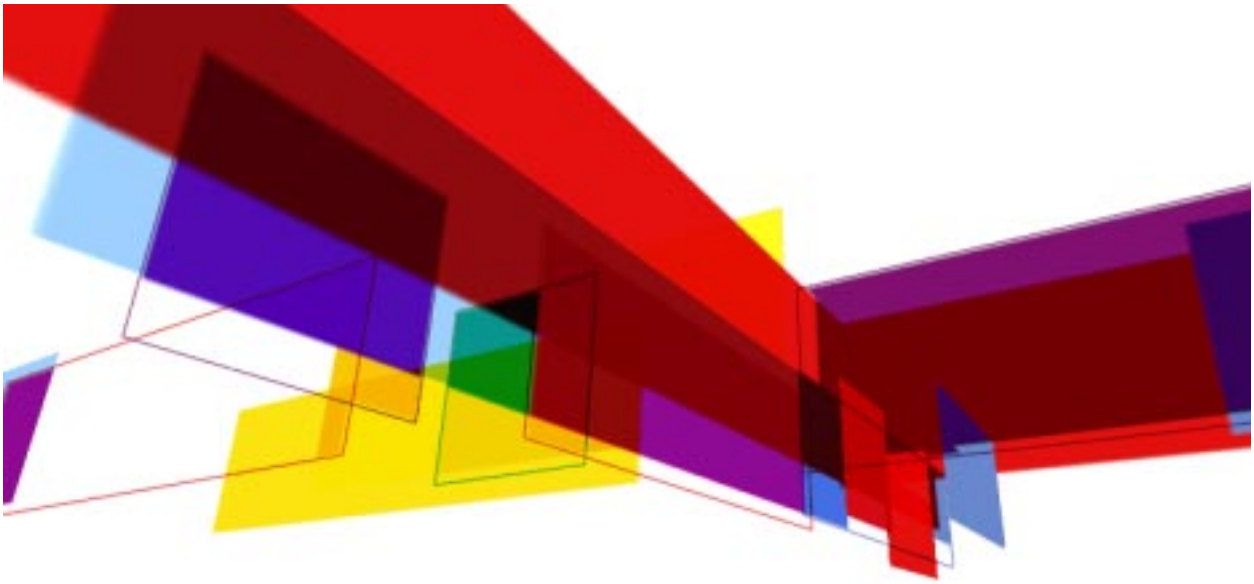

CONSUMER ELECTRONICS AT THE MIT MEDIA LABORATORY

To address new ways of thinking about both consumer products and services, in 2004 the MIT Media Lab launched CELab, an innovative program focused on consumer electronics. This new initiative provides close, hands-on collaboration with industry to explore new ideas, make new kinds of devices, and, most importantly, break open new ways of thinking about both consumer products and services.

Research Themes

CELab research currently focuses on five technological areas:

- innovative materials and design/fabrication methods for them;
- new power technologies, including wireless, parasitic, and self-generated;
- new sensors, actuators, and displays;
- self-managing, incrementally and limitlessly scalable ecosystems of smart devices; and
- cooperative wireless communications, free of fixed infrastructures, from micro- to macro scales.

The overarching theme that runs through all CELab work is the co-evolution of design principles and technological discoveries, resulting in simple, ubiquitous, easy- and delightful-to-use devices that know a great deal about one another, the world, and the people in their proximity.

Benefits to Members

While CELab membership is open to organizations of all sizes, its structure offers a unique opportunity for small and medium-sized enterprises to share in the benefits of a large, innovative, basic research lab, working at the pre-competitive stage of invention. Through visits to the Lab, sponsors have an opportunity to see hundreds of working prototypes that give a glimpse into how people and technology will work together in the future.

Specifically, CELab members are given the opportunity to:

- interact with the Lab's more than 30 research groups;
- attend two annual members-only symposia hosted by CELab;
- make in-depth visits to the Lab;
- license Media Lab intellectual property*; and
- access a "cyber-window" into CELab, which provides rapid access to research results, as well as online dialogue and collaboration with CELab researchers.

*Note that certain Media Lab intellectual property (IP) is not available for licensing to non-sponsors, and non-exclusive IP is only available to non-sponsors two years after it becomes available to sponsors.

A Sampling of CELab Projects

bYOB (Build Your Own Bag) is a flexible, computationally enhanced, modular textile system that will make building with fabric as easy as playing with LEGO blocks. When modules are snapped together to form an object, they become part of a wearable, distributed sensor network and begin to communicate with people, other objects, and their environment. A bag built out of the system senses whether important personal items are missing, illuminates inner contents when it gets dark, and downloads information from the Internet via Bluetooth. All of this is communicated to the user through light, speech, and LCD actuation.

EtherThreads explores location-based services for community messaging. A user is able to leave a message for a specific person (or group of people) related to a specific topic—or thread—at a specific location, to be delivered in a specific time range. Mobile devices (both phones and PDAs) use Bluetooth and GPS to locate and match the user's current location with relevant information. It could, for example, be used to post a negative—or rave—review of a restaurant just visited, to be read right outside the restaurant's door. The system is not a free-for-all graffiti system, but instead works more like e-mail, where messages can be addressed to individuals or mailing lists.

WatchMe is a personal communicator built into a watch to provide family members and close friends with awareness of each others' activities. The user can choose an appropriate modality (synchronous or asynchronous, voice or text) based on the inferred situation of the remote person, helping to reduce interruptions at inconvenient moments, yet still provide constant connectivity. Icons on the watch shows whether the remote person is involved in a conversation (from audio analysis), how many voice and text messages that person has sent, and his or her mode of locomotion (from wireless accelerometers). An analysis of GPS data provides current location, elapsed time since last known location, or predicted destination and expected time of arrival.

(See a listing of CELab featured projects at http://cel.media.mit.edu/projects/index.html).

The MIT Media Lab

Since its establishment in 1985, the Media Lab has helped companies understand how technology works, and how it can make a difference to a sponsor's bottom line. Lab sponsors often use their inside view of the Lab as a jumping-off point for potential business opportunities; numerous Lab projects have evolved into products. Former students have created more than 60 start-ups since the Lab began, while many other graduates have gone on to become innovators at sponsor companies.

Above all, the Media Lab helps to bring innovative ideas into the public forum. It shows what works and what doesn't; what's hot and what's not; what's going on in industry and what you can expect.

Contact Us

For more information on the MIT Media Lab's CELab, please send e-mail to cel@media.mit.edu,
or visit CELab's Website at http://cel.media.mit.edu/.

January 2005