Fixed Mobile Convergence

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NMS at a Glance

- Founded in 1983, publicly traded since 1994
- Technology and solutions
- Designed into products deployed in 90 countries
- Major telecom operators, equipment and solution providers rely on NMS
20+ Years of Telecom Innovation

- Open Communications
  - Deploy in any network — TDM to IP
  - Blade to system versatility; superior scalability
- Innovative, future-proof solutions
  - Rapid ROI
- Blue chip partnerships
  - Applications, content, integration, support
Fixed Mobile Convergence (FMC) — What is it?

- One handset
  - Handles mobile and fixed calls
  - Any network — mobile, WiFi, …
  - Avoid mobile charging when in-building

- Single number with common suite of services
  - One voice mailbox, one phone directory…
  - Mobile, fixed, conference room

- New services? Irrespective of location, access technology or terminal device
FMC — Why Now?

- Mobile operators seeking new source of growth
  - No more “new” subscribers in developed markets
  - Enterprise market large, untapped by mobile operators

- Enterprise IT directors looking to save money
  - Employees using mobiles in-building, at mobile rates

- Other …
  - Cable operators seeking the “Quadruple Play”
  - Fixed operators losing subscribers to mobile…
  - Continuing vision of “unified communications”
  - VoIP operators needing to go beyond “digital POTS”
Implementing FMC

- **Wireless “fixed” line services**
  - New (not FMC) in developing nations, mobile, no handoffs
  - UT Starcom & Huawei using softswitch and VoIP/ATM

- **IP-PBX or softswitch with mobile network interface**
  - e.g., Avaya with Moto; Personna (Longboard); NewStep

- **Mobile VoIP technology (pre-IMS)**
  - Bridgeport (a startup) emulates mobile network MSC & VLR

- **Unlicensed Mobile Access (UMA)**
  - GSM & GPRS services over WiFi or Bluetooth

- **IP Multimedia Subsystem (IMS)**
  - 3G vision of future IP-based mobile communications
IP-PBX/Softswitch & Mobile Gateway

- IP-PBX or softswitch is in charge
- Service hands off to mobile network when out of WLAN range
IP-PBX & Softswitch Solutions

- Focus on IT directors’ issues, i.e., save $ 
- Enterprise phone number dominates 
- Mobile network only used when necessary 
  - “Tunnel” through the mobile network 
  - Voice or text messages generated when necessary to connect enterprise calls to remote users 
- No extra value for mobile operator
Unlicensed Mobile Access (UMA)

- Works with today’s 2.5G mobile networks
- Tunnels GSM & GPRS over IP to mobile core network
UMA Features

- Mobile switch controls
- Seamless delivery (roaming and handover) of voice (GSM) and data (GPRS) over wireless IP networks
- Security equivalent to GSM mobile network
- Independent of wireless IP technology
  - e.g., WiFi, Bluetooth
- No impact to operations of cellular RAN
  - e.g., spectrum engineering, cell planning...
- Works with existing & future mobile core network
- UMA specifications turned over to 3GPP
UMA Services

- British Telecom is MVNO using Vodafone network
- BT Fusion based on UMA launched June 2005
- Sales pitch: save $ using landline rates in building
- Dual focus: residential and small & medium enterprise
- Finnish operator Saunalahti to launch with Nokia UMA
IP Multimedia Subsystem (IMS)
IP Multimedia Subsystem (IMS)

- New IP-based mobile core network for 3G evolution
- Uses 3GPP variant of SIP & other IP protocols
- “Intelligent Network” over IP?
- New services drive IMS deployment
  - Push-to-Talk, FMC, IP Centrex
- PTT (PoC) & UMA FMC specs already turned over to 3GPP
- Fluid market, many potential overlaps, substantial hype
IMS Adoption

- Developed by 3GPP for GSM-to-3G evolution
  - Defined in release 5; fully specified in release 6 this year
- Service model now adopted by 3GPP2 for CDMA2000 evolution
  - Some naming variations…
- Service model also adopted by ETSI TISPAN for fixed networks
- CableLabs & ITU now on board
- But IMS specifications still evolving
- Rollouts next 2 to 3 years, then many years of evolution
IMS Advantages vs. “Free VoIP”

- QoS guarantees
- Charging for services
  - Control and bill for IP sessions and thus for applications and content
- Standard architecture expected to facilitate deployment of new applications, by operators
  - Expected to improve on the Intelligent Network
- Focused on “walled garden;” give operators flexibility to open when and how they choose
Carrier Interest in New Services

Operator Interest per VDC

- FMC
- Music Streaming
- IP Centrex
- Gaming
- Video Streaming
- Data Apps
- Push-to-Talk
- Contact Ctr
- Conferencing
- Multimedia Msg'g

0% 20% 40% 60% 80% 100%
Potential Disruption

- Wireless broadband access lags fixed broadband access (DSL, cable modem, FTTH), by “N” years
  - Limited capacity, limited competition, walled gardens
  - But it’s improving — 3G, WiFi, 4G, WiMAX…

- VoIP service providers already showing the path
  - Death of distance
  - Value in presence/availability and communication alternatives (text, VM…)
  - Skype already dominates US VoIP minutes

- Competitive threat to IMS-based mobile operators likely 5+ years off, but keep eyes open…
FMC — What Do Users Want?

- One number, one voice mailbox, one directory
  - Fixed home # still useful — “May I borrow a cup of sugar?”

- Good indoor coverage

- Simplicity
  - It just works; bundled price — no surprises

- Lower costs
  - Than separate fixed and mobile accounts
  - Avoid long distance & international charges
Mobile Operator’s FMC Advantage

- Competitive experience
- Established brand
- Established source of personal telephony
- Mobile operators in best position with consumers
- Mobile operators in strong position with enterprises
Selling Applications and Equipment

- To established mobile or fixed operators
  - Sell IMS roadmap
  - Deliver applications with pre-IMS VoIP and IN technology

- To VoIP operators (& other new entrants)
  - Mention IMS roadmap
  - Focus on today’s VoIP technology
  - Highlight IN capabilities (for interface to traditional PSTN)
Telecom Opportunity

- Internet plus mobile phones driving global economic, social, and political benefits
- Underlying technologies improving exponentially
- 6.5 B people, 2.0 B mobile phones
- Existing networks will need FMC upgrade

Enormous opportunity ahead!

Have fun and make money!
Upcoming Events

- **Webinars**
  - December 13: Migrating to Second Generation CG Series Boards
  - January 10: Simplifying SS7 Programming for Enhanced Intelligent Network Services
  - February 7: Implementing 3G Video Services Using Video Gateways

- **Developer Conferences**
  - Bangkok, Thailand - Banyan Tree Bangkok – December 7-8
  - Wrap-up of Munich, Boston and details on Bangkok at [www.nmscommunications.com/devcon05](http://www.nmscommunications.com/devcon05)