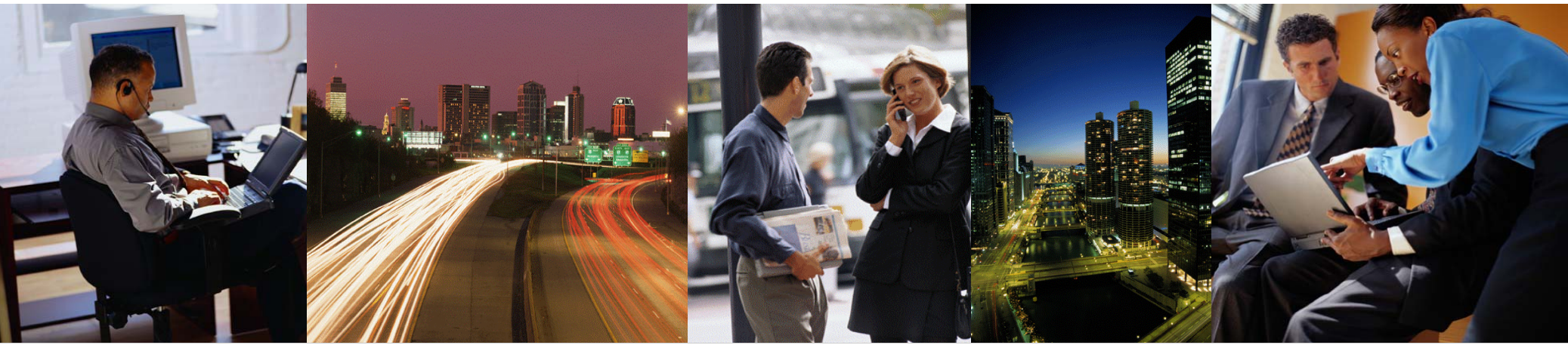
Convergence Strategies



John A. Marinho
Vice President
Mobility Offer Management

December 12, 2003

Lucent Technologies
Bell Labs Innovations

Overview

Lucent Technologies
Bell Labs Innovations



- Market Dynamics
- Convergence Opportunity
  - Service Provider
  - End User
- Network Architecture
- Help Operators Capitalize Opportunity

Market Dynamics

Lucent Technologies
Bell Labs Innovations

Technology:
- CDMA2000® & UMTS Advances
- Softswitch Technology
- VoIP
- WiFi/802.xx
- Premises Technology alternatives

Competitive Forces
New Players

Regulatory Changes:
- Local Number Portability (LNP)
- Do Not Call List

Convergence - Provision of wireline and wireless Bundles
Service transparency and Enhanced Voice and Data applications



