

Mobile broadband for education and nonprofits.

Mobile Citizen* is the first fourth generation (4G) service provider to offer mobile broadband service exclusively to education and non-profit organizations at remarkably low cost. By bringing the most advanced, reliable and secure mobile broadband service to schools and non-profits, Mobile Citizen is making a difference in how people learn and work.

Interview: Frank Ohrtman on WiMAX in Education

Mobile Citizen's Director of Broadband Services Leslie Lord sat down with Frank Ohrtman, President of WMX Systems, LLC, a Denver, Colorado-based consulting and systems integration firm. Frank is one of the leading proponents of 2.5 GHz spectrum to deliver WiMAX-based educational technology services in the U.S. He is also recognized as a thought leader related to how WiMAX can connect schools, students, faculty and staff anywhere in the district.

Leslie: *As a service provider working exclusively with education and non-profit organizations, Mobile Citizen is particularly interested in demonstrating how WiMAX technology would benefit schools and improve the academic performance of their students. In your experience Frank, what do schools need to consider when formulating their district-wide broadband wireless access network plans?*

Frank: Providing some majority of a school district's K-12 students with WiMAX-enabled laptops presents significant challenges in terms of technology, finances and pedagogy. And just like the 3 R's of primary school, I like to explain the deployment of a WiMAX network for the school district in terms of the 3 A's: access, affordability and applications.

Access

Access refers to how a student might access the Internet or school intranet. Internet skills are critical in the job market of 2010 and will be even more so in 2020. Students with no internet access are at a distinct disadvantage to those who do have internet access at home especially those with a dedicated broadband internet connection. If students have no internet access of any sort (dial-up or broadband) at home, then it becomes necessary for the school district to get involved to insure that "no child is left behind" in online participation and education.

Applications

It would do the school district no good to build a wireless broadband network and give each student a laptop if instructional applications are not adopted by students, teachers and parents. Some advantages for students include teacher/district-approved reading assignments, teacher's lectures in Power Point or video (QuickTime™ for example), interactive gaming for math, reading proficiency, achievement tests, etc. More importantly, recent developments in video compression technology makes high definition video conferencing and distance learning on as little as 1 megabit per second (Mbps) possible. WiMAX provides the bandwidth to the end user to make this possible.

Affordability

Bringing wireless broadband internet/intranet access to all of a school district's students may be surprisingly affordable. Many schools have licensed wireless spectrum (2.5 GHz), real estate (school buildings), fiber optic cable connect many schools and in-house technical staff (educational technology and IT staffs). In addition, some EBS licensee's are beginning to resell Clearwire WiMAX services at reduced rate pricing for educational institutions. One case study reveals that a WiMAX-enabled one-to-one program (laptops and WiMAX network) could cost about 5% of that school district's annual, per student allocation.

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Leslie: *There is a lot of grant writing activity for federal money available through BTOP (Broadband Technology Opportunities Program). Are you optimistic that school districts can take advantage of stimulus funding to implement WiMAX deployments?*

Frank: Perhaps the ideal BTOP funded project begins with a school district's WiMAX connected one-to-one computing program (think "Laptop in Every Backpack™" or "No Child Left Offline™") and spreads across the community's public sector to support health care, public safety and "smart grid". Along the way, low income households in those unserved, underserved or rural communities are introduced to computers and broadband internet usage by their school age children or relatives. Given the leadership of a school district to blanket a community with low cost, high bandwidth WiMAX, healthcare providers can use that same network to provide telehealth and telemedicine applications to low income households, the aged and infirm saving billions of dollars in healthcare costs across the nation annually.

Public safety agencies can make good use of that same BTOP-funded network to support law enforcement in filing reports from the field and video surveillance, saving taxpayer dollars in improved officer efficiency and improved safety.

That same low cost, high bandwidth WiMAX network can provide public officials with their own version of a "smart grid" in being able to monitor energy use in public buildings in real time and graph energy use over time independent of the utilities records. Energy savings alone, for some communities, might pay for the network over time.

Speaking of energy, the WiMAX base stations and outdoor subscriber units of that BTOP-financed network can be powered via renewable energy sources such as solar and wind power generators with battery backup. Advantages of doing this include cost savings in installing the network, reduced monthly recurring costs and reliability that meets FCC mandates for emergency backup power for telecommunications (Katrina Commission). Adding this renewable energy component to a BTOP application could provide a positive weighting to the application.

Leslie: *Thank you for your time today. How can people reach you if they would like to find out more about assistance in applying for Broadband Technology Opportunities Program grants?*

Frank: You are welcome. People can reach me at the contact information below.

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***Mobile Citizen provides Clearwire mobile broadband services to education and non-profit organizations on behalf of these five EBS licensees:**

INSTRUCTIONAL TELECOMMUNICATIONS FOUNDATION, INC (ITF)

ITF is a non-profit organization and an EBS licensee serving Indianapolis, Kansas City, Las Vegas, Philadelphia, Phoenix, Sacramento, and Salt Lake City.

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