Public areas within the workplace are settings for day-to-day social activities that people may not associate with work, but which nonetheless have been found to contribute to the well-being of individual workers, and to the overall health of the organization. Paper bulletin boards, located on walls in public lounges, hallways, and foyers, have remained important even as e-mail and the web have become accessible nearly everywhere. These bulletin boards help to build an organizational sense of community, by serving as a valuable social and informal communications channel outside of one's work context. These settings are also locations where workers most frequently chat with colleagues who are organizationally outside their immediate workgroups. These short, unplanned informal meetings have been shown to play an important role in forming collaborations, making social connections, and discovering and exchanging expertise.

The increased attention to public spaces has led architects and workplace designers to re-think the allocation of space in the workplace, from the office-block layouts that maximized private office space in the 1960's (visible in the notorious 'cubicle farms' of today), to those of open, common areas emphasizing shared space. Yet despite this, little information technology has come into common use in these public spaces, and the spaces have changed little compared to the modern office desk.

The OK-net project was conceived in 2002 to study how to design systems that could be integrated with the various types of public spaces in the workplace, and which would complement the activities that took place therein. We wanted a platform that would help build community within our organization, the CSAIL laboratory, by providing information dissemination capabilities for informal communications, as well as facilities for experimenting with other ways to enable greater social awareness and connectedness within the organization. In addition, we had the goal of allowing the kiosks to serve as a perpetually up-to-date guide to the laboratory and the activities within, to allow lab members and visitors alike to find out what was happening at any particular moment.

We adopted an existing platform for building ubiquitous computing architectures called Metaglue, that has been used for building integrated and automated offices and conference rooms. We sought to adapt this to building intelligent kiosks, with the hopes that this infrastructure would allow these kiosks to act
like small Intelligent Environments, spaces being enhanced with ubiquitous computing technologies. With the goal of being deployable by the time the CSAIL laboratory transitioned from its old building into the Stata Center in 2004, we faced a tight timeline to develop a real system from scratch.

The primary challenge we faced when designing OK-net as a software-hardware platform was to identify and build a set of high-level re-usable software components to simplify OK-net application development. Determining which software components to build, in turn, required designs for applications themselves, so that desired capabilities could be identified. We thus designed two initial applications: *k:info*, a ”smart” billboard/screensaver that automatically gathered new articles to display, deprecated obsolete articles, and dynamically scheduled content for display, and *SKINNI*, a GUI for allowing users to browse events and look up lab information. Using these applications as goals, we designed components responsible for authentication, perception, knowledge representation, inference, content collection, mobile device integration, media streaming, and speech. In designing each of the applications, we had to ensure that the application would be sufficiently easy to use to be deployed and used by the general public. This required us to follow a user-centric design process that evaluated the effectiveness of various aspects of our user interface.

In this talk, I will describe a variety of lessons learned from this investigation, and conclude with a discussion of what challenges remain at the conclusion of the first phase of this project. These challenges, we believe, are a reflection of more general open problems in ubiquitous computing.