

TECHNOLOGY BRIEF

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Special points of interest:

- Maxed out on WiMAX? Want to know more about WiMAX, but overwhelmed by the marketing hype? Read Part I of our WiMAX Update Series.
- Pulling your hair out in anticipation of what the technology platform to invest in is? Take a look at the concept of building a “Good Enough Network” - and sign up for a risk-free Technolog-E-Advisor subscription TODAY!!!!
- What’s the best radio for the job? Trango? RedLine? Canopy? RadWin? Tranzeo? Mikrotik? Orthogon? Want to know the “hidden secrets” that salespeople “conveniently forget” to tell you about? Read real-world user reviews at www.wispreviews.com

WISPNOG A REAL CONFERENCE FOR REAL WISPS

Date: February 2005
Location: Chicago, IL
Topic: Beyond the “Mom-and-Pop” WISP, the 1,000+ CPE Debate

Attendees: Experienced Wireless WAN Professionals (WISP operators, manufacturers, integrators, engineers)

WISPNOG is for the experienced WISP (newbies need not apply). WISPNOG is operated like a Symposium; no more listening to “expert” salespeople, WISPNOG is the ultimate coffee break; a forum where industry professionals get together, discuss and EXCHANGE ideas. WISPNOG, by NOT HAVING an exhibit hall, will not be funded by vendor sponsorships, and thus its content will not be diluted by marketing hype.

WISPNOG is NOT another “what is an antenna” conference.



ANOTHER %#\$^ “FUNDAMENTALS” COURSE

Most trade shows today boil down to basic “How-To” training classes (disguised sales pitches) glued onto an exhibit hall. This type of tradeshow is funded almost exclusively through vendor sponsorships, so not surprisingly, most sessions are “owned” by vendors. The main reason I still attend these conferences are for the unofficial “coffee break” sessions, where I am able to mingle, congregate and exchange ideas with my peers. I have learned that operators all generally seem to encounter

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TECHNOLOG-E-ADVISOR DEBUTS \$99 MONTH-TO-MONTH NO CONTRACT PLAN

The Technolog-E-Advisor Subscription provides:

1. Access to a CWLab technology architect who is highly knowledgeable, totally objective, and has only YOUR BEST INTERESTS IN MIND.
2. Up to 5 individual cases (technology inquiries) a month lasting up to 30 minutes per calendar day
3. Free admission to WISPNOG

CWLab Technology Architects design long-term technology plat-

forms that support an organization’s business strategy. CWLab Technology Architects are VENDOR NEUTRAL; meaning that they have NO VESTED INTEREST in selling or promoting a particular technology.

www.cwlab.com/Solution/

MAXED OUT ON WiMAX

PART 1: WiMAX-WHY NOT

According to Jupiter Research, as of Q3 2004, there were an estimated 81.1 million residential Internet subscribers in the United States. The breakdown is as follows:

Cable Companies: 19%
Telephone Companies: 12%
Independent Operators: 69%

Independent operators currently utilize the Cable or Telephone companies to access the majority of their customers, mostly dial-up, in the USA. With the increasing demand for broadband, a key business and technological issue facing independent operators today revolves around providing competitively priced broadband access services.

Unfortunately, we don't own either the copper or cable plant (otherwise, why would we be reading this newsletter?). The options for the independent operator look fairly bleak due to the fact that the system owners are direct competitors. Copper (with the support of the 1996 Telecom Act), once thought to be the best solution for last-mile broadband, has, with the recent UNE-P review refusal of the Supreme Court (see last month's *Technology Brief*), all but disappeared as a viable alternative. Cable initiatives, once filled with "promises," have never materialized into anything concrete to date. Ter-

restrial fixed wireless, after the spectacular billion-dollar failures of both Sprint Broadband Direct and venture-backed organizations like Winstar & Teligent, isn't much of a holy grail.

Now, WiMAX™ is being presented as "the great wireless hope" for independent operators trying to solve the last-mile broadband access problem. The WiMAX forum is working to facilitate the deployment of broadband wireless networks based on the IEEE 802.16 standard by helping to ensure the compatibility and inter-operability of broadband wireless access equipment. WiMAX is a standards-based technology enabling the delivery of last mile wireless broadband access as an alternative to cable and DSL. In a typical cell radius deployment of up to 6 miles, WiMAX systems can be expected to deliver up to 40 Mbps per channel, enough bandwidth to simultaneously support hundreds of businesses with T1 speed connectivity and thousands of residences with DSL speed connectivity with competitive pricing. WiMAX hopes to solve the CPE cost equation by forging a common standard so that vendors across the board can leverage common standards-based manufacturing. In addition, unlike first generation fixed broadband wireless access technologies, WiMAX addresses the classic terrestrial wireless Line-of-Sight issue with Non Line-of-Sight (NLoS) Orthogonal Frequency Division Multiplexing (OFDM)

technology.

