

WIRELESS NETWORKING IN RURAL AMERICA®

Wireless networks have been accepted by some rural carriers and ignored by others. Now it's finally the time that every company needs to understand how the wireless networks will affect their business and develop a plan for the near future. On March 25th and 26th there will be a special course on the technical and business aspects of wireless networks in rural America.

This course includes every major wireless technology, wireless application, competitor, business opportunity and threat affecting Rural Telcos. Frank Ohrtman developed this course and he's delivering it personally in Kansas City. Frank is the top wireless educator and wireless author in America. He's also the Dean of our WiMAX curriculum at Applied Learning Solutions.

Situation for Rural Carriers:

"A recent Morgan Stanley report indicates the loss of landline business to cellular providers by rural Telcos parallels that of urban providers (7% per annum). Broadband wireless provider Clearwire reports that 70% of their new subscribers had DSL or cable modem services. The current 700 MHz auction is but one of many frequencies suitable for broadband wireless voice and data. That auction creates the potential for five different license holders for any point in the United States."

Learn how Rural Telephone Companies can protect their existing market while actually growing their business in this environment.

Course objectives:

To help the directors of rural carriers develop and deploy winning wireless strategies. Upon successful completion of this course they will be able to:

- Gauge the threat posed to them by competing providers using broadband wireless solutions to encroach on their territory
- Decide on new broadband wireless-based revenue-generating applications they can deploy in their markets
- Be better positioned to work with equipment vendors in selecting the right equipment for their needs
- Execute a new business plan focused on protecting markets while expanding into new revenue generating opportunities

When: March 25th and 26th

Where: Cabela's in Kansas City

Cost: \$795 per student. Discounts available for groups of three or more.

Register: Please e-mail betzel@e-als.com or call Bob at 785-221-4436

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COURSE OUTLINE

I. Introducing “The Three A’s; Access, Applications and Affordability”

II. Access

a. WiMAX

- i. Fixed vs. mobile (802.16d vs. 802.16e)
- ii. Architecture
- iii. Back office
- iv. Network Management Systems
- v. Components
 1. Base stations
 2. Antennas
 3. CPE or subscriber devices

b. Other broadband wireless technologies

- i. HSDPA
- ii. LTE
- iii. UMTS
- iv. EvDO
- v. Canopy
- vi. Wi-Fi
- vii. 802.11n

c. Comparisons with other broadband technologies

- i. Cable modem
- ii. DSL
- iii. Fiber to the home (FTTH)
- iv. Fiber to the premises (FTTP)
- v. Fiber to the curb

d. Objections to WiMAX

- i. QoS
 1. Latency, jitter
 2. Dynamic Bandwidth Allocation
- ii. Security
 1. Encryption schemes (DES, AES)
 2. Authentication processes
- iii. Scalability/bandwidth
 1. Bits/hertz
 2. MIMO
 3. Compression schemes
- iv. Interference mitigation
 1. Adaptive Antenna Systems
 2. Link budget
 3. Dynamic Frequency Selection
 4. Dynamic Bandwidth Allocation

e. WiMAX triple play/quadruple play access issues

f. WiMAX frequencies

- i. Licensed vs. unlicensed
 1. 700 MHz
 2. 3.65 GHz
 3. 2.5 GHz
 4. 5 GHz
 5. AWS
 6. 900 MHz
 7. Software defined radios (SDR)

g. How to get spectrum

- i. Auction
- ii. Sublease
- iii. Unlicensed

h. Wireless backhaul to support WiMAX

- i. In-band and out of band backhaul
- ii. Motorola Orthogon
- iii. Gigabit Ethernet solutions
- iv. Backhaul architectures

III. Applications

a. VoIP

- i. How does VoIP work
- ii. What is the architecture?
- iii. What is a softswitch?
- iv. What is a session border controller?
- v. What is a media gateway?
- vi. What is a hosted solution?
- vii. What is an IP-PBX?
- viii. What is asterisk?
- ix. Overcoming objections to VoIP
 1. Latency
 2. Jitter
 3. Scalability
 4. Costs

b. Video

- i. IPTV
- ii. Mobile TV
- iii. Video on demand (VoD)

c. Converged voice and data

- i. WiMAX as T1/DS3 substitute
- ii. VoIP and data services
- iii. Mobile VoIP and data solutions

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d. Disaster recovery

- i. WiMAX as disaster recovery solution
- ii. WiMAX as data backup solution

e. Industry verticals

- i. WiMAX in energy
- ii. WiMAX in agriculture
- iii. WiMAX in retail
- iv. WiMAX in banking/financial services
- v. WiMAX in healthcare
- vi. WiMAX in education
- vii. WiMAX for municipalities
- viii. WiMAX for small business/enterprise
- ix. WiMAX in transportation
- x. WiMAX in construction

f. Residential quadruple play

- i. Data (WISP play)
- ii. VoIP (fixed wireless voice v. cellular telephone)
- iii. IPTV
- iv. Mobile voice and data
- v. WiMAX as alternative to cellular services
- vi. Residential access devices (CPE)

g. Mobile applications

- i. WiMAX as portable/nomadic/mobile solution

IV. Affordability

- a. What does it cost to do nothing?
- b. OPEX concerns before and after?
- c. CAPEX concerns
- d. Business modeling for WiMAX: how to use the WiMAX Business Modeling Tool
- e. Cost per subscriber
- f. Cost per home passed
- g. RUS – Rural Utility Services funding
- h. USF - Universal Service Fund
- i. eRate – funding for education telecommunications

V. Blue Ocean Strategy in Business Planning

VI. Sales Strategies

VII. Market Penetration Strategies

- a. Crossroads offer (Sprint Nextel)
- b. Xohm
- c. Clearwire
- d. Tower Stream
- e. Fiber Tower

VIII. Competition – What's the Threat?

- a. Landline migration
- b. 700 MHz auction = 5 new competitors for your market
- c. AWS auction + FDD WiMAX = more competitors in your market?

IX. Regulatory Issues Roadmap

- a. New FCC rulings?
- b. More AWS spectrum becoming available
- c. Impact of Auction 73 (700 MHz) on your market
- d. AT&T + Verizon?
- e. Google open architecture + android phones?

X. Conclusion