Convergence Creates New Opportunities

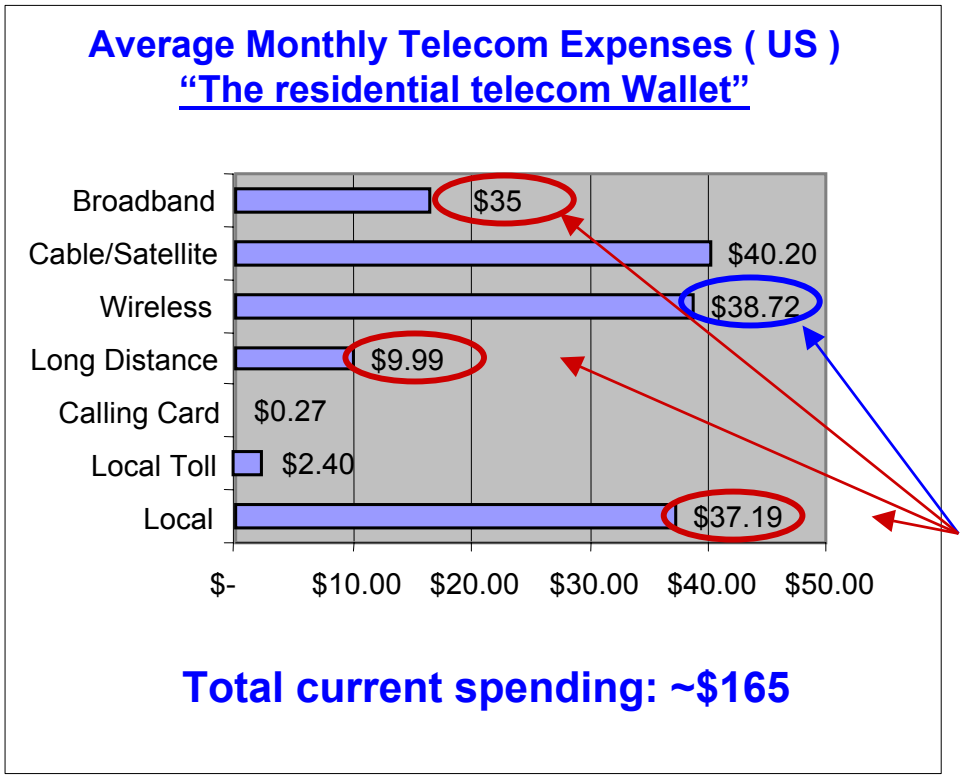


For End-User(s):
- New services bundles and devices
- Access a wider array of services
- Consolidate to single bill
- Better Customer Care
- Greater ease of use
- Device/access alternatives

For Operators:
- Enhance differentiation by creating Sticky services and offers
- Increase market share and ARPU
- Reduce churn

Opportunity: Residential Telecom Wallet

Lucent Technologies
Bell Labs Innovations



TNS Telecoms Industry Tracking Data, April 2003
(updated to reflect typical broadband spending)

Market Trends

- Several vendors planning to add 802.11 to Cell Phones
- 802.11e (QoS) standardization underway
  - » Will lead to 802.11 voice calls in the home / office

Market Needs

- Single device for calls in / away from the home / office
- Parity of wireless and wireline features

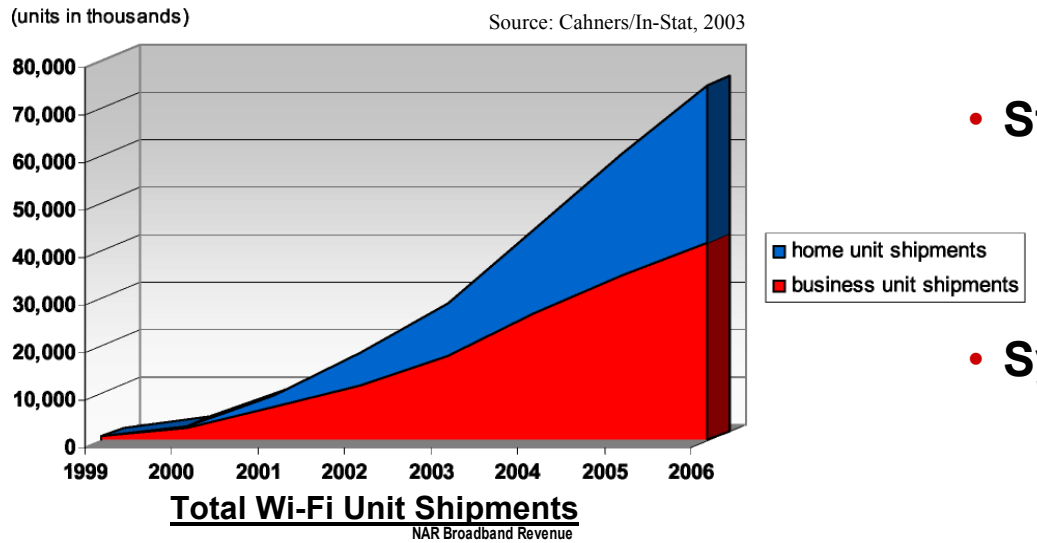
Market opportunity

- Opportunity exists to displace part of existing monthly spending
- Similar opportunities exist in enterprise spending
- Converged networks can position one operator providing all voice and data services

