Cisco Expo 2006

Fixed Mobile Convergence
Business Track

Bo Finnemann
Market Perspective
Why FMC is causing a "Perfect Storm"

**HANDSETS**
Multimode devices becoming reality
Open OS changes the ownership model

**SIP & IMS**
Move to Create Platform for IP-Based Services
Session and service setup and control over IP

**VoIP**
Minutes continue to move away from fixed networks and on to broadband and mobile networks and eventually “peer-to-peer”

**WLAN/UMA**
Momentum Continues in Enterprise, Homes and Hotspots
Converged Device

A single endpoint device that uses multiple radio networks

Source: Cisco IBSG Presentations
SP’s are challenged
Transformation of Service Provider Business

• Fixed line operators experience declining revenue from traditional services
  
  Minutes continue to move away from fixed networks and on to broadband and mobile networks

  Price pressure on flat rate BB lines

• Mobile operators experience price pressure on voice minutes, slow adoption of data services, growth rates slowing down and churn

• Challengers (New SP’s, ISP’s, Utilities) expanding their service portfolio (triple play) to grow customer base

• Content Providers deliver service over BB (Skype, Yahoo, MSN, Google........)

• Disruption!
Convergence is driven by the operator’s need to Maintain the Customer Relationship

- Mitigate revenue erosion of wireline public telephone operator (PTO) and attempt to slow revenue loss and customer churn
- Maintain billing relationship by providing multiple voice (and data) products in a single customer invoice
- Delivery of new services on the converged product
- Potentially increase average revenue per customer
- If regulation (eventually) requires unbundling;

Convergence becomes an opportunity to sell feature rich wholesale products at a premium

Enterprises need increased flexibility and choice promised by convergence

- Enterprises expect operators to meet their directional requirements
  
  Support their movement to add mobility to all applications
  
  Providing lower monthly mobile phone costs through bundling with other telecoms
  
  Allowing use of a wide variety of access technology choices, including 802.11, WiMAX, etc.

- Virtualization of resources
What is FMC?
What is Fixed Mobile Convergence (FMC)?

“The delivery of Telecommunications services to customers through the utilization of the resources and infrastructure of both fixed and mobile operators.

The services delivered can include data, voice, video, and other value-added services as defined and delivered by the operator.

The customer purchases a service and the use of FMC to deliver the service is not a primary concern of the customer.”

Consolidated definition
Cisco, META Group, Heavy Reading, and others
Analysts see Three Elements of Fixed Mobile Convergence

• Converged Services
  Voice, messaging, presence, multimedia, VPN, corporate apps, etc.
  For individuals, households, small business, enterprise (including business, road warriors, students, etc)

• Converged Devices
  Phones, smartphones, PDAs, laptops, etc.

• Converged Networks
  Access and core
  Incumbent wireline, incumbent wireless, competitive wireline, alternative wireless, virtual network operators, ISPs/BSPs

True Convergence is the holy grail

**For the Subscriber**
- “Any service, Anywhere, Anytime”

**For the Enterprise**
- Consistent and quality user experience
- Single number / single voicemail
- Lower cost

**For the Service Provider**
- Consistent user experience
- Stronger customer relationship
- Opportunity to optimize network investment based upon customer demand and technological capabilities
- Changes carrier business model
  - Cellular
  - WLAN
  - Roaming on existing 3rd party networks
- Most investment intensive
Fixed-Mobile Convergence: Marriage or Transformation

**Marriage**
...of necessity?
...of equals?
...of convenience?

**Transformation**
...of the telecoms industry
...of basic business models
...of the competitive environment
...of service delivery
...of customer expectations

Some Application Examples
Single Number Reach (SNR)

Both Mobile Phone and IP Phone rings

Mobile is picked up

IP Phone stops ringing

User goes to office ......

......... and transfers call to IP Phone

Single Voice Mail Box

Mobile Phone is part of PBX number plan
Dual Mode Phone

GSM / 3G

Call Manager

802.11 WLAN

Nokia E60
Nokia E60 Dual Mode (GSM - 3G – CDMA - WiFi)
Call Manager features on a Cell Phone!

Cisco Call Control

Mobile operator Network

Fixed Line operator Network

IP PBX Features

Log in and out of VoIP system can be automatic or manual.

