

# Oregon Connections Conference

Bend, Oregon 9/29/05-9/30/05

Trip Report - Tina Nerat

## ***Keynote – Realizing Broadband Wireless, Ron Resnick, Intel***

- Ron started out with an overview of broadband around the world. Korea is leading the way. India has some unique ways of using the Internet – he showed a picture of a bus that travels around with WiFi, collecting e-mails to be sent/delivered, so e-mail is not real-time.
- Intel’s goal is personal mobile broadband. Surveys show that 38% of households are interested in portable broadband and 37% are neutral. Intel is building the market for WiMAX.
- Cellular companies has lost on 3G technology (CDMA). There are political and financial issues. The infrastructure is not built out for wireless. OFDM will likely be the new technology with more throughput capacity. OFDM(orthogonal frequency division multiplexing) is packet-oriented and can handle more users within its spectrum. Qualcomm recently purchased a company, Flarion, which gives them access to OFDM. Since WiMax is partially based on OFDM, Qualcomm and Intel will be going head to head in a battle over standards.
- There are over 150 world-wide WiMAX trials going on now. Google “wimax trials”. There are 332 WiMAX Forum members. Qualcomm is not a member.
- WiMAX is an overlay for 3G, using a different spectrum. 3G is mobile narrowband with low fixed bandwidth. WiMAX has both uplink and downlink. 4G technology is likely to be based on OFDM. OFDM bounces off well and reconstructs packets well.
- WiMAX today is fixed and is mostly a “fill in” for areas DSL and cable don’t reach.
- November/December should see certification of products for WiMAX. Point to point and point to multipoint are possible. Backhaul generally needs fiber. 5ghz general has 10-12 miles line of sight. He stated that non line of sight can be less than 3.5 ghz.
- WiMAX needs cell sites to mount on. In rural areas, 5ghz unlicensed spectrum will probably work (though not in our terrain). Majority of WiMAX will be in licensed spectrum. Available spectrum is key. Sprint and Nextel own 80% of point of presences (POPs) around nation in the 2.5 ghz range. Intel believes more spectrum will be auctioned soon.
- It will be probably 2 more years for mobile broadband.
- Security is not an issue with encryption.
- WiFi is peer to peer while WiMAX has a bay station and is carrier class communications.

- Next year there will be a PCMCIA card available for WiMAX. By 2007, it will be built in, like Centrino. 2008-2009 will bring phone sets.

### ***Silicon Forest to Internet Forest – Chris Tamarin, Oregon Economic and Community Development Department***

The Portland area is called the Silicon Forest. HP, Tektronix and Intel have been there for some time. Google and Yahoo have established a presence there this year. *The World is Flat* by Thomas Friedman is recommended reading.

- Oregon has 11 undersea cable landings and fast track permitting so they are a desirable state for telecom infrastructure connecting to Asia.
- Seattle, LA, and San Jose are peering points on west coast. They would like Oregon to have a peering point.
- Oregon Telecommunications Coordinating Council ([www.ortcc.org](http://www.ortcc.org)) has a paper of interest on what they want to do with telecom in Oregon, particularly with being the preferred location for businesses needing connections to Asia.
- He talked about assistance with public funding when the private sector funding isn't enough in the startup stages.
- They believe in broadband for both rural and urban regions.

### ***700 Square Mile Broadband Wireless Network – Brad Kincaid, EZ Wireless***

EZ Wireless ([www.ezwireless.us](http://www.ezwireless.us)) built a 700 square mile wireless broadband network in central Oregon/southern Washington. This was built at their own cost as a pilot in return for agreement to contract for services if successful.

- The network was built for first responders for the Umatilla chemical weapons depot, which stores 1/3 of the country's chemical weapons. For many articles on this subject Google umatilla +chemical +wireless. It is a public/private partnership.
- Politics was the biggest issue – 30 agencies, 9 cities, 3 counties, 2 port authorities, and 2 states. Right of way was also a challenge. EZ Wireless has "relationship engineer" who cut through all the politics and is willing to share techniques with others.
- They started with cell phone vendors, but they were unwilling/unable to provide a broadband data network.
- Cell phones take priority over data on this network.
- Private companies and citizens can sign on free on most of network as "guest". They are limited in what they can do while signed on.
- This network has been in production since 2003.
- Network adheres to DOD level security (FIPS 140-2).
- In the field, the bandwidth is >2mbps.
- They have demo'd triage in ambulances.
- In writing traffic citations, 40 minutes is save PER CITATION by using broadband network. This adds up to big savings.

- Other opportunities have been real time data entry of first responder reports, wireless video surveillance, personnel tracking, linking traffic signals on Hwy 395.
- The network has 4 fiber connections, uses point to point with cell towers, WiMAX, has good video at 54mbps.
- The terrain there is much flatter than our region.

### ***Homeland Security Needs, Applications, and Opportunities, Ann Steeves and Terry Edvalson***

Ann talked about her hospital system and what's needed to respond to disasters. Important aspects are: alerts, inventory of bed capacity, situation management, unified command, volunteer database, cross agency planning, surge capacity, identification of special needs of home patients. SAFECOM, a government interoperability and compatibility program, <http://www.safecomprogram.gov/SAFECOM/>, works to improve public safety response.