Opportunities exist for converged networks to serve the needs of today's wireless and wireline subscribers

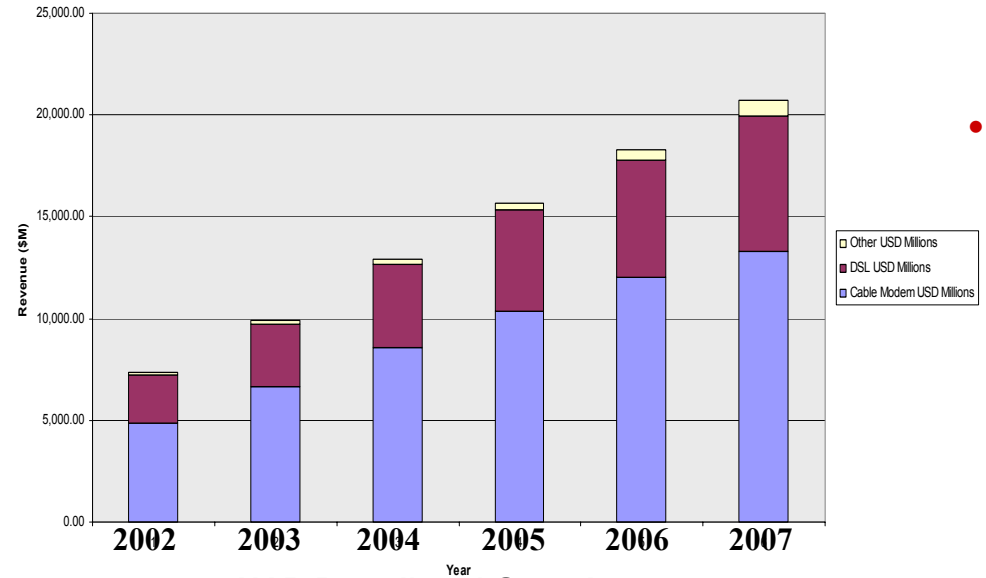
Home Networking and Broadband Will Grow Synergistically