Unattended transfer...to person with an ongoing call without waiting for an answer

Indicator for new message in VoIP voice mailbox

Indication when WLAN signal is weak and VoIP is ready

“Do Not Disturb” profile
Service Convergence

Service Integration

Seamless Mobility

Handover between WLAN and cellular Voice and Data Services
Dual Mode Terminals

Bundled Service

Single Bill
Voice+Data+Mobile
Bundle Discounts
Seperate Terminals

Data Service Roaming
GPRS+WLAN
Service Roaming
Dual Mode Terminals

Single Number Reach
One Number
One Mailbox
One Directory

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One Number
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The Value for the Enterprise

Convenience
- Single Number, Single Mailbox, Single Directory
- Integrated Device for Voice and Enterprise Applications
- Web based Service Control

Productivity

Quality
- Better Voice Quality through Fixed Network
- No in Building Coverage Issues
- High Bandwidth Mobile Date through WLAN

Cost
- Better Voice Quality through Fixed Network
- No in Building Coverage Issues
- High Bandwidth Mobile Date through WLAN
End User Perspective

**Consumer**

**Value Proposition to Consumer**

**Broadband for the Home**
Wireless Internet at Home
Save on Mobile Calls!
One Phone for all calls

**Service**

**Required Components**
- Dual Mode Handset
- Home WLAN Router and Broadband connection

**How it works**
- One Number for fixed and Mobile
- VoIP Calls when at home
- Bundle for Broadband, Mobile service
- One Mailbox, one Directory for all calls
Mobile Phone as "Remote Control" Access to BB SP portal

- Triple Play Fixed Mobile Convergence
- Use mobile phone to access BB SP Portal

  Content optimized for mobile phone

- Order movies from anywhere
- Pay via mobile phone
- Choose "download to set-top box"
- Or choose download to phone and watch the movie on the phone
Seamless Internet Convergence
SwissCom Mobile Unlimited

Unlimited Data Manager

- Seamless Data Roaming with tri-mode UMTS, GSM and Wi-Fi networks (PC card by Option of Belgium)
- Automatically ensures that you are using the fastest available network.
- Easy to install and operating it is intuitive:
  - Prioritized automatic network selection
  - Configure co-operation with e-mail clients and web browsers
  - Set up a VPN connection to your company network
  - Full control over the current data volumes used and can keep track of costs

Technology: Cisco Mobile Exchange (CMX)
Cisco Mobile IP and EAP SIM
Users Really Need a Mobile Solution!
The Ultimate FMC
Cisco’s 3–5 Year Technology Vision

The Intelligent Information Network: A Global Systems Approach

Network Infrastructure

GLOBAL SYSTEMS

Resources and Applications

INTEGRATED APPLICATIONS

Application-Enhanced Networking

PHASE 3

Virtualized Networking Resources

PHASE 2

The Intelligent Movement of Data / Voice / Video Across a System of Networks

PHASE 1

Time
Cisco IP NGN Architecture
Achieving a Whole Greater Than the Sum of the Parts

INTELLIGENT NETWORKING

Service Exchange

Open Framework for Enabling ‘Triple Play on the Move’ (Data, Voice, Video, Mobility)

Application Layer
- Gaming
- Data Center
- Presence-Based Telephony
- Web Services
- Mobile Apps
- IP Contact Center

Service Layer
- Customer Element
- Access/Aggregation
- Intelligent Edge
- Multiservice Core

Network Layer
- Transport

Operational Layer

Intelligent Edge
Customer Element
Access/Aggregation
Intelligent Edge
Multiservice Core
Transport
• Fixed / Mobile Convergence is part of the ITU Definition of Next Generation Networks (NGN)

• 3GPP specifies the 3G Mobile Network, which also will be an enabler for FMC

• TISPAN (Telecommunication and Internet converged Services and Protocols for Advanced Networking) is an ETSI group which standardizes the converged NGN for fixed networks

  Has adopted the IMS architecture from 3GPP

• CableLabs specifies NGN for the Cable Industry in the PacketCable MultiMedia specifications and the PacketCable 2.0 specifications

  Also CableLabs has adopted the IMS architecture
Summary
Summary: What is Convergence?

- Converged core, converged devices, converged services
- Voice, data and everything else, all IP-based
  “Any service anywhere”
- Fixed wireline operators need convergence to slow churn to mobile and broadband operators
- Mobile operators might utilize fixed infrastructure to improve service delivery
- Convergence is in early stages now, for some voice and data applications for some operators