

Trends in Communications Technologies

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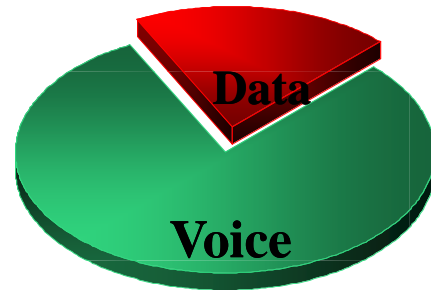
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TELECOM TRENDS

- **SERVICES**
- **BUSINESS MODEL**
- **SERVICE CONVERGENCE**
- **NETWORK CONVERGENCE**
- **TECHNOLOGY ROADMAP**
- **SUCCESS STORIES**

SERVICES



- **Broadband data service**

- **leased line service.**

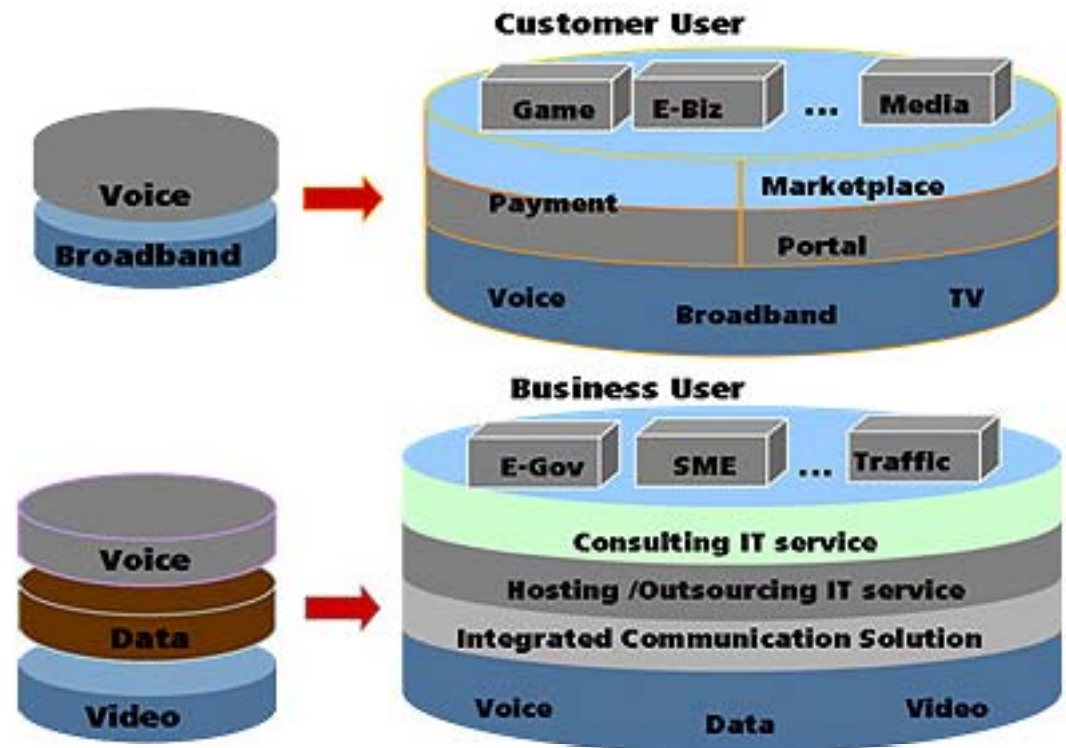
Terrestrial TV, cable TV

SERVICE INTERGRATION – FULL CUSTOMER EXPERIENCE

BUSINESS MODEL

OPPORTUNITIES IN ICT

- Provide ICT services for business users
- Provide multi-play for individual users



CONSUMER MARKET

- **Beyond traditional services such as voice and broadband**
- **Offer IPTV, portal, payment, marketplace services**

