



From wired to wireless

by Richard Bray

The 25 years since cellular technology was first tested in Chicago have seen more than half a billion people around the world subscribe to mobile telephone services. That number is expected to double within a year.

Advanced, two-way radio technologies have the potential to change how governments communicate at every level. For the individual employee, the short-range Bluetooth technology standard promises freedom from wires and cables. Within about 10 metres, computers, printers, keyboards and every other peripheral can connect and communicate instantly, so offices that have convulsed to accommodate bulky wiring are about to morph again.

Across what vendors call the “enterprise,” wireless networking allows entire workgroups to be reconfigured within minutes. Interactive video, telephone service and high-speed Internet access can be up and running almost immediately, whether the location is one floor of a building, an entire campus or the scene of a major accident or disaster. With the appropriate passwords and permissions, visiting colleagues and consultants can attach their laptops or PDA (Personal Digital Assistant) to the network and being working right away.

Away from the office, cell phones and wireless email devices like the Motorola V101 and the BlackBerry make it easy to stay in touch, but quickly expanding wireless networks in public areas – libraries, airports, universities, office buildings and even convenience stores – are beginning to offer wireless Internet access using 802.11 technology, enabling more meaningful communication.

In practical terms, how is wireless changing the workplace? A recent Air Canada project, e-Toolbox, allows airline mechanics to look up manuals and diagrams from laptops in their vehicles, right beside the aircraft they are working on. “Pushing” information to where it is needed may seem like a simple improvement, but Air Canada is looking for millions of dollars in savings, along with better productivity and customer service.

But some big challenges – like security – stand between the “hard wiring” of today and tomorrow’s unfettered mobility. In many office settings, for example, Wireless Local Area Networks (WLANs) are an ideal solution for delivering data to users’ desktop computers but, unfortunately, they are insecure.

Even wireless networks that meet stringent security requirements broadcast signals that can be recorded off premises and analyzed. Given enough time and computing power, even the toughest codes can be cracked. In such situations, even a minor breach of security can lead to a huge leak of confidential information. In early October, the US Defense Department banned the use of wireless technology by the military in many secure areas. Until the Army, Navy and Air Force come up with a strategy for wireless security, cellular telephones and wireless PDAs cannot be attached to networks or computers containing classified information.

Mobile wireless technologies also raise important privacy issues. Cellular technologies work because the network always “knows” the

location of the telephone or mobile email device. A department or agency could, for example, quickly spot employees who were exceeding the speed limit in government cars or, staying too long in doughnut shops along the way. The Internet has already demonstrated a disconcerting ability to find, monitor, record and use all manner of personal information, so it is unlikely that employees will use mobile communications devices if they suspect that their movements are being recorded, minute by minute.

The wireless revolution adds another dimension to the challenge governments already face adapting to a digital world. Easy-to-use and ubiquitous wireless communication can allow collaboration between colleagues, with instant access to documents and databases, but the major challenge lies in the “back office.” The information users need must be available in accessible, electronic form; paper can quickly clog the process.

To become more effective at the personal level, wireless technologies must converge. Most users want to replace their cell phones, pagers, email devices and PDAs with a single device that does everything. The same kind of integration needs to take place at the organizational level if governments are to realize the potential of wireless technology to allow the delivery of government services better and faster, but in many cases, that means a radical redesign of the agencies that deliver them. *www*

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