



This is the second in a series of point of views from Sky Light Research:

SLR's Point of View: The Importance of an Ecosystem

The wireless ecosystem was a notable concept before August 8, but now that Sprint has announced its 4G technology choice there is no dispute that technology alone does not a decision make. Before it gave homage in the August 8th press conference to the runners up in the 4G race, Sprint outlined the four factors that benchmarked its decision:

1. first to market,
2. economic performance,
3. ability to create an ecosystem, and a
4. compelling business model.

Partnerships with Intel, Samsung, and Motorola fuel this plan with experience and resources to move the deployment along for its 2008 launch.

Coincidentally, preceding the Sprint announcement by about 24 hours was an article from the Global UMTS TDD Alliance throwing down a challenge: Can WiMAX prove its mettle as a mobile technology? The tone of the article indicated a Sprint decision was imminent and, although the author made some good points, the main take away was that Sprint's choice was not UMTS-TDD. The long awaited decision was critical for all equipment vendors involved - after all, this one operator with a mass of spectrum could elevate the stature of any technology to a tier 1 level. In any event, we all know the outcome and listening to a celebrating crew of speakers at Sprint's press conference from Intel, Samsung, and Motorola, we waited for someone to specifically address this gauntlet challenge.

The new Sprint ecosystem has been challenged to address a long list of hurdles that 3G companies have worked for years to overcome: managing mobile networks (software, billing, roaming, etc.), signal propagation, building penetration (interference mitigation and multipath correction), and high speed soft handoffs. Another critical element is the promise of multimode EVDO/EVDO-Rev A and mobile WiMAX devices. In the above-mentioned article, the Alliance asserted that while execs favored the WiMAX decision, the technology folks were in favor of UMTS-TDD technology for its long-term promise. A "massive hype engine and financial incentives" were blamed for the decision to use mobile WiMAX. While that may be true, Sprint's CTO, Barry West, made no qualms about the fact that a critical piece to the decision was the promised price of the mobile WiMAX chipset and the ability to integrate these chipsets into any type of CE device imaginable.

SLR believes that IP Wireless was a close contender for the winning bid and most likely came to the table with an impressive ecosystem of its own. And although the Sprint deal was definitely a "make" deal for IPWireless, it wasn't a "break" deal; the company



remains strong in other regions with an impressive list of commercial and trial deployments. Flash OFDM technology, which was one of the top four candidates (HSPA, the fourth), claims to have more than 50 networks in deployment today running anywhere from 40 kbps to a megabit. With commercial networks in place, the two companies are able to navigate around imminent land mines involved in deploying any new technology. Thus, pointing to the obvious - there's a chasm between technology that's been deployed and proven and technology that's on paper - an understandably frustrating point for IPWireless and QFT.

When pushed on the specifics of the technology, the winning parties could not specifically provide comforting statistics, but they did mention this is where cellular was 20 years ago and with the right technologists and people who understand the basic paradigm shift, it gives them the confidence that is needed to "go for it", despite the difficulty of assigning numbers to certain metrics. And while a can-do attitude is what it is all about, it's a risky multi billion dollar bet, especially given the infancy of mobile WiMAX.

Don't misunderstand, Sky Light Research firmly believes that mobile WiMAX will be a corner stone of mobile broadband data, but the timelines set forth in the call appear aggressive, especially given the promise of multi-mode devices and the ability to have all of Sprint's services operate seamlessly across the EVDO and mobile WiMAX network. Yes, we understand these things take time, which is what we've been preaching in every report we write. We also understand that the promise of EVDO and EVDO-Rev A networks smoothly migrating to 4G as 4G is being rolled out (as indicated in the call) is a tall order.

This brings us full circle to the ecosystem. All of this makes you wonder if the power of that ecosystem just might be in the back pocket, where Intel can't be beat. After all, a network build out that reaches 85 percent of households in the top 100 markets will require resources that would greatly challenge a smaller company (who might have more lint in the pocket than cash), no matter how smart they are. If you want the job done right, you need more than great technology and earnest desire, you need a lot of hands and some deep pockets.

In addition to Intel's obvious clout, Motorola and Samsung have experience both in infrastructure and subscriber equipment. They also both know how to integrate and install mobile networks. Further, the maturity of WiMAX (or lack thereof) does not negate the technology's promise compared with incumbent mobile technology. It's true that real trials and early deployments will reveal tech hurdles akin to the long list stated above and true that some will stand back and say, "I told you so." However, that is expected with every new technology, and the partners chosen for the job are experts in cellular topology.

What other equipment providers might share the pot of gold? There are a number of companies who are qualified to throw in a hand and time will tell whether Sprint will divide the pie after the initial rollout. But one key and critical piece of bringing the



network together is backhaul – predominantly T-1's and fiber today. As mobile data rolls out, backhaul needs will increase dramatically, and current wired backhaul will be augmented by less expensive wireless backhaul. So whether backhaul will be IP on the edge with vendors like Aperto, Redline, Dragonwave, or Orthogon Systems (now Motorola) etc, and move to higher capacity IP/TDM radios in the core from the likes of Alcatel, Ceragon, Harris, NEC, Nera, or Stratex Networks, is yet to be seen. One thing is for certain: the new Sprint ecosystem will overflow into other vendors' pockets that are able to provide key elements of the 4G network.

Here's one more thought to mull over (caution: to be taken with a grain of salt)... Motorola, through its acquisition of NextNet (the sole point to multipoint supplier for Clearwire), will start supplying equipment for Clearwire's 2.5 GHz mobile WiMAX networks. So here are two key 2.5 GHz spectrum holders in the USA publicly using the same equipment vendor. Hmm. Now all parties refuse to comment on whether there's a possibility that Sprint and Clearwire would ever partner (or engage in acquisition/merger activity) on this nationwide WiMAX build out, but it's an interesting and potentially significant proposition.

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