Lucent Technologies
Bell Labs Innovations



Total Wi-Fi Unit Shipments

NAR Broadband Revenue



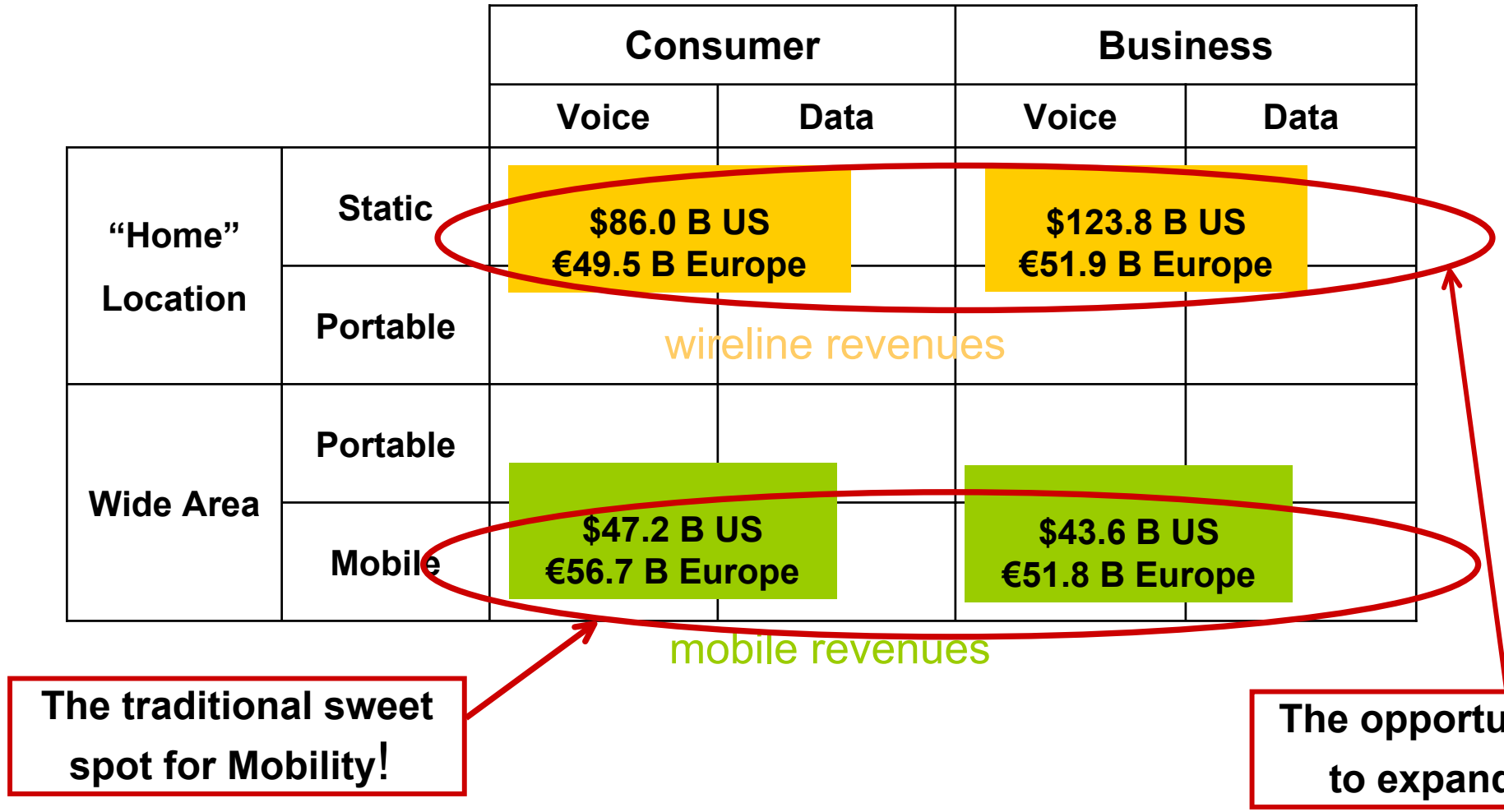
NAR Broadband Growth

Source: Yankee Group, 2003

- **Strong Home Networking growth projected**
  - Home networking growth dominated by Wi-Fi
  - Broadband (DSL/ cable) growth of 23%: 2002-07
- **Synergies support this growth**
  - Key application drivers shared between broadband and home networking applications
  - Future applications for home-networks require increasing bandwidth and drive broadband need
- **Home Wi-Fi with Mobility provides added value to broadband**
  - Wi-Fi and broadband bundles can increase broadband penetration and revenue
  - Lehman Brothers projects 5 to 6% penetration increase and 7% revenue enhancement.

Addressable Market

Lucent Technologies
Bell Labs Innovations



Convergence creates a unique opportunity to expand the sweet spot

Source: 2003 revenue forecasts, Pyramid Research, Sept 2003

Consumer Voice Segment: Key Trends

Lucent Technologies
Bell Labs Innovations

- **Wireline Substitution**
  - Second (Teen) Line substitution by mobile
  - Second (Dial-up) Line substitution by cable/DSL
- **Multimode (WiFi, 3G) Devices**
  - Motorola and NEC America
  - Qualcomm
  - Intel
  - Cisco
  - Microsoft

