Embracing Change: The Advent of Ubiquitous Networks

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Leslie J. Martinkovics
Director
International Public Policy & Regulatory Affairs
A Century of Transformation

- Verizon has been in business for over 100 years
- Owns and operates facilities-based networks
- Undergoing a fundamental shift through convergence and integration
A Century of Transformation

- Driving toward ubiquitous networks:
  - Wireline phone
  - Wireless phone
  - Personal computers
Today’s Communication Environment

Wireline Phone
- Telephony
- Messaging
- Directory
- Alerts
- Easy Setup and Operation
- Service Quality
- Service Support

Wireless Phone
- Telephony
- Messaging
- Directory
- Alerts
- Easy Setup and Operation
- Service Quality
- Service Support

PC
- Instant Messaging
- Chat
- Web Conferencing
- Collaboration
- E-mail
- Directory
- Alerts
- Easy Setup and Operation
- Service Quality
- Service Support
The Present

- Approximately 100 million Americans are connected to a Verizon network at some point each and every day
- 46 million of our telephone lines are equipped with DSL
- More than 36 million people use Verizon wireless
- Serve more than 7 million small businesses
Transformation is Underway

Source: Instat MDR, ‘Cutting the Cord’, February 2004
Access Line Decline

**Residence Line Loss**

- 2Q’03: (387K)
- 3Q’03: (417K)
- 4Q’03: (379K)
- 1Q’04: (314K)

**Net Adds**

- 2Q’03: (302K)
- 3Q’03: (231K)
- 4Q’03: (205K)
- 1Q’04: 30K

**Business Line Loss**

- 2Q’03: (324K)
- 3Q’03: (175K)
- 4Q’03: (224K)
- 1Q’04: (184K)

**UNE-P Adds**

- 2Q’03: 518K
- 3Q’03: 479K
- 4Q’03: 450K
- 1Q’04: 508K
Cable Telephony Growth

Source: Frost & Sullivan, ‘North American IP Cable – Is Cable Able?’, January 2004
Broadband Continues to Grow Rapidly
Replacing Dial-Up Internet Access

Online Households

Source: Smith Barney, “Cable MSOs Leaving A Lot of Food on the Table”, April 28, 2004
Broadband Connections offer a platform for many competitive telephone services...

- Assign or port number
- Emulate dial tone
- Provide full feature set +

Plug into broadband router (e.g.) with inexpensive adapter

Traverse customer’s broadband connection

Interconnect with the PSTN through gateways
• Successful competitor to cable modem service
• Uses existing copper wire outside plant
• Internet access while using your phone
• Added 1.5 million new subscribers in 2004
VoiceWing Consumer Broadband VoIP
Available over any broadband Internet Connection!
Lighting Up The Future: Fiber-To-The-Premises (FTTP)

- FiOS services: super fast connectivity
- **Downstream / upstream**
  - 5 mbps/2 mbps
    - Applications: online research, file transfers, telecommuting, music downloads, photo sharing
  - 15 mbps/2 mbps
    - Applications: video conferencing, interactive gaming, music and video downloads
  - 30 mbps/5 mbps
    - Applications: web hosting, music and video sharing, data backups, large file sharing
- Currently deploying in 13 states
- Planning to pass 4 million homes by year-end 2005
- FiOS services
  - Video
    - Standard and premium channels
    - HDTV
    - Video-on-demand
    - Approximately 300 digital channels
  - Internet access
    - Speed tiers up to 5, 15 or 30 mbps
  - Telephone service
    - Customers can keep existing numbers and services
Platform to Deliver Next Generation Services

Basic & Advanced TV Services
- Broadcast channels
- Premium channels
- PPV
- VOD
- HDTV
- PVR

Basic & Advanced Data Services
- Broadband data
- Symmetrical services
- Customized bandwidth
- Data/video convergence
- Home networking/Managed Services

Complete Voice Services
- Local
- Long distance
- Features

FTTP Enabled Customers

Plus Wireless Bundling
Transforming Wireless into Broadband Multimedia Services

- **Consumer Data Devices**
  - More PC cards, modem solutions, E-mail devices
  - Handsets/devices for video, music and content
  - 1X: 100% of phones sold; 63% of base

- **Picture Messaging**
  - More models, more pixels
  - Video messaging

- **E-Mail, SMS**
  - Color Blackberry and Treo
  - IM: all 3 major IM services
  - 100% of handsets sold are text capable

- **Get it Now**
  - More handsets, more apps
  - 400 unique downloadable apps

- **Push to Talk**
  - Expanded lineup

- **Global Phone**
Wireless Broadband Multimedia

- In 2003, launched third generation wireless broadband network:
- EV-DO (Evolution-Data Optimized)
- February 1, 2005, launched video-on-demand service: V-Cast
  - 32 markets
  - Available to 75 million people / expand to 150 million by year-end 2005
  - Committing $1 billion in 2005-2006 for nationwide rollout
Wireless Broadband Multimedia

- Average download speeds: 300 – 500 kbps
  - Streaming video (up to 5 minutes)
  - Advanced messaging, imaging and data transfer
  - Megapixel camera and video functions

- Transmission speeds: capable of bursts up to 2.0 bps

- Recently launched mobile television services
  - One-minute “mobisodes”
  - Delivering at least 15 frames per second
Integrated Communications Services ➔ Iobi

- Telephony
- Messaging
- Directory
- Alerts
- Service Quality
- Service Support
- Easy Setup and Operation
Iobi enables users to manage communications from their wireline and wireless phones, computers and PDAs.

- Links devices into one seamless personal communications network:
  - Call and voice-mail management
    - Users decide how, where and if to receive calls as they come in
    - Notification on computer or mobile device, with ability to choose and prioritize
• Display of incoming calls
  ▪ Including caller ID information on computer or mobile device

• Programmable call forwarding
  ▪ Users can schedule when and where calls will be forwarded

• Synchronize calendar and address book data.
  ▪ Over multiple devices
Verizon Ubiquitous Networks Vision

- Link to devices – anywhere, anytime
  - Allow users to send or receive any information to or from any device at any time
  - Permit users to tap the intelligence of the network and make communication simple and ubiquitous
Enable a new generation of flexible, highly-reliable services on our infrastructure

- Health diagnosis/monitoring
- Interactive learning
- Inventory / RFID
- Multi-player games
- Safety / location-based technologies
- Voice-over-IP
- Video messaging
- Virtual private networks
Verizon Ubiquitous Networks Vision

- Increasingly powerful chips are fueling multimedia developments

- Dynamic, adaptable, innovative applications using converged networks and services on a global scale

- This, in turn, is driving
  - Digital content creation
  - Ubiquitous electronics and improved power supplies
  - More effective utilization of frequency spectrum and policies which promote technological innovation
  - Robust R&D in both public and private sectors
Verizon Ubiquitous Networks Vision

- Key issues for further consideration
  - Security
  - Authentication
  - Billing
  - Privacy / personal information

- Final thought: Ubiquitous networks involve not only changes in technology, but also of the entire social systems comprising legal frameworks, usage practices and value judgments.
Thank You!

Leslie.j.martinkovics@verizon.com