Wireless ISP Experience I
AmeriSys Inc.

Operators of:

RuralConnection.ca

CoolSpot.ca
Wireless ISP Experience II

Network Architect of:
MRC des Appalaches
17 cities & rural areas
400 Mbps fiber 4 point backbone
Multiple microwave high-capacity backhauls
78 towers, ~600 AP – population ~30,000
900MHz, 2.4GHz, 3.65 GHz, 5.8Ghz
Wireless ISP Experience III

Network Operator:
MRC de Mirabel
Under construction – started Spring 2010
Cable modem backhauls
900MHz, 2.4GHz, 5.8Ghz Wireless service
Wireless ISP Experience IV

Network Operator of:
VivoWave internet Inc.
MRC de Brome-Missisquoi
200 Mbps 2 point fiber backbone
Population ~36,000
900MHz, 2.4GHz, 3.65 GHz, 5.8Ghz
Wireless ISP Experience V

Network Operator of:
RuralConnection.ca
MRC des Laurentides
Cable & bonded DSL backhaul
Population ~15,000
900MHz, 2.4GHz, 5.8Ghz
Wireless ISP Experience VI

Network coverage
Lessons Learned I

• In forested areas
  • 5.8 GHz operation is impossible
  • 3.65 GHz operation is impossible
• 2.4 GHz operation only possible in very sparse vegetation
• 900 MHz operation possible in sparsely forested areas
• Evergreens are electromagnetic brick walls in all bands
• Contrary to manufacturer claims
  • Line of sight is essential for all four bands
• Antenna gain
  • Plays bad tricks in forested areas due to dispersion
  • Main tool in clear line of sight conditions
• Weather conditions
  • Vastly affect propagation through vegetation
Lessons Learned II

• Customers want
  • Extreme reliability (>99.999%)
  • Streaming service support (audio & video)
  • Very low cost professional installation
  • Very low monthly rates
  • Unlimited volumes
  • Small antennas, out of sight

• Customers refuse or are reluctant to
  • Antenna towers/structures including domestic 10m towers
  • Structure fees
Lessons Learned III

- Customers don't understand or don't want to understand
  - Upload/download volumes
  - Difference between Streaming video and TV
    - Cable does not charge volume for TV viewing time
    - Radio does not charge for audio listening time
- Customers have been spoiled and do not want to pay for
  - Equipment WISP installs or leaves on customer premises

- WISPs need a lot more bandwidth, in the VHF band
  - Customers usage trends
    - More speed, more volume, lower costs
    - Heavy apps demand
      - lower over-subscription ratios
      - Reducing number of customer an AP can serve
Lessons Learned IV

• For customers
  • WISP service is a consumption commodity
  • Like phone or cable services

• Computer browsers, mail clients, etc, are either
  • Productive appliances
    • To communicate, socialize and work
  • Toys for enjoyment to entertain them

• Customers increasingly need
  • On-site, “computer appliance” repair personnel
    • i.e. if when they plug it, it doesn't play
      • They want someone else to take care of it.