Untethered communication

by Tyler Cashion

The case for wireless in the Canadian public sector

fSONA's SONAbeam® Free Space Optics (FSO) System

AS WE PASS THE mid-point of the decade, there is little doubt that wireless and VoIP (Voice over Internet Protocol) are the primary disruptive technologies of the decade. Just as the Internet and email influenced the 1990s, and the advent of the PC changed everything in the 1980s, wireless and VoIP technologies are proving to bring obvious cost savings and deliver significant productivity benefits to organizations of all sizes.

But successful technology trends are not based upon cost savings and productivity benefits alone. A third factor must also be present, which is an ethnographic demand from those expected to use the technology on a daily basis.

More simply stated; there must also be lifestyle benefits if a technology is to be adopted *en masse*. This is fundamentally why VoIP and wireless will be successful technologies.

Interestingly, in governments throughout Canada, VoIP is receiving a lot of attention while wireless is virtually ignored. There are even a number of VoIP implementations and trials throughout various government organizations. In contrast, wireless technologies are not even considered by most government departments or agencies when it comes to designing voice and data networks and/or mobile working environments.

There seems to be a belief that wireless links are insecure and unreliable; even though the service providers from whom the government contracts telecom services may actually be using the same wireless technology to deliver the "reliable" telecommunications services. This paradox is further exacerbated by the fact that wireless technology could actually offer the governments of Canada greater cost savings than those offered by VoIP. Furthermore, wireless technologies can actually be more secure because the interconnected voice and data links would now be part of the government's domain instead of a third-party operator… who could also be subcontracting another operator.

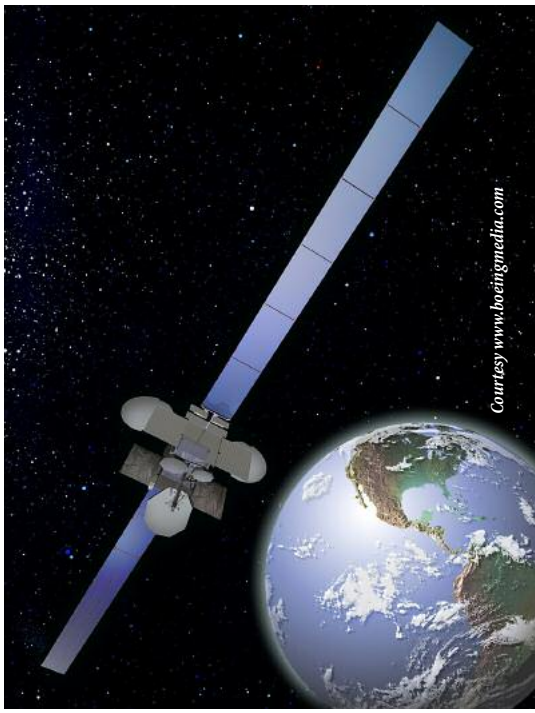
And, wireless is already used extensively by other governments. According to government researcher Input, "US government spending on wireless will grow from $1.9 billion in 2005 to $3.3 billion in 2010. Overall federal telecom spending is expected to grow from $16 billion this year to nearly $21.4 billion in fiscal 2010, driven primarily by e-government and presidential management agenda initiatives."*

US Department of Defense HummVee vehicles are equipped with point-to-point radio links from a Canadian firm, Redline Communications. These communication links support all field operations including those in Iraq and deliver more than 20Mbps of secured bandwidth for voice, data and video communication** to each vehicle. The UK and other European governments are also known for their extensive use of lasers, which can easily deliver speeds in excess of 1 Gbps between buildings that are up to five kilometres apart. Lasers are effectively fibre optic circuits without the fibre.

But wireless encompasses much more than just lasers and point-to-point radio systems. In the context of the governments' voice and data requirements, wireless solutions could include wireless LAN (WiFi), point-to-point radio systems (WiMAX), free space optics (usually lasers), cellular and/or satellite technologies.

Many organizations are still unaware that there are now satellite services that can deliver bi-directional high-speed Internet connections to virtually any rural location in Canada. As an example, this would enable a remote RCMP detachment, a VIA Rail train or Canada Post location to be adequately interconnected with headquarters.

"The benefits associated with wireless can no longer be ignored," says Stuart Patterson, special advisor for Central Agencies Shared Services and former director, Information Technology at the Privy Council Office. "But we must look at wireless holistically and not become preoccupied with specific devices or services."



