

## Kill your PC

by Niall McKay on 22 February 2001, 00:00

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Michael Dertouzos does not pull punches when he talks about the future of desktop computing -- and for good reason. As the director of the Massachusetts Institute of Technology's Laboratory for Computer Science, he spends considerable time every day thinking and working on future desktop projects. His assessment is clear: the current computing infrastructure is inadequate. He says this stems from the fact that the average person gets about 20 emails a day and spends three minutes dealing with each one. More messages means less time to deal with them -- especially as email traffic increases tenfold over the next few years. (You do the math.)

It boils down to what he calls human servitude. "We have been taken hostage by \$500 PCs that force us to feed them data, nurse them, and obey their stupid commands," Mr. Dertouzos says.

He's issued a call to arms asking people to kill the PC and move to a better computing architecture. To him, that's one that operates as easily as a car, collects and organizes data on the fly, and doesn't crash and trash six months of hard work.

With that mantra, Mr. Dertouzos and his colleagues at MIT embarked on Project Oxygen. Over the next four years, MIT, Philips Electronics (NYSE : PHG), Nokia (NYSE : NOK), Hewlett-Packard (NYSE : HWP), Acer America, Delta Electronics, and NTT (NYSE: NTT) will throw a total of \$50 million and 250 research scientists at developing a new platform that uses a constellation of devices that hear, see, and respond to our every need.

The idea is to augment the keyboard and mouse with speech-comprehension and vision technology, so that inputting data is as easy as saying, "Computer, capture this meeting and send it to my boss." In essence, the goal is to make computing invisible to the end user. Mr. Dertouzos calls it "humancentric" computing. Although hardly a new idea, this is the first time these components -- now finished and available -- have been bundled into one complete system.

### THE ANTI-PC

The Xerox Palo Alto Research Center has been working on the concept of ubiquitous computing since the '80s. Last year, IBM (NYSE : IBM) spent \$180 million on its pervasive computing program code-named Planet Blue (see [Lab Rat](#), October 19). Other research institutions are running similar programs. Carnegie Mellon University's Project Aura, the University of Washington's Portolano project, and the University of California at Berkeley's Endeavor Expedition have each received funding from the Defense Department's Defense Advanced Research Projects Agency to develop pervasive, ubiquitous, invisible, or humancentric computing architectures.

For Project Oxygen, MIT is working on three prototypes: a handheld device called the Handy 21, a workstation-like computer called the Enviro 21, and a networking architecture called Network 21. The Handy 21 will be similar to a cell phone and will include a microphone and speaker, a view screen, a small video camera, and antennae for broadband and narrowband communications. However, 90 percent of the device's circuitry will be digital, allowing the user to reprogram it to carry out different functions by downloading software from the network. The Enviro 21 will provide users with a powerful computing environment in the home and office and will be designed to interoperate with the Handy 21 and with actuators and sensors dispersed in its environment. Network 21 will bind these devices together.

In some respects, the tech industry is well on its way to implementing Mr. Dertouzos's vision: initiatives like Jini from [Sun Microsystems](#) (Nasdaq : SUNW) aim to provide a platform for this constellation of smart devices, and chip designers like Parthus (Nasdaq : PRTH) and ARM (Nasdaq : ARMHY) are building cell phone and handheld device chip sets with Java Virtual Machine interpreters to permit software downloads on the fly.

Still, Mr. Dertouzos's mantra, which he hammers home in his new book, *The Unfinished Revolution* (HarperBusiness, 2001), is that "information technology should help people more by doing less."

This all sounds great until you fail to get a signal on your cell phone. "When computers vanish from sight ... we'll know that the IT revolution is finished," Mr. Dertouzos says. "But let's face it, we've got a long way to go."