Proponents of WiMAX, backed by an impressive marketing campaign from Intel and citing AT&T's \$10+ billion annual access charges, have built WiMAX into the "magic pill" for solving the independent operator's last-mile dilemma. The volume of news coverage, newsgroup discussion and exposure generated by the promise and potential impact of this standard has grown exponentially.

WiMAX Update - Q3 2004:

A couple weeks ago, I had the opportunity to attend the WiMAX World conference. One thing that I have learned over the years is that having an inquisitive and outgoing attitude along with the willingness to network and drink coffee with as many people as possible will generally open up many opportunities for both new business contacts and new solutions to investigate. After that, everything is up for grabs.

After arriving on Wednesday morning we went straight into a session being delivered by Gordon Antonello (Chair-WiMAX Forum Technology Working Group) who did an exemplary job of detailing out what the

(opposite Page)

"WISPNOG is operated like a Symposium; no more listening to "self-proclaimed" experts, WISPNOG is the ultimate coffee break—a forum where industry professionals get together, discuss and exchange ideas and solutions for the various day-to-day issues that they face.

WISPNOG: ULTIMATE NETWORKING COFFEE BREAK

(from Page 1)

similar problems, and it's extremely refreshing and educational to know how different minds approach and handle these similar issues.

WISPNOG sessions differ drastically from the traditional listen and learn format popular at most tradeshows today. WISPNOG sessions will not have "speakers" per say, rather, qualified moderators will be chosen and given a small amount of time (typically 5-

10 minutes) to "jump-start" the session with a particular position or solution. Thereafter, the session will be turned over to the audience to talk and debate the topic further.

www.wispnog.com

WiMAX-WHY NOT?

(from Page 2)

WiMAX forum is trying to do, what the timetable looks like as of early November 2004 and what we can expect in the next year or so.

Originally, November 2004 was supposed to be the month where the first round of WiMAX certifications began. This has now been pushed back another three to six months and we have been told that even this new data would most likely not produce any certified equipment. While a number of reasons were given for this (including the growing list of 900+ certification tests), the bottom line is that the certification process is turning out to be more difficult than originally anticipated.

A few manufacturers will be releasing "Pre-WiMAX compliant" sometime in the first quarter of 2005. (a few manufacturers have already released 802.16a "compliant" equipment). The associated bad news (as one would expect) is that there probably will not be any such equipment available for use within the US as manufacturers seem more interested in the international 3.5 GHz bands. (Skylight research estimated that the US represents

less than 20% of the world-wide BWA infrastructure market).

I can also tell you that I did receive quite a rude awakening during the question and answer period following Gordon's presentation. While many of us (in the field) are sick to death of all the WiMAX publicity, there is still an enormous amount of misinformation on WiMAX. Case in point: one fellow asked, "What output power will the WiMAX Forum set for these devices?" Personally, I thought that Gordon showed an enormous amount of grace by patiently explaining the answer to this question.

One more session that absolutely floored me was delivered by Dr. Mohammad Shakouri (Chair-WiMAX Forum Marketing Group). Dr. Shakouri brought the topic of WiMAX to life with a mixture of charm and humor I have rarely experienced before.

Among the many important things Dr. Shakouri presented, the one that struck me the most was, **"WiMAX will make you money."** Sounds good, but coming from the Chair of the WiMax marketing group, I cannot help but wonder who "you" refers to...is "you" the independent operator? Or perhaps, you refers to the WiMAX equipment vendor, consultant,

analyst and manufacturer?

After the presentation was complete, Dr. Shakouri opened the floor up to questions. I asked how the WiMAX Forum was viewing all the hype and ensuing misinformation that now seemed to be coming from everywhere. He responded that originally the WiMAX Forum Marketing Group (which he chairs) thought this publicity was a good thing. Their view now has changed as they are now beginning to realize that this overabundance of media attention coupled with the misinformation being distributed needs to be reigned in. If not, the fear is that WiMAX will be looked upon as a standard that did live up to the promise.

