The Time is Now for Managed Private Wireless Networks

By Andy Paff

In 1990 I received my first company cellular phone. I thought at the time it was a miracle perk as I could drive around (no handheld) and catch up on kids’ activities and other frivolous personal matters. I soon realized how smart my employer was. Between cell phones and voice mail we stayed ahead of the competition. This came together for me one night when I was able to close a multi-million dollar order driving through rush hour traffic while competitors were long since clocked out.

Mobility for voice started as a business tool and quickly became essential for people of all ages in their personal and professional lives. This took fewer than 20 years.

The next frontier is high capacity, high reliability, and high security wireless-in-the-workspace. The leading applications are currently being driven in industrial settings and in medical facilities where the velocity of information flow can literally mean life or death. Like the cell phone evolution, enterprise wireless started as nonessential mobility for Internet access and to untether individuals from their desk phone. WiFi networks were thrown up, often in an unofficial and certainly not tightly managed process. Mobile network operators have had to manage the increasing burden on their macro cells from those employees that could actually use their phones inside the enterprise.

The Internet of Things (IOT) is really a catch all term for the avalanche of applications that have emerged in the enterprise to perform specific functions. Most of these require modest bandwidth, reliable connectivity, and isolation from internal security-sensitive databases and network infrastructure. The wireless network, typically WiFi, is the backbone for an ever-increasing number of clients and applications serving the diverse needs of the enterprise. The disparate uses for IOT combine to form an essential competitive advantage for the enterprise:

“81% of CEOs see mobile technologies as being strategically important for their enterprises. The top three technology priorities of industrial manufacturing CEOs are mobility (73%), cybersecurity (72%) and data mining and analysis (70%). 86% of
CEOs say a clear vision of how digital technologies including mobile can create competitive advantage.” - Forbes

The tsunami of data resulting from IOT will also become a critical tool through focused analytics and continuous improvement techniques.

At some point, the network breaks. It might be the sheer number of connections, the security issues with the current WiFi setup, or the higher bandwidth applications (e.g. video) that are becoming important.

There is help on the way. New frequencies will be made available to the enterprise from the FCC’s CBRS initiative. When combined with existing unlicensed spectrum (that will be pulled into the new CBRS, Part 96), there is a potential of 150 MHz available for private networks. This is a complicated issue and commercial wireless interests may impact the reality. But it is a tremendous resource for the enterprise building the next generation of internal wireless connectivity.

The other key resource for developing secure, reliable, high bandwidth private wireless networks comes in the form of LTE networks adapted for private enterprise deployment. This can take many forms, but will likely involve virtualized LTE. The ability to harness LTE protocol and its inherent capability to manage connection, bandwidth, and improve security for private networks will be a game changer. The objective is to achieve the benefits of LTE at or near the cost of WiFi. Virtualization will reduce the cost of key components through firmware integration at the node. Even the core and backhaul costs can be eliminated or greatly reduced through this process. Equipment is already available and more is on the way.

WiFi will also evolve alternatives to fit this new enterprise wireless model.

With access control protocols and spectrum available to private enterprise, the chaotic world of IOT will become manageable. But, it will need to be managed. This does not mean the enterprise must sign up with an existing wireless or wire line network. Independence from this fate will prove essential in the long run.

Andy Paff’s focus is on the implementation of game-changing wireless and wire line broadband technology and he has successfully led high profile hardware and software companies that have had profound impact on the status quo and is now a Co-Founder of Xspand.