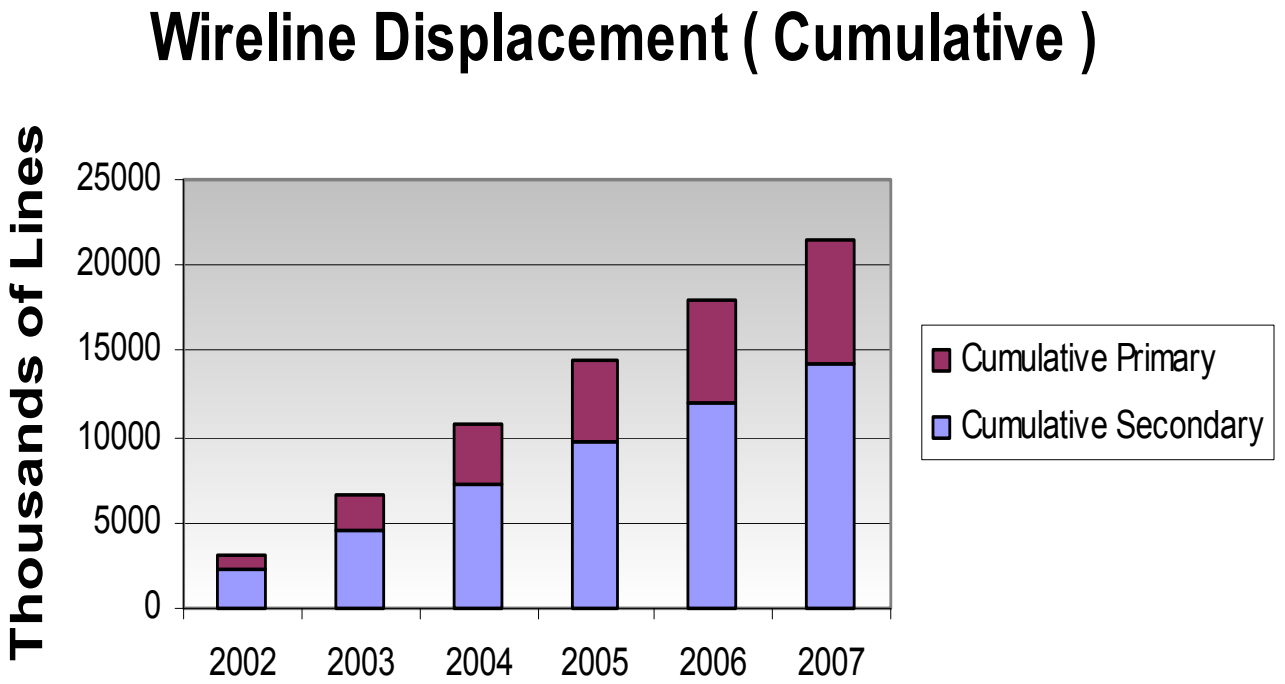


- **Service/Offer/Minute Bundling**

Example:

- Verizon Veriations and Verizon ONE
- Sprint PCS
  - Unlimited local and nationwide calling (from 2 phones) @ $75/month





Mobile Operator in Best Position to "Cut the Cord"

