



Mobile Converged Networks

1.3.1 Shaping the Future: Mobile Network Evolution to NGN



ITU-BDT Regional Seminar on Fixed Mobile Convergence and new network architecture for the Arab Region



Tunis, Tunisia, 21-24 November 2005

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>THIS IS THE WAY

Shaping the Future:
Mobile Network Evolution to NGN

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>THIS IS NORTEL

Objective and Outline

> Objective

- Show network transformation and convergence are essential for enhancing the user experience, and are driven by user demand
- Show mobility must be an integral capability of the Next Generation Network

> Outline

- Value: User Services / Service Infrastructure / Network
- Shifting “demographics”
- Convergence opportunity: mobility is a key dimensions of the NGN
- Convergence and network transformation
- Realizing the Vision: simplifying the user's life / transforming the network

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What's Life Like

> Today ...

- Most people can't do without their mobile phones
- Content is on DVDs or magazines or books or a local hard-disk
- Contact Lists are by application, device, and individual situation



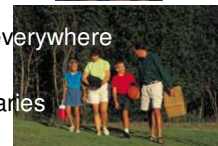
> In 2010 ...

- Everyone's connected and can't do without being on-line
- The first place people go for content is on-line
- Informal peer groups and sharing is open and legal



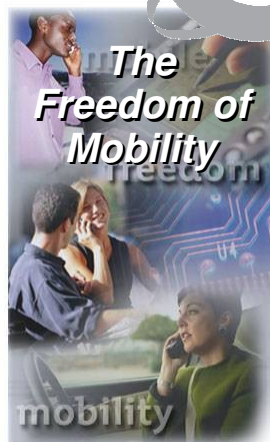
> In 2015 ...

- Everyone and everything is connected all the time, everywhere
- The only place people go for content is on-line
- Dynamic communities of interest without any boundaries



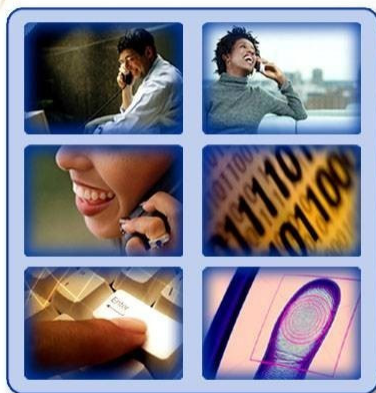
Today's technology savvy young person is grown up, a key decision maker at home and at work, and your target customer!

End Users Value ...



... for enhanced productivity and user experience

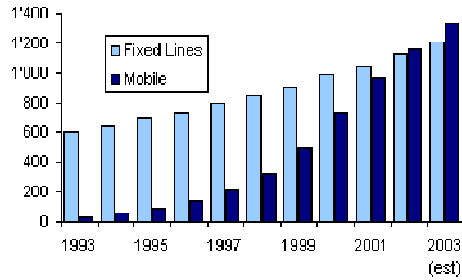
Eliminate boundaries ...



... to enable ubiquitous and seamless solutions

Mobile and Internet Revolution is Underway

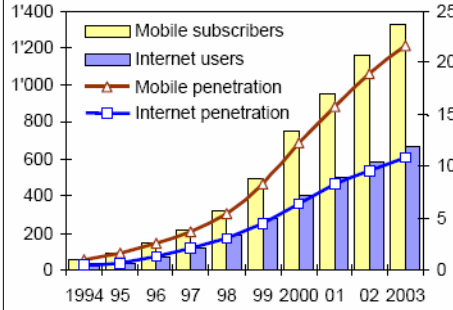
Mobile overtakes fixed: total subscribers, world, millions



From: "ITU and its Activities Related to IP Networks" (Apr 2004)

Data source: ITU World Telecommunication Development Report, 2002.

Users (millions) and penetration per 100 pop.



From ITU Internet Reports 2004: "The Portable Internet"

Data source: ITU World Telecommunication Indicators Database

Jan 2005

- UK: >100%: http://www.telecompaper.com/site/news_TA.asp?type=abstract&id=64718&NR=680

Mar 2005:

- Ireland: 94%: <http://www.rte.ie/business/2005/0318/comreg>

- Singapore: 91%: http://www.w2forum.com/item/singapore_mobile_phone_penetration_past

Mobile Revolution - Japan

> Example: TCA Japan Telecom Data Book 2004

- Ref:

- <http://www.tca.or.jp/eng/datab ase/annual/2004/index.html>

Fixed subscriber lines

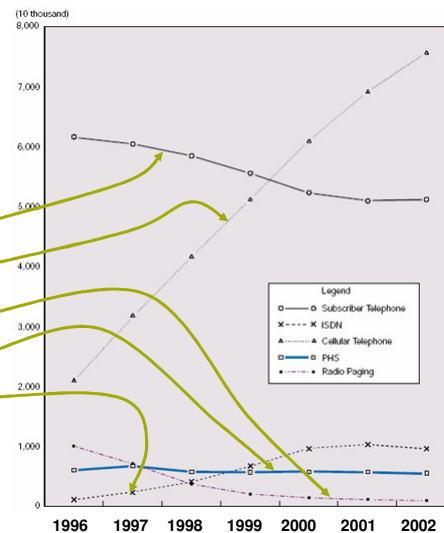
Mobile subscribers

Paging

PHS

ISDN

- > Continuing strong growth in mobile subscribers
- > Stabilizing fixed subscriber base
- > ISDN starting to decline!



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Mobile and Internet Revolution - Korea

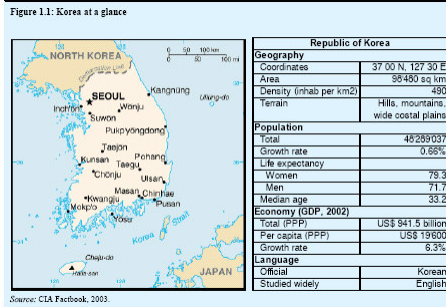
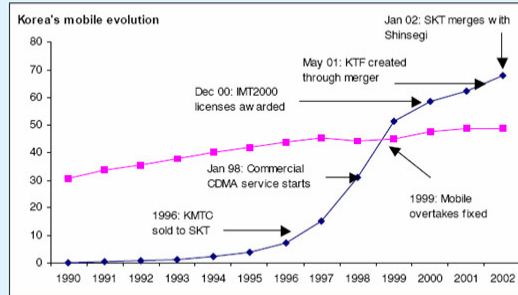


Figure 3.1: Korea's rapid mobile growth



<http://www.itu.int/osq/spu/ni/futuremobile/general/cestudies/koreacase-ry22.doc.pdf> (26 Feb 2004)

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Internet Revolution - Korea

Table 5-1 | Broadband Internet subscribers

Classification	2000	2001	2002	2003	2004. 6
Subscribers	4,017.5	7,805.5	10,405.5	11,178.5	11,617.8
Household rate	27.0	52.6	69.1	73.1	74.8

(unit: 1,000 people, %)

Data : Ministry of Information and Communication, July 2004

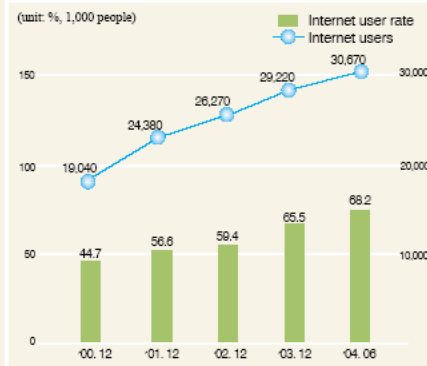
• **Strong correlation between mobility and internet usage**

• but varies by market: must always consider local factors

[http://www.nca.or.kr/homepage/ehome/ehome.nsf/BynewsV/1CACB7630D5C68F2C9256F3300114C44/\\$file/2004eng.pdf](http://www.nca.or.kr/homepage/ehome/ehome.nsf/BynewsV/1CACB7630D5C68F2C9256F3300114C44/$file/2004eng.pdf)

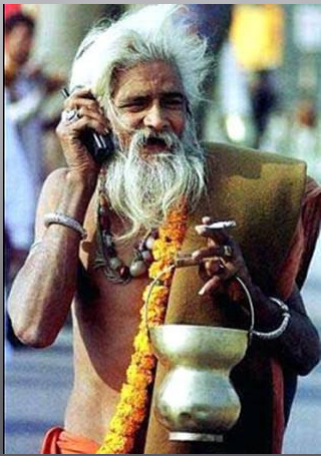
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Figure 5-1 | Trend of Internet Usage Rate and Users



Business in India Country of Contrasts

Embracing Telecom



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Stress All Designs



World Class-Capabilities



Forecasts

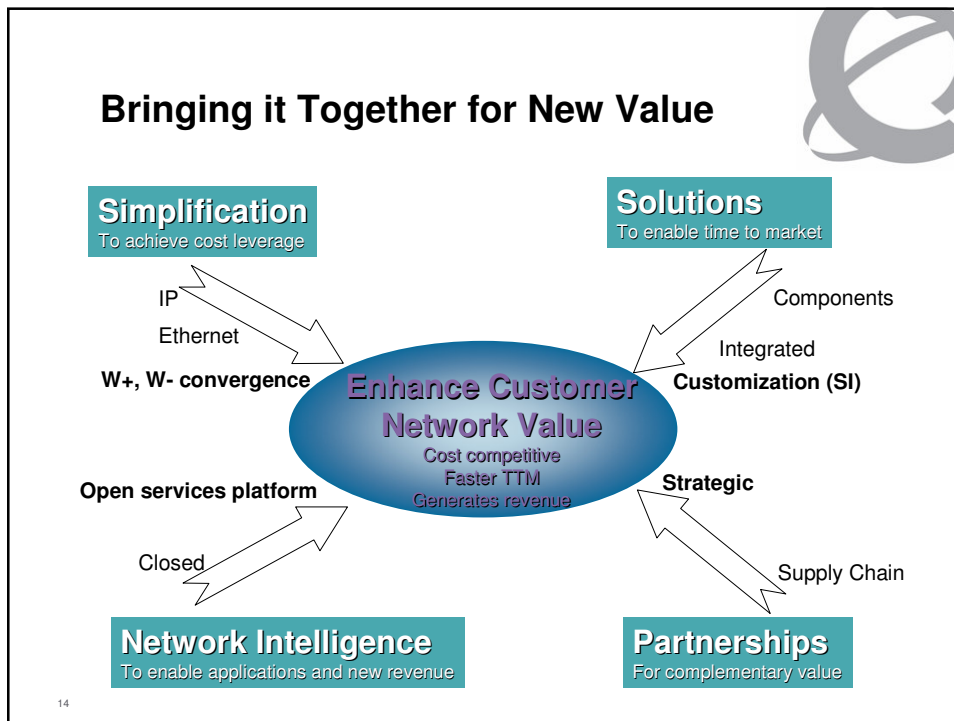
