insight into the “world’s largest water cooler”: an electronic knowledge-sharing system that codified into a database technicians’ tacit field knowledge, expertise, lessons learned, and tips.

Understanding that this system was “90 percent a social process and 10 percent technology infrastructure,” PARC realized they would have to find the appropriate medium for helping technicians collect, validate, share, access, and evolve over time the shared knowledge – within their natural work practices and social interactions.

By working closely with technicians and key test partners in Europe, Canada, and the U.S., PARC rolled out the electronic knowledge-sharing/expert system in various electronic form factors. PARC and Xerox also tested the system in different organizational settings given the sociocultural factors of technology use and adoption.

**Results**
An organization’s most valuable intellectual capital is not necessarily contained in its official repositories, but in its employees’ undocumented learnings and practical know-how. Add to this an aging and highly migratory workforce, and the problem becomes even more pressing. The challenge for organizations is how to convert this valuable but local knowledge into forms that others in the organization can use and act on.

Xerox rolled out the resulting “Eureka” expert knowledge-sharing framework, which later became the mainline program in the company. The result? In addition to the huge increase in the number of documented solves (and corresponding growth in number of registered expert tips), the system was estimated to have saved Xerox $15M+/year in service costs.

**More Information**
Business Development
engage@parc.com