Lucent Technologies
Bell Labs Innovations

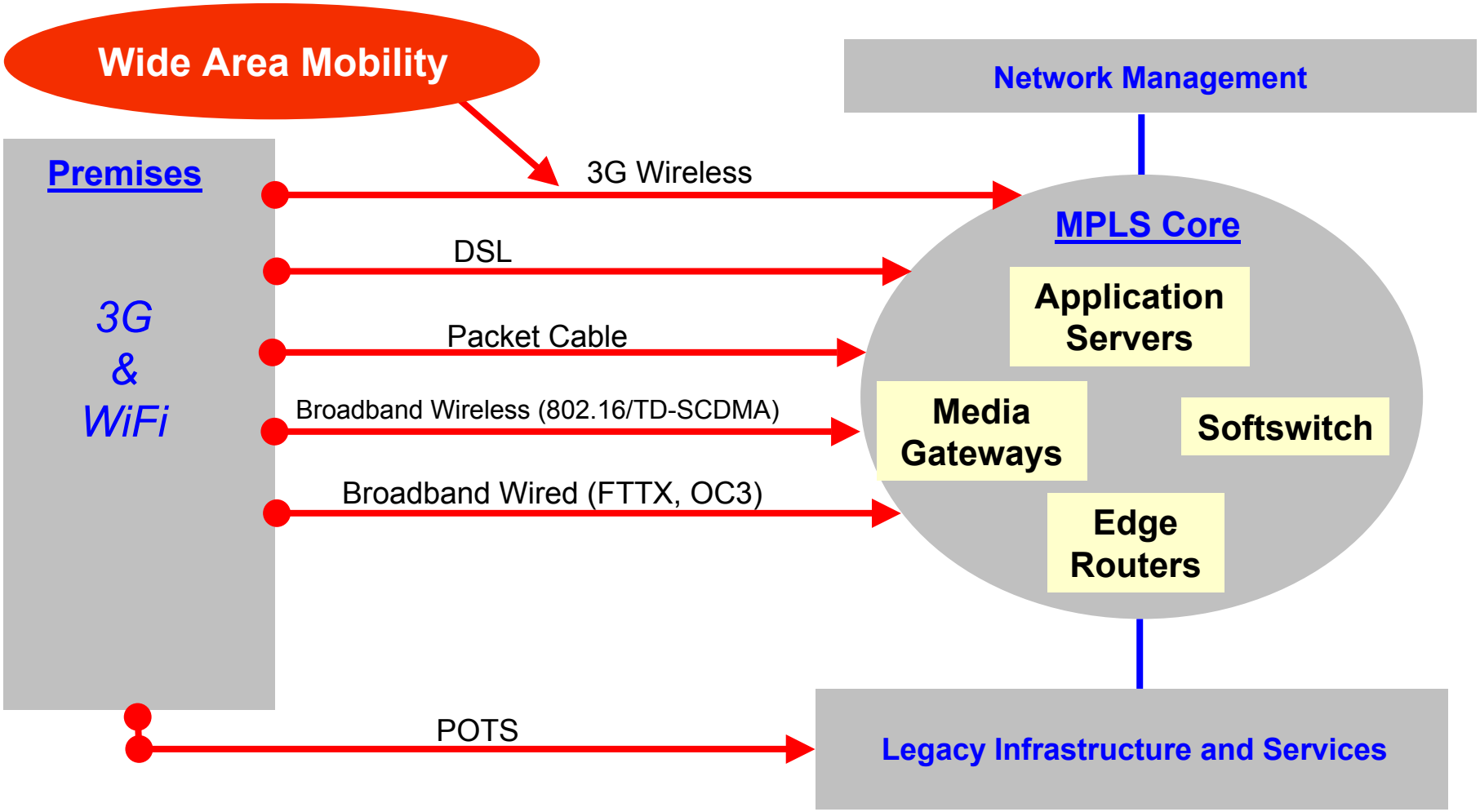


- Leverage nationwide networks to support geographic coverage "Outside" the Premises
- Able to deliver geographic coverage "Inside" the Premises
  - WiFi - Voice Services and Data
- Deliver Mobility services in Transparent and Seamless manner via wireless experience
  - "Location & Presence"
  - Mobility Call Control
- Capitalize on Regulatory Changes
  - Number Portability
  - Resell VoIP Packet Access with WiFi

Mobile operators are in best position to provide bundled Voice and Data offer to the market

Converged Network Model

Lucent Technologies
Bell Labs Innovations



***3G & WiFi* "Cuts-the-Cord" for Converged HSD and Voice Services**

Convergence Direction: Next Generation Services Bundling

Lucent Technologies
Bell Labs Innovations





- **Integrated voice and data service**
  - Gives equivalent capabilities to existing office communications systems, whether in the office or traveling on the road.
- **Enhanced by a more visual user interface**
  - Real time menu choices on handling calls and specifying importance
- **Integration of multi-media messaging and calling**
  - Allows users to choose voice, text, image, files, or video to most efficiently express their concepts and collaborate remotely.
- **View accessibility and status of other work group members**
  - Graphical presence icons that can initiate communications.

