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**Lab Rat: There's no computer like no computer**

on 18 October 2000, 22:00

by [Niall McKay](#)

In ten years' time, if you're aware that you're using a computer then **IBM** research will have failed.

"Computing will be at its most effective when you are completely unaware that you're using computers," says Dan Russell, director of the user sciences and experience group at IBM's Almaden Research Center.

Mr. Russell is heading up IBM's **Planet Blue**, a \$180 million, 45-person research project to develop the concept of pervasive computing. As one of the world's largest purveyors of computer equipment and software, the company has a stake in finding the future direction of the technology industry. However, it's not alone in believing that pervasive computing is the answer. Massachusetts Institute of Technology, for example, has a similar project called **Oxygen** (more about that in a future Lab Rat), Carnegie Mellon University's **Human Computer Interaction Institute** is also working on the concept, and **Xerox PARC** has had various ubiquitous computing projects in the works since the early 1980s.

Nonetheless, IBM has both the money and the clout to make its vision a reality, and Mr. Russell's task is to figure out how to make it happen.

But Planet Blue is not about developing new technology, according to Mr. Russell. Rather it's about finding new ways to integrate the existing technology using the wireless infrastructure. "We are following several basic principals: first, that computing devices will be location-aware; second, that they will be context-aware; and third, they will be user-aware."

**GETTING TO KNOW YOU**

In short, the devices will have to know where they are, what situation they are in, and who is using them.

"Rather than accessing your data from a PC," says Mr. Russell. "You should be access your data from a constellation of devices."

The constellation includes conventional devices such as cell phones and personal digital assistants but also unconventional devices such as digital jewelry, in-car computers, and small desktop or wall displays that might normally show a photograph of one's family.

Currently, the company is developing a whiteboard (or large-display technology) that will recognize a user as they approach it either by radio frequency or face recognition technology, and it will then go to their personal server, retrieve their data and match that to their location.

For example, a whiteboard located at IBM could recognize me, lookup the company calendar, figure out that I am meeting Dan Russell, and direct me to his office. Of course, just getting the whiteboard to display anything at the moment is a challenge. "It's the tiny systems-integration issue that can take months to sort out," explains Mr. Russell.

Furthermore, at my meeting, an icon will come up on the whiteboard displaying my desktop. I will then be able to record my interview with Mr. Russell on his equipment; collate the bookmarks, PowerPoint slides, and charts that he gives me; and drag and drop them into my folder.

"The system will take care of the security authentication, tunnel through the firewalls, and deposit the information in the user's data center," says Mr. Russell.

Additionally, if I drift off during my interview (which, of course, didn't happen) Mr. Russell has a solution. Using a concept that is internally referred to as "Tivo Everywhere" the company intends to provide a technology that will cache the last 30 to 60 minutes of voice, video, and computer data.

That way, it will make it possible to go back and retrieve an important moment and store it for later use.

**DIGITAL JEWELRY**

Another technology that IBM is working on is digital jewelry. With the help of Stanford design major Denise Chan, the company has designed earrings that act as headphones, broaches that act as radio frequency tags, and watches that display calendaring information.

"We believe that the computing devices of the future won't look like computing devices," says Mr. Russell. "In fact, we will probably embed computing power into

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