IP Ethernet in Mobile Backhaul Infrastructure

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Today’s Speaker

Michael Howard
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The Ethernet market is moving

- Providers are investing in **Ethernet equipment**
  - 2009: $22 billion
  - 2014: $32 billion
  - Cumulative **US$149 billion** between 2010 and 2014
  - Routers, CE Switches, Ethernet over SDH/SONET and WDM, Ethernet microwave, EPON, VDSL, EADs

- **$Billions of Ethernet services** revenue worldwide
  - 2009: $21 billion
  - 2014: $39 billion
What is mobile cell site backhaul?

Network between the BTS/NodeBs at a cell site to the BSC/RNC site, whether over air, copper, or fiber.
3 stages of IP/Ethernet backhaul to LTE

IP/Ethernet backhaul solves ARPU-traffic disconnect today and backhaul problem for HSPA today…and LTE tomorrow
Cell site backhaul connections increase quickly

- 2010-2014 new: ~1.4 billion mobile subs, ~1.2 billion mobile broadband subs
  - More base stations, cell site connections (and equipment for each), higher backhaul capacities
- Connections and bandwidth per connection drive equipment spending

Source: Infonetics Research *Mobile Backhaul Equipment and Services*, April 2010

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...And data dramatically increases traffic load

Live network KPI data
Operators: 9 Europe, 4 APAC, 6 Americas
Average Y-Y growth over 500%

Operators increasing capacities via EDGE, EV-DO, HSPA, WiMAX, LTE
…..But flat to slow ARPU changes

Total HSDPA Traffic per Day
Source: Nokia Siemens Networks
Costs drive operators to IP/Ethernet backhaul

- Costs based on backhaul capacities required by technology, and MRCs for services
- Ethernet offers huge drop in cost-per-bit of bandwidth that almost matches the 2x to 10x traffic increases HSPA delivers
- IP/Ethernet naturally fits WiMAX and LTE as well

Source: Infonetics Research Mobile Backhaul Equipment and Services, April 2010
New cell site connections go Ethernet

Worldwide Mobile Backhaul New Connections by Technology

New connections move quickly to mostly IP/Ethernet, whether fiber, copper or air

Source: Infonetics Research Mobile Backhaul Equipment and Services, April 2010

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Mobile backhaul 2010 issues

- Ethernet solidly in operator MBH strategies
  - Majority plan dual/hybrid approach
  - Predict 50 operators will be committed to single IP/Ethernet backhaul (were 25 at end 2009)
  - LTE planning drives more Ethernet
- Mobile broadband growth continues to drive traffic and costs
- Cellsites not fiberized fast enough—opportunity for microwave and copper
- New Ethernet chipsets include MBH functions: 1588v2, SynchE, Eth OAM
Summary

• Backhaul costs are the principal driver, due to traffic growth
• Operators are making the investment to move to the IP/Ethernet backhaul networks
• IP/Ethernet backhaul
  – Solves ARPU-traffic disconnect today
  – Solves backhaul problem for HSPA today
  – …and LTE tomorrow
Thank You

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