One of the last questions asked was from a gentleman seated near the front. He had been very patient, and when it was finally his turn, he asked "What output power will the WiMAX forum set?" to which he quickly added, "I asked this question at an earlier session and never received a reply."

www.cwlab.com/wimax/

NEXT MONTH:

WiMAX: What is it? REALLY?

"Dr. Shakouri, states that "WiMAX WILL MAKE YOU MONEY." Sounds good, but coming from the Chair of the WiMAX marketing group, I cannot help but wonder who "you" refers to...is "you" the independent operator? Or perhaps, you refers to the WiMAX equipment vendor, consultant, analyst and manufacturer?"

THROUGHPUT CERTIFICATION TEST #201: QUESTIONS ANSWERED

The Throughput Certification Test #201 begins this month. Results will become available starting January 2005. Vendors who still want to get their equipment tested should contact cwu@cwlab.com

The main purpose of Test #201 is to create a "REAL WORLD" certification that is useful to operators and consumers alike. To answer the controversy in

not using smartbits (the defacto vendor industry standard), we state that the main purpose of Test #201 is to certify the "real throughput" or data transfer speed of a particular solution. The average consumer views "real throughput" in terms of data (FTP) transfer rates. This method of measurement should put the "real throughput" fairly close, but slightly less, than a honestly rated (via smartbits) line speed.

Unfortunately, in the interests of K.I.S.S., Test #201 will not take into consideration distance effects on the performance. Test #201 is certifying a "best-case" environment (no interference, solid signal) for radio products. Future benchmarking tests will answer the distance / performance issue. For more information or to add additional comments, go to:

www.cwlab.com/certification/



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We're on the Web!
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Upcoming Events



December 7-10 2005
www.wcai.com/event/05/w_gen.htm



January 12-14 2005
www.wcai.com/event/05/ts11gen.htm



January 30-February 1 2005
<http://www.nanog.org>

TECHNOLOG-E-ADVICE: THE "GOOD ENOUGH" NETWORK

I recently was able to participate in a discussion on how independent operators are falling behind in broadband deployment and what we need to do to catch up. One of my colleagues feels that we need to be providing 100meg or Gigabit Ethernet to our customers in order to stay competitive (against FTTH I guess). I think that this is a lofty goal and agree that it is one that we should all strive toward. However, in light of basic business fundamentals (profitability) and my need to earn an honest living, I propose that it makes more sense to build networks that are "Just Good Enough" while concentrating on other elements of the business.

While there is a rapid rate of technological change, certain essential parts of the Internet access business do not change at the same rapid pace. Basic business practices such as financial management, maintaining customer relationships, building a customer base, solid billing, good back-end services and developing human resources are MUCH MORE IMPORTANT in many ways than the technology behind the network.

In the WISP world, there are a few things that do not change as fast as the technology but are still critically important. Obtaining good tower locations, establishing paths for backhaul, developing relationships with tower climbers, knowing tower owners and having an understanding of how RF & networking are several things that the WISP needs to do that are all independent of technology used.

Then we have the technology, which changes very rapidly. This is both good and bad. It is great that we have technology that improves at a rapid rate, but it also induces analysis paralysis in waiting for the "next big thing" when there are plenty of suitable alternatives for use right now that make much more practical and economic sense. One testament to this fact is that one of the most popular BWA (Broadband Wireless Access) platforms is the Alvarion BAI system. The basic technology behind this equipment is over ten years old and can only supply about 1.5 Mb per radio of actual throughput. Even so, there are hundreds of thousands of satisfied customers receiving their high speed internet through these systems. 802.11b/WiFi based systems (standards compliant & proprietary) compose an even larger portion of the BWA market although their adoption has a lot more to do with economies of scale and cost than it does with technology. Moving forward, both proprietary & 802.11a/g based systems show a tremendous amount of promise. It is my belief that the majority of WISP deployments over the next two years will be based on one of these two systems, although there will be major deployments of other non WiFi-based proprietary systems such as Canopy and Aperto. Until WiMAX equipment becomes economically feasible for deployment (and there is a BIG IF on this), the majority of WISP operators will be deploying WiFi or proprietary systems built upon economically affordable WiFi chipsets .

To summarize, if I am asked what kind of network to deploy I would respond with one that is "Just Good Enough" for the current market needs. Develop all of the other things related to the actual service - build the business procedures and customer base & lock up good tower locations while establishing relationships with providers and customers - and start offering service. We are not just building networks - we are building businesses of which networks are a big part. Who cares what technology we use, keep economic principles and sound business practices.

-Charles