New Types Of Services

Lucent Technologies
Bell Labs Innovations



- New family of intelligent, interactive,location-based broadband services
- Anytime, anywhere access to messages, contact lists, calendars and conferencing
- Mobile access to speech-enabled Web services
- Live video to handheld devices



Operators Capitalize on Convergence 3G IMS Infrastructure

Lucent Technologies
Bell Labs Innovations

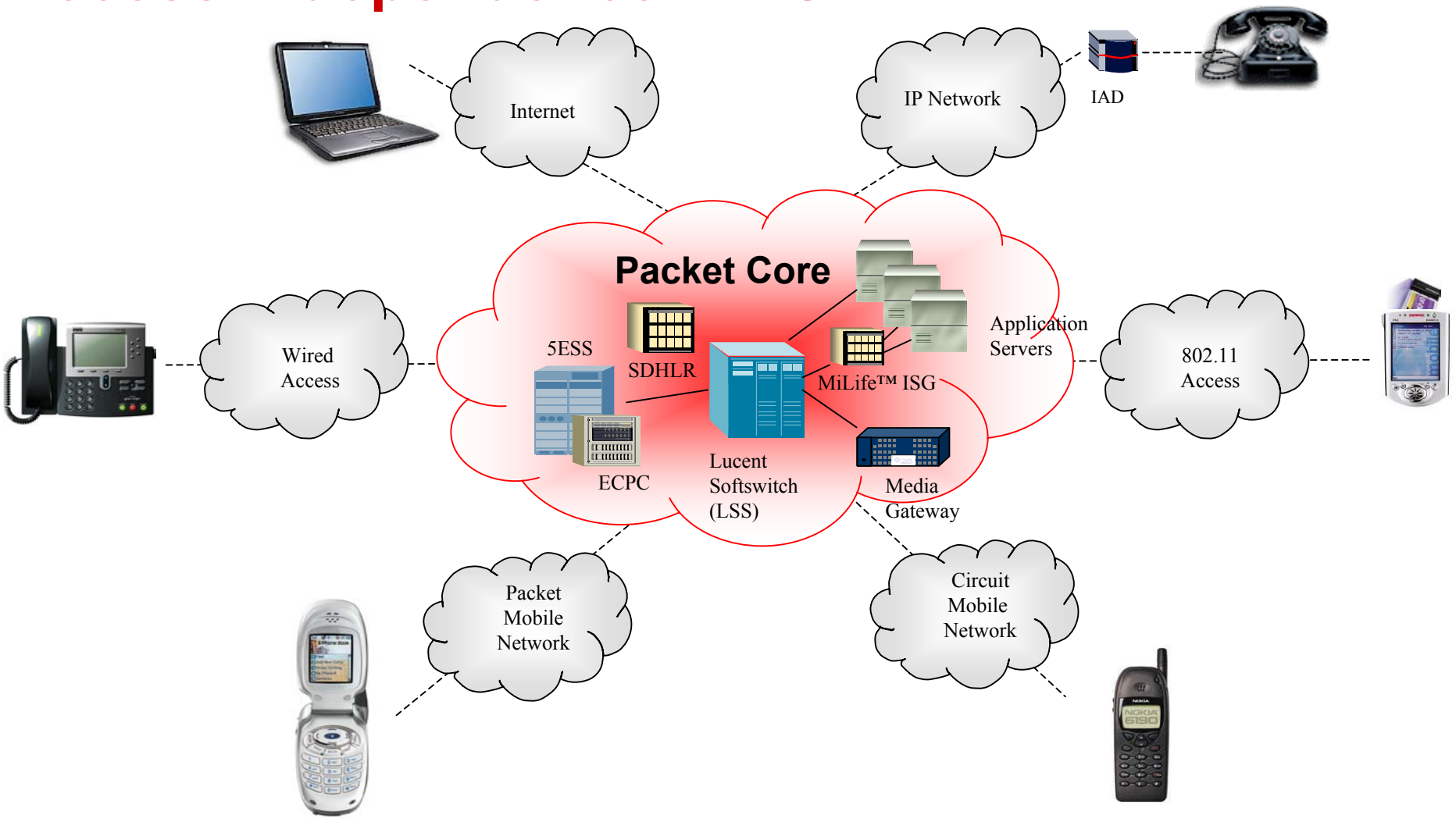


- Convergence will lead to significant increases in network traffic
- Creates network capacity demands
  - Capital Efficient Networks – Spectrum, Capacity, Performance
    - 3G Spread Spectrum is ideal
  - Network Core: Flexible to enable Access Independence
  - IMS Architectures – SoftSwitch, Media Gateway, MPLS
  - Graceful Circuit to Packet evolution needed
  - Handset/Device Providers – WiFi & Mobility

Lucent's Circuit to Packet Architecture - IMS Network Architecture, and 3G Access Network provide the capabilities to support Convergence