Courtesy www.boeingmedia.com

*Fierce Wireless, July 2005 **Redline Communications, Sept 2005

So what's holding up wireless in the Canadian federal government? Is it political instability with a minority government, clarity on policy, lack of supply vehicles, lack of awareness or an apathetic supplier community? Might be all of the above, but it is important to understand that "Government departments are free to implement wireless networking as they see fit and develop their own wireless policies," according to Jim Alexander, acting chief information officer at Treasury Board Secretariat. Of course departments and agencies must still respect existing government policies and initiatives but they should not be waiting for a specific policy for wireless implementations.

To be fair, government isn't exactly ignoring all forms of wireless technology as evidenced by the adoption of Blackberries over the past few years. But Blackberries are just the "tip of the iceberg" with less than three percent of the world's mobile workforce using Blackberries. Blackberry is a great platform that accommodates the needs of many people but it is also a closed system that is limited to the specific functions offered by Research in Motion (RIM). This makes it difficult for large organizations to custom develop the software necessary to support their specific mandate or the occupational needs of different mobile workers.

To this end, Microsoft is working with a variety of handheld device manufacturers to create end-to-end open architecture systems that will interconnect easily with the government's largely Microsoft-based back office environments. Windows Mobile 5.0 would mean that a variety of devices suited to the needs of individual workers are available and that interconnecting these Tablets, SmartPhones and Pocket PCs to an organization's servers will be as simple as it is to connecting regular PCs. It also means that an organization's existing IT personnel can support the wireless deployment as they will already possess most of the required knowledge.

Some government departments and agencies are also starting to deploy other forms of wireless networking as well. Natural Resources Canada and Health Canada along with other departments and agencies are currently deploying in-building cellular repeaters from Spotwave so they can improve cellular coverage within their buildings.

While it was once considered gauche to use a cellular phone during a meeting, it is now considered essential that handheld data devices such as Blackberries, Treos, Pocket PCs and laptops remain connected during meetings so that critical information can be accessed helping to make the meeting productive.

Other departments, such as the Library and Archives Canada, are also taking wireless very seriously. "We not only have a mandate to collect and preserve Canada's documentary heritage, we also have a mandate to make it easily accessible," says Peter Bruce, director general and chief technology officer (CTO) for the Library and Archives Canada. "With wireless laptops now pervasive, we use wireless LAN (WiFi) technology for visitor connectivity in our reading rooms. Our first experience with wireless connections for laptops was when we hosted the International Internet Preservation Consortium. About 20 participants from all over the world came with their wireless capable laptops. All but one connected quickly and easily to our guest access service. The remaining delegate required a few minutes to change a parameter on his machine. Had the Library and Archives Canada constructed an environment that only allowed guests to connect to conventional Ethernet ports, the costs would have been exponentially higher. Furthermore, guests would have only been able to connect in that single location instead of wherever they needed to. This means that the wireless LAN technology is enabling the Library and Archives Canada to deliver better against their mandate. In fact, with guest access being so successful, Library and Archives are now testing wireless LAN systems for their own internal requirements."

Wireless networking doesn't end with the wireless LAN for Library and Archives visitors; they also use point-to-point radio, microwave and laser systems to interconnect their buildings. With installed wireless point-to-point connections delivering speeds up to 100 Mbps and carrying an installed price tag of $10,000 to $50,000, they are an extremely cost effective alternative to T1 or fibre optic telecom circuits. At the Library and Archives Canada, the

investment payback period for wireless has been under one year. One government source told me that a 10Mbps fibre optic link in Ottawa can cost as much as $9,000/month. Even lower cost circuits cost at least $2,000 per month for a 1 Mbps link while a $10,000 microwave or radio link can deliver 10-100 Mbps making the economic benefits quite profound. "We save a lot of money on monthly recurring costs," says Peter Bruce, who added that, "When we move buildings, we can move the connection points… which we already own… to accommodate the changes. As for the stability offered by the wireless technology, it has proven to be very reliable for data communications… I even conducted a video conference over IP (VCoIP) the other day using our microwave link."

With this in mind, one has to consider how much money Canadian governments could save if they were to employ wireless connectivity across all departments and agencies. In addition to significant cost savings, wireless enables improved productivity and an untethered lifestyle that is being embraced by consumers, businesses and governments alike.

It is reliable, secure and worthy of consideration by all departments and agencies for all networking requirements. In this writer's opinion, wireless technology should be a key component in any government's communication structure.

Tyler Cashion is a veteran market strategist and technology generalist with a 23-year career spanning the broadcast television, computing and telecommunication industries. Tyler was the chief strategist for Telecommunications & Service Providers at Intel Corporation until 2003 before choosing to pursue his dream of building a wireless voice and data systems integrator, FirstComm Wireless.