Terry talked about the WA-DA tribes efforts to develop a "warm site" for the lottery in eastern Oregon near Burns. Tribes in rural Oregon are the #1 or #2 employer. The WA-DA hope to drive broadband services and initiate economic development. Burns, Bend, and LaGrande are on old Enron fiber route. In 1995 they opened an archive center, but it did not attract expected volume of business or foster economic development. In 2004 they decided they needed to put in \$5 million or pull out. There is a project going with Database File Tech Group, a Canadian company to do backup/archiving, disaster recovery services, e-vaulting, and other IT business opportunities.

### ***Innovative Telecom Projects – Steve Milligan, Monmouth and Independence***

Steve talked about fiber to the premises project in Independence and Monmouth. They had an inadequate incumbent (Qwest) with DSL, but not enough pairs, and no cable modem service. Western Oregon University is located there.

- They have a local water and power company so some infrastructure exists. Funding was through OECDD since it was \$8 million needed, too much for bonds. WOU is anchor tenant.
- A board of six was formed under ORS190. ORS190 is an Oregon interagency government agreement, and it was talked about a lot at conference. There is flexibility and local control.
- Fiber loops will be put in both cities and provide 5/10/15mb symmetrical broadband services, 180 channels video, video on demand, and phone service via traditional telephony.
- All in one billing will be done using Billquest.
- There is a long history on this project <http://www.minetfiber.com/>, starting in 1998. They have 5700 residences and a population of 14,000.
- Rates are not worked out yet, but will be competitive triple play.
- They will need to get franchise agreement with cities just like any cable company.

- Fiber will be both aerial and buried.
- It is a cost-based entity, not profit-based.
- When the project started, they did not expect to form an ISP or provide phone services.

### ***Innovative Telecom Projects – John Irwin, City of Rogue River***

The city of Rogue River has been expanding broadband.

- The city has 1500-1800 residents but another 8-10,000 live just outside city.
- They've done strategic planning and broadband assessment.
- The school system has a 1gbps buildout.
- 6 DSLAMs have been deployed by Qwest.
- Charter has the cable system.
- Hunter installed fiber to schools.
- Their issue is how to get out "into trees" more.
- They've formed Rogue River Community Connections, a non-profit as a portal for city and to bring players together. [www.rogueriver.org](http://www.rogueriver.org) was a Project A effort and they host the org.
- They are still learning how to manage their web site – rules, standards.
- Project has been going on for 2-3 years. It's been a messy process so the organization had to be put in place.
- Key was utilizing partnerships and demonstrating demand.

### ***Wireless Mesh Networks – Adam Haas, Sparling***

Adam Haas from Sparling spoke. Sparling is the largest electrical engineering and technical firm in country. They do consulting. Adam talked about projects they have done around the country and products they have used.

- Areas wanting wireless seems to have "young creatives" as residents.
- Some projects: Isla Vista CA, San Mateo PD, Culver City, Chaska MN, Milpitas, Unwired Portland, Okanogum PUD, Coeur D'Alene, Harney County OR, Columbia WA, Spokane, Pleasant Hill CA, and Sarasota FL.
- Some sites of interest were [www.firetide.com](http://www.firetide.com), [www.tropos.com](http://www.tropos.com), [www.thefinalmile.net](http://www.thefinalmile.net), [www.vivato.net](http://www.vivato.net), <http://motorola.canopywireless.com/index.php>,
- Incumbents are threatened by wireless. PA, OH, IN, UT, LA have passed or have pending anti-competition legislation.
- His presentation was very good to explain the basics of wireless, talking about power, interference, distances, throughput.
- Options for economic development include kiosks, public Internet access, retail, and parks & rec.
- Video surveillance, utilities monitoring, parking meters, public safety applications were mentioned.
- Tips: this is an amenity and may not have a quantifiable ROI, use local ISPs. Find grant \$\$, don't overlook marketability of a WiFi Hot Zone (eg Spokane notoriety).

## ***Healthcare Unbound – Darrin Jones, Intel, and Vince Kuraitis, Better Healthcare Technologies LLC***

This was a panel discussion with one of the speakers via videoconference in Boise. Some of the information:

- Center for Aging Services Technology (CAST)  
<http://www.agingtech.org/about.aspx>
- 60+ citizens are 20% of the developed world, and will be 32% by 2050.
- YooMedia is popular in the UK with seniors.
- Germany is building “smart” elder homes.
- France is doing a similar pilot in Lyons and Nice.
- Better home care with technology in US could reduce costs 55% with diabetes, and congestive heart failure.
- Japan and Italy have 1 in 3 as retiree and this brings national productivity issues.
- Electronic Medical Records – there are now 150 companies and growing. Patient care can be improved with EMR.
- RPM (remote patient monitoring) market is fragmented – medical monitors, medical devices, telemedicine, disease management, fitness/wellness, sensors, smart houses.
- The market is expected to \$34 billion by 2015.

### ***Networking with other groups***

Groups of interest I talked to:

<http://www.sottc.org/>

<http://www.eastortel.org/>

The Excellence in Telecommunications Awards were presented on the first day at lunch. This is a good idea for recognizing excellence and cementing relationships.