Convergence Core: Access Independence - IMS

Lucent Technologies
Bell Labs Innovations



IMS allows the wireless operator to be a converged *Service* Provider; Access Independent Service Architecture

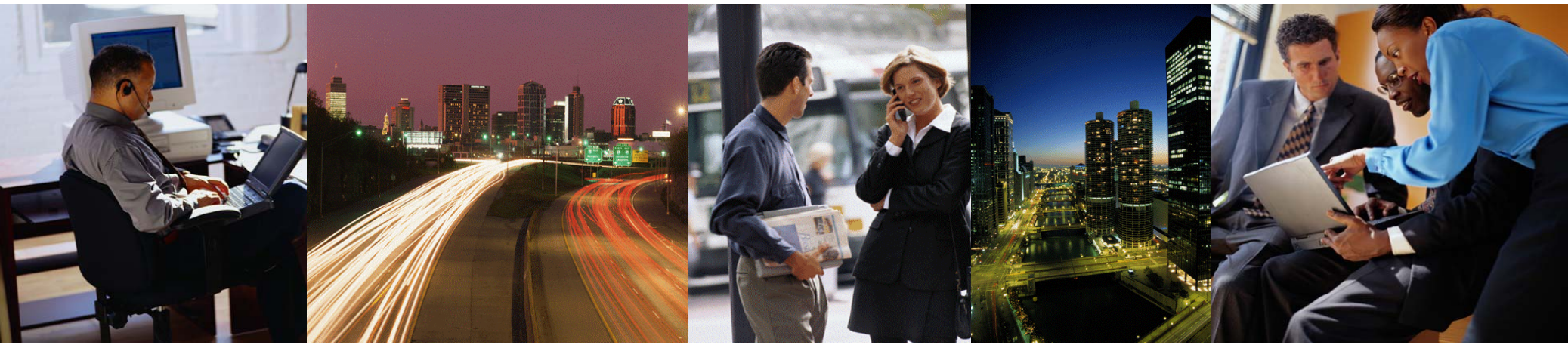
Summary

Lucent Technologies
Bell Labs Innovations



- Market opportunity for operators - “Residential Telecom Wallet”
- Convergence is happening now, and will continue to grow
- Convergence places unique demands on network
- Lucent helps operators capitalize on Convergence
  - Circuit to Packet Platform supports phased migration to All-IP Networks driven by operator economics
  - IMS Architecture enables new services such as Location Based Services and Push to Speak
  - Best of breed partnerships
  - Lucent Worldwide Services

Convergence Strategies



John A. Marinho
Vice President
Mobility Offer Management

December 12, 2003

Lucent Technologies
Bell Labs Innovations