PARTNERSHIPS

- **Media groups**
- **School**
- **Banks**
- **Content providers**

OPERATORS

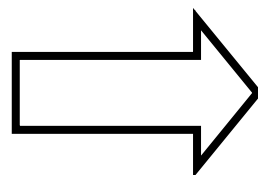
- **Network service provider**
 - › Communication minutes
- **Integrated service provider**
 - › Consumer spending

BUSINESS MARKET

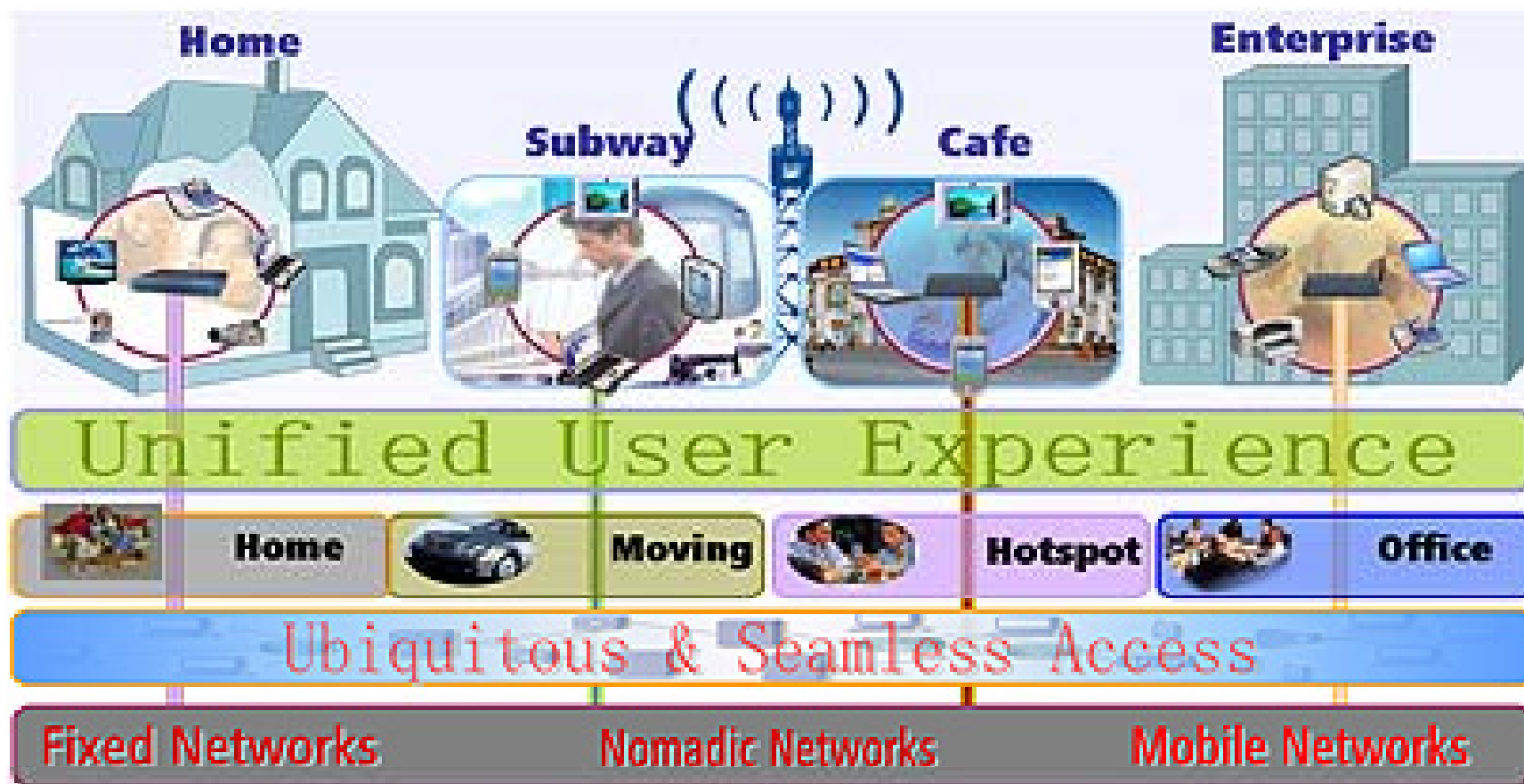
- **Service products to service solutions – especially IT services**
- **Understand customer's business process – offer right solutions**
- **Product provider – solution provider**
- **Leased lines to businesses - Optimize business process**

