IVSI: Ubiquitous Exposure

Ethan Eismann
School of Information Management and Systems
UC Berkeley
eeismann@sims.berkeley.edu

Scott Carter
Group for User Interface Research
UC Berkeley
sacarter@eecs.berkeley.edu

ABSTRACT
In this paper, we describe an art installation designed to encourage reflection on the ramifications of ubiquitous capture and access on personal privacy.

Keywords
Art, privacy, ubiquitous computing

INTRODUCTION
"The real issue implied in "Art and Technology" is not to make another scientific toy, but how to humanize the technology and the electronic medium, which is progressing rapidly -- too rapidly."

-Nam June Paik, 1969

For many people, topics around technology are difficult to grasp. We believe that artistic interpretations of technological concepts can help people relate to both the technologies under consideration, and potential impacts the technology may have upon the individual and society. IvsI, an art experience, helps people understand the costs and benefits of privacy through direct engagement of their representation, captured on both physical and digital documents.

IvsI is designed so that its visitors identify, encode, organize, reorganize, interpret, and act upon the information presented through the installation, so that they might develop a deeper understanding of the issues around information capture and trust. These issues are presented through an artistic experience rather than a traditional interactive exhibition format because we are interested in exploring how perceptual and conceptual art can be used to communicate technological concepts and invoke corresponding emotional and rational responses. The aesthetic principle of our design is based, in large part, on each visitor's ethical notion of privacy. Regardless of the visitor's preconceived notions about information capture, trust, and whatever other concept they map to the messages delivered by the installation, each visitor performs a moral assessment of the information presented to them. For this reason, IvsI is especially satisfying and challenging to visitors with pre-conceived notions about privacy and trust.

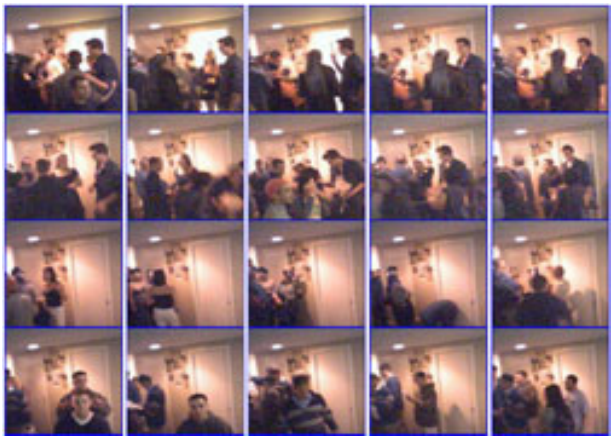

Figure 1. Pictures taken, printed and posted to the web by the iVSi system at an installation.

SYSTEM AND NARRATIVE
As a digital sculpture, IvsI embraces the medium of 0s and 1s, the hardware that supports information processing, and the complexity of the aforementioned privacy concepts. IvsI is comprised of three computers, one webcam, on digital camera, one video mixer, one laser printer, an ever-expanding internet library of digital images, one data-driven non-linear flash animation, one break-beam sensor, two phidgets, two flat panel LCD screens, various kinds of wire, and 267 lines of code. This assemblage of materials is sewn together to support an artistic experience that unfolds over time, in both physical and digital spaces.

When visitors enter IvsI's environment they are first faced with a large monitor that displays an abstract video of a blinking eye. As they draw closer to the eye, an infrared sensor (implemented with Phidgets [1]) senses them and sets in motion a chain of events. A processor receives the event fired from the presence sensor and automatically grabs a picture from a webcam aimed at the visitor's face, uploads it to a web accessible database and prints it locally. In addition, the processor feeds a video stream of the visitor's face taken from a digital video camera to the video mixer, which remixes the video stream into the video of the blinking eye.

IvsI's narrative structure is intertwined with its technical structure. The blinking eye is a metaphor for ubiquitous capture. The video stream of the visitor's face is contained

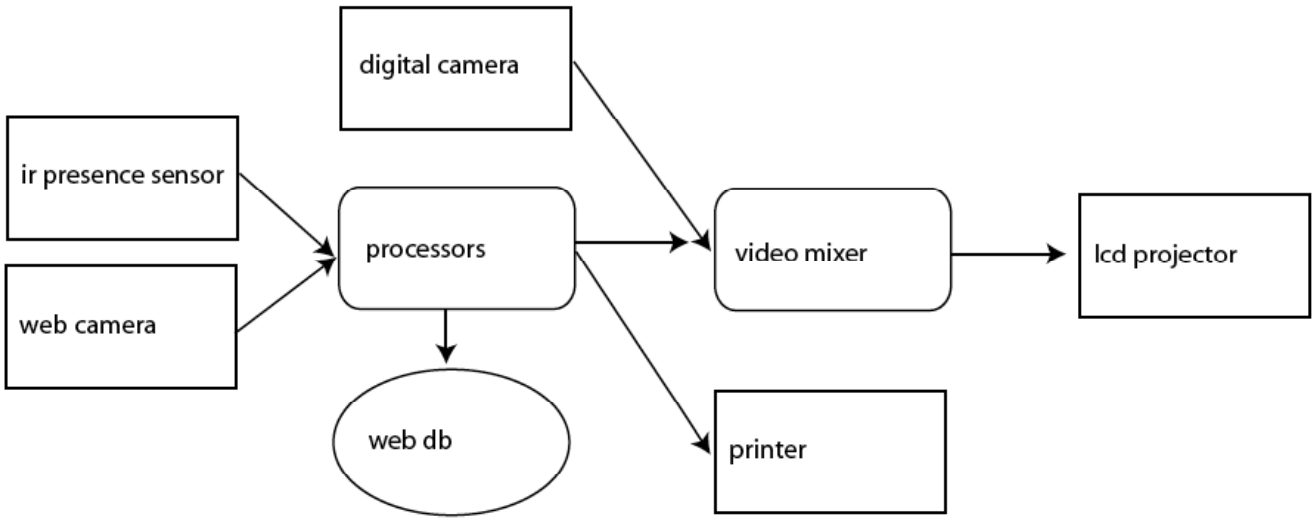

Figure 2. Event model. An IR presence sensor sets off a chain of events that lead to the user's image being broadcast to print, video and the web.

within the boundary of the eye's iris, positioned, visually, as the object of surveillance. The captured digital images that populate the network accessible database are displayed in an online library, which is presented to the visitor from within the installation, adjacent to the monitor displaying the remixed blinking eye. As the visitor switches focus between the video and the library, they discover that when in the context of the installation, their image is periodically captured and distributed online to an infinite audience, in real-time. Within moments, posters of the visitor's image emerge from a printer located within the visitor's periphery, which they are encouraged to take. By embodying the visitors experience in a physical object, a gift, the installation's context extends outside the confines of the installation's space.

DEPLOYMENTS

IvsI has shown at the Berkeley Institute of Design (UC Berkeley) and the Culture Cache Art Gallery (San Francisco). Between showings, in response to visitor feedback and changing social currents, we have adjusted the content and form off the installation. For more information about the project, please visit the IvsI website: http://www.sims.berkeley.edu/~eismann/ivsi/.

REFERENCES

1. Greenberg. S. and Fitchett, C. 2001. Phidgets: Easy development of physical interfaces through physical widgets. *Proceedings of the ACM UIST 2001 Symposium on User Interface Software and Technology*.