

The Real Benefit of WiMAX in the U.S.

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Today's WiMAX vs. LTE ([News - Alert](#)) arguments are all posturing. WiMAX has the early lead. LTE, in 2010, will be little more than a trial. Indeed, it will be 2012 before LTE is widely usable, and then only for data! Mobile voice telephony on LTE will take longer, as the industry only recently agreed how it should work. Specifications still need to be completed; then the equipment must be designed, tested and deployed.

However, 2013-2014 will see stable voice over LTE, plus the spread of mobile devices supporting both 3GSM ([News - Alert](#)) (HSPA) and LTE. At that point, the enormous base of GSM/3GSM users (currently 88 percent of all mobile subscribers worldwide) will tip the advantage to LTE. Volume drives down costs. LTE infrastructure will cost less. LTE handsets will cost less. By 2020, LTE will be the clear winner leaving WiMAX ([News - Alert](#)) perhaps a 10 percent global market share, similar to CDMA 2000 today.

In the long run, WiMAX can't win against GSM/3GSM/LTE but technology-specific spectrum licenses also mean it can't fail. Many countries (not the U.S.) have licensed spectrum specifically for WiMAX services. Markets may shift every few years, but bureaucracies take decades. So market forces tip the balance to LTE while politics guarantees WiMAX a place, independent of which system is better or which system is first.

What's interesting is the major positive impact WiMAX will have on U.S. mobile data services. Again, the reason is spectrum licenses.

Today, the U.S. has three national 3G networks — Verizon ([News - Alert](#)), AT&T and Sprint — with T-Mobile in the process of rolling out a fourth. These networks use traditional mobile technology (3GSM & CDMA 2000) on relatively narrow bands of spectrum — typically just 10-20 MHz each. Verizon and AT&T acquired additional spectrum for their LTE launches in the recent 700 MHz auction. Verizon obtained 22 MHz of "C" block spectrum, while AT&T won 12 MHz "B" block licenses.

Compare this with Clearwire ([News - Alert](#))'s emerging WiMAX network. Clearwire has 90-120 MHz of licensed spectrum (at 2.5 GHz) in regions across America. WiMAX and LTE are roughly equivalent in efficiency (bps per Hz) at any given point in their respective roadmaps, so 4x to 10x more spectrum means 4x to 10x more capacity for Clearwire. What's more, higher capacity allows significantly higher peak data rates — a major competitive edge when marketing mobile Internet access.

Clearwire is a newcomer going up against four established national operators and it could be 2011 before they are competitive nationally. But then, it's a newcomer using higher data rates and more capacity to compete against four incumbents. Let the price wars begin! The benefit of WiMAX in the U.S. will be affordable mobile Internet access for all. **IT**

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