SERVICE CONVERGENCE

- Meet customer requirements
- Maintain lead in competitive markets



Ubiquitous networks and services in ICT society



SERVICE CONVERGENCE

- **Provide users with unified experience**
- **Replicate various scenarios such as**
 - › home,
 - › on the move,
 - › hotspot,
 - › office

ANYTIME, ANYWHERE, VIA ANY TERMINAL

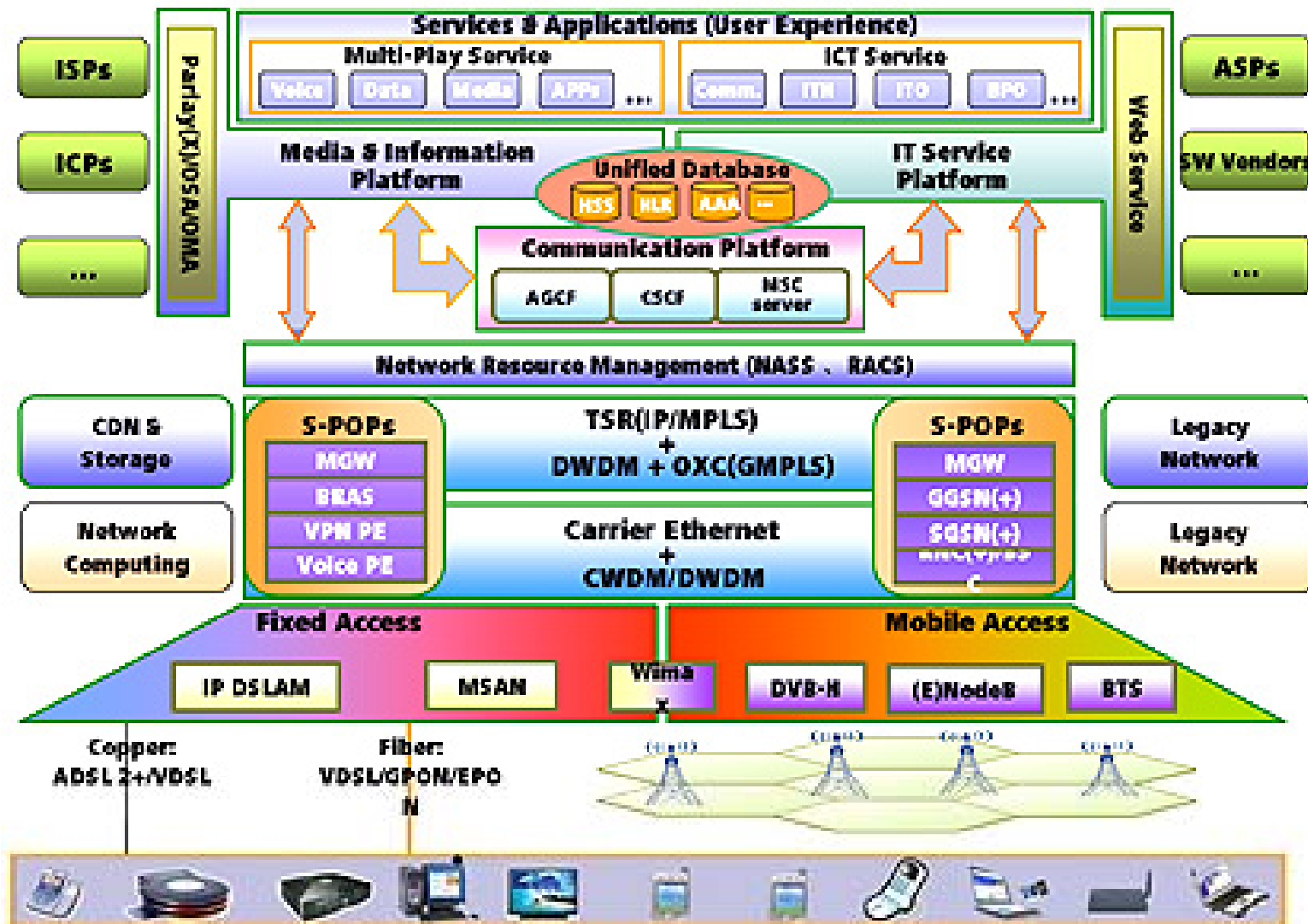
NETWORK CONVERGENCE

NETWORK DIVIDED INTO:

- **User environment**
- **Access**
- **Transport**
- **BOSS**
- **Service network**

KEY TRENDS - ALL-IP, FMC

Customer experience – same via any terminal, any location any time.



FIXED-MOBILE CONVERGENCE

- **INDUSTRY CONVERGENCE**

- › Telecoms
- › IT
- › Content and media
- › Consumer electronics

- **SERVICE CONVERGENCE**

- › Voice
- › Data
- › Multimedia
- › Content

- **NETWORK CONVERGENCE**

- › Unified service network
- › Unified control network
- › Unified PS bearing network
- › Unified BOSS

- **CONVERGENCE OF TERMINALS**

- › Dual mode terminals
- › Intelligent terminals

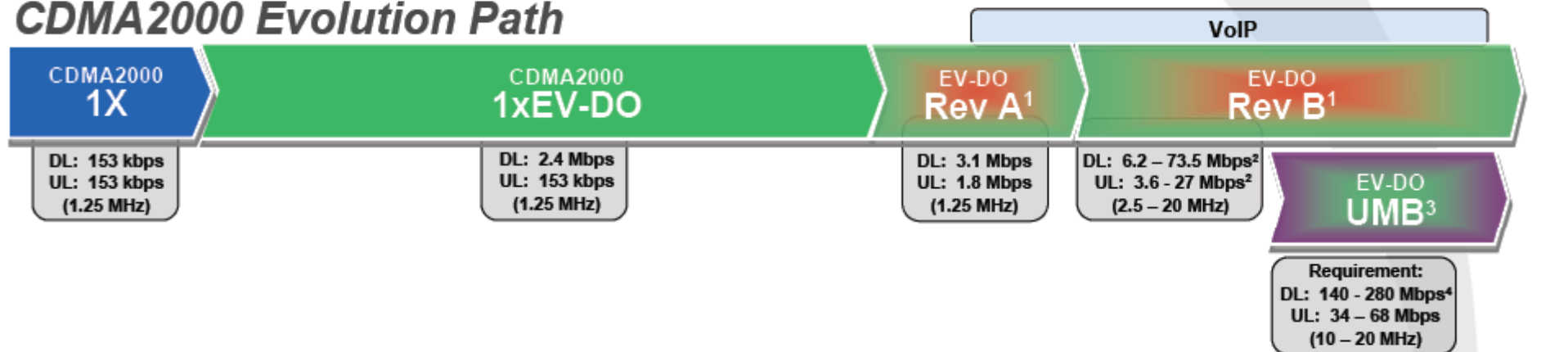
SERVICE PERSPECTIVE

- **Services provided today –**
 - › bandwidth leasing
 - › voice services
- **Cannot meet future consumer demands market competition**
- **New services**
 - › MULTI-PLAY – INDIVIDUAL CONSUMERS
 - › ICT SERVICES – BUSINESS USERS
- **CONSUMERS – IPTV most promising**
- **BUSINESS USERS – solution design, service hosting, service outsourcing, service consulting, business process outsourcing**

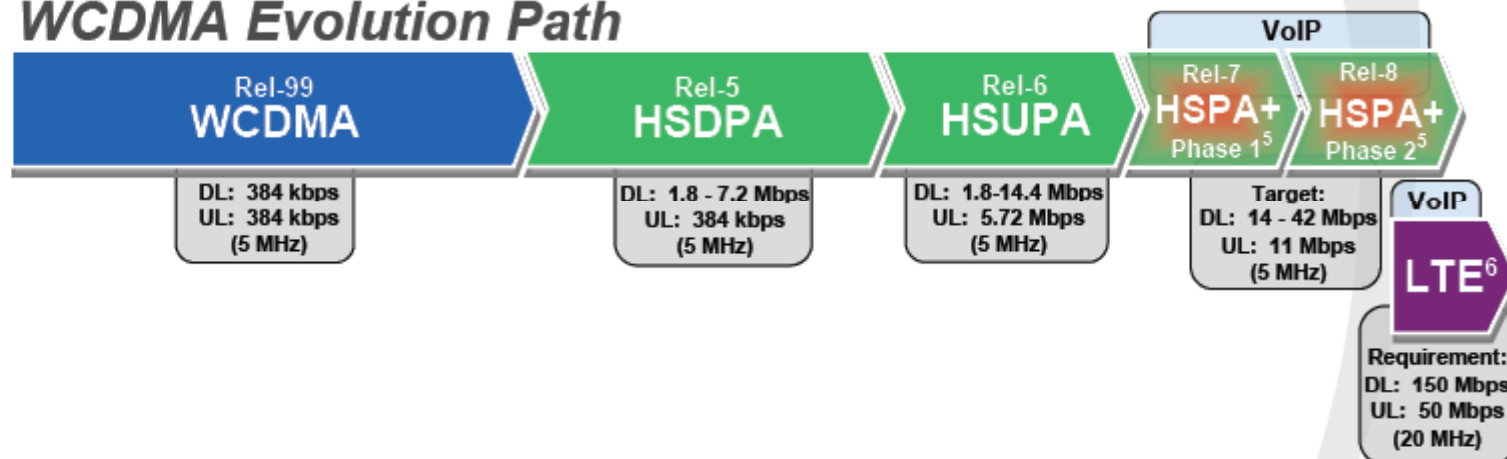
TECHNOLOGY ROADMAP

■ CDMA
 ■ CDMA/TDM
 ■ OFDM
 ■ MIMO
 ■ OFDM/OFDMA/MIMO/SDMA

CDMA2000 Evolution Path



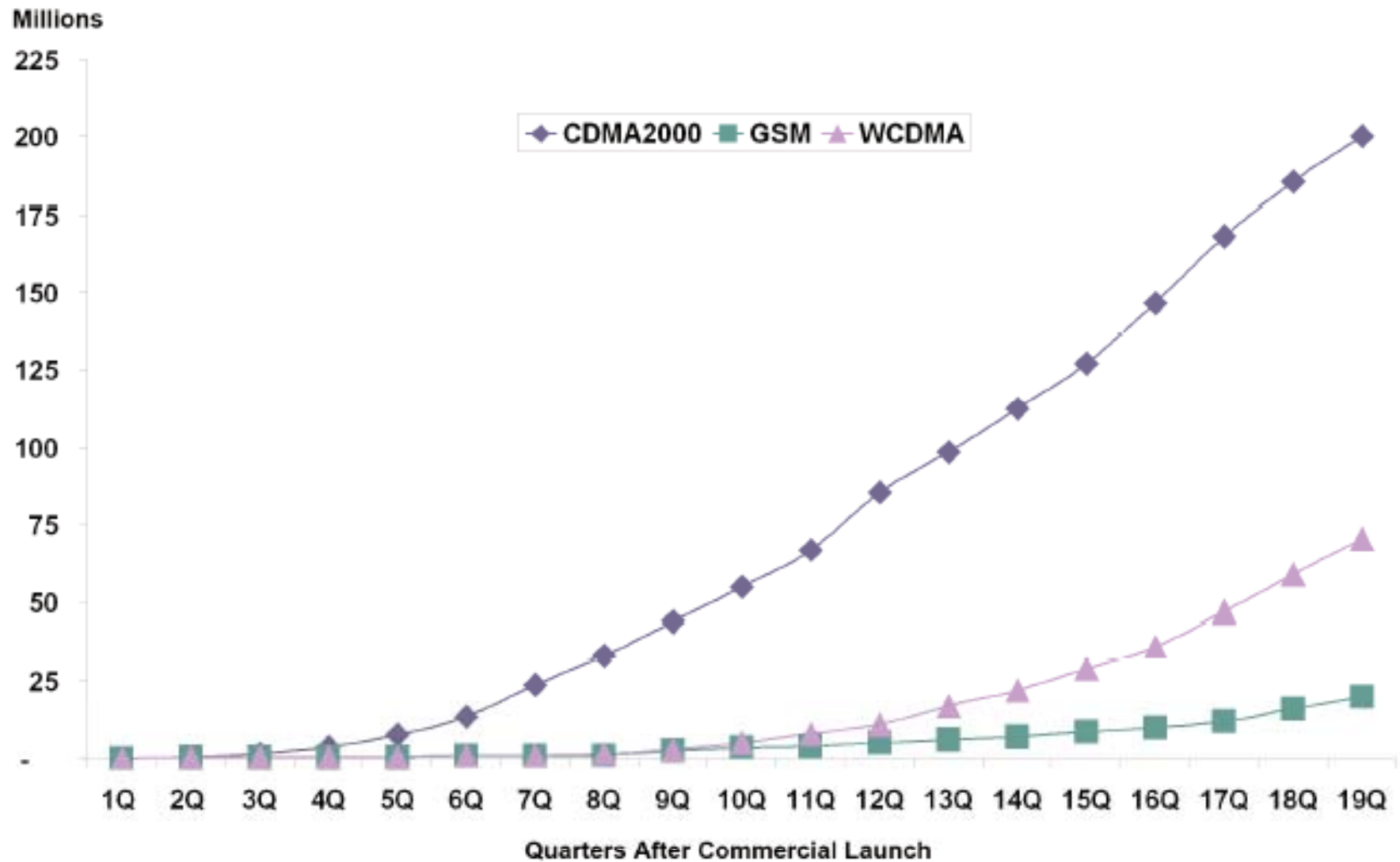
WCDMA Evolution Path



2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010

Note: timeline depicts initial commercial availability of each technology. Those introduced beyond 2008 are under standardization and are subject to variability

Global Subscriber Growth by Technology During First 19 Quarters of Commercial Service



Source: CDMA Development Group and Strategy Analytics, June 2006

CDMA2000: The Largest Selection of 3G Devices

More than 1250 CDMA2000 devices have been introduced to the market

Entry-level
Voice-centric
Handsets



Personal
Messaging
Mobile Phones



Fixed Wireless
Phones



PDA's



EV-DO
Fixed Wireless
Terminals



Interactive
Multimedia
CE Devices



EV-DO
PC Cards



EV-DO
USB modems



WorldMode™
Global Roaming
Phones



EV-DO
PCexpress
Embedded Modules
for PC Notebooks



956 CDMA2000 1X devices
282 CDMA2000 1xEV-DO devices
81 Manufacturers and vendors

UNIFIED EXPERIENCE



THE 4TH EXPERIENCE

First CDMA All IP Network



Challenges

- High quality network
- Control the budget
- Voice & data service requirement
- Saving transmission

Benefits for LEAP, USA

- Ensure the highest quality: Fully compliant with US standards and FCC mandatory features



- **Softswitch and IP-based BTS**
 - Saving 60% on transmission rental
- **CDMA2000 1X & EV-DO Rev.A mixed configuration**
 - Satisfying different services requirements

**MANY
THANKS**