Oxygen: Pervasive Human-centered Computing

by

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Abstract

For over forty years, computation has centered about machines, not people. We have catered to expensive computers, pampering them in air-conditioned rooms or carrying them around with us. They have required us to interact with them on their terms, speaking their languages and manipulating their keyboards or mice. They have not been aware of our needs, location or preferences. Purporting to serve us, they have actually forced us to serve them.

In Project Oxygen, we strive for a world in which computation will be human-centered. It will be freely available everywhere, like batteries and power sockets, or oxygen in the air we breathe. It will enter the human world, handling our goals and needs and helping us to do more while doing less. We will not need to carry our own devices around with us. Instead, configurable generic devices, either handheld or embedded in the environment, will bring computation to us, whenever we need it and wherever we might be. As we interact with these "anonymous" devices, they will adopt our information personalities. They will respect our desires for privacy and security. We won't have to type, click, or learn new computer jargon. Instead, we'll communicate naturally, using speech and gestures that describe our intent and leave it to the computer to carry out our will.

In this talk the speaker will cover a range of pervasive computing technologies that are developed as part of project Oxygen – a US$40 million project sponsored by the Defense Advanced Research Projects Agency (DARPA) of the US Department of Defense and an industrial Alliance of world-class companies like Delta, Acer, Hewlett Packard, Compaq, NTT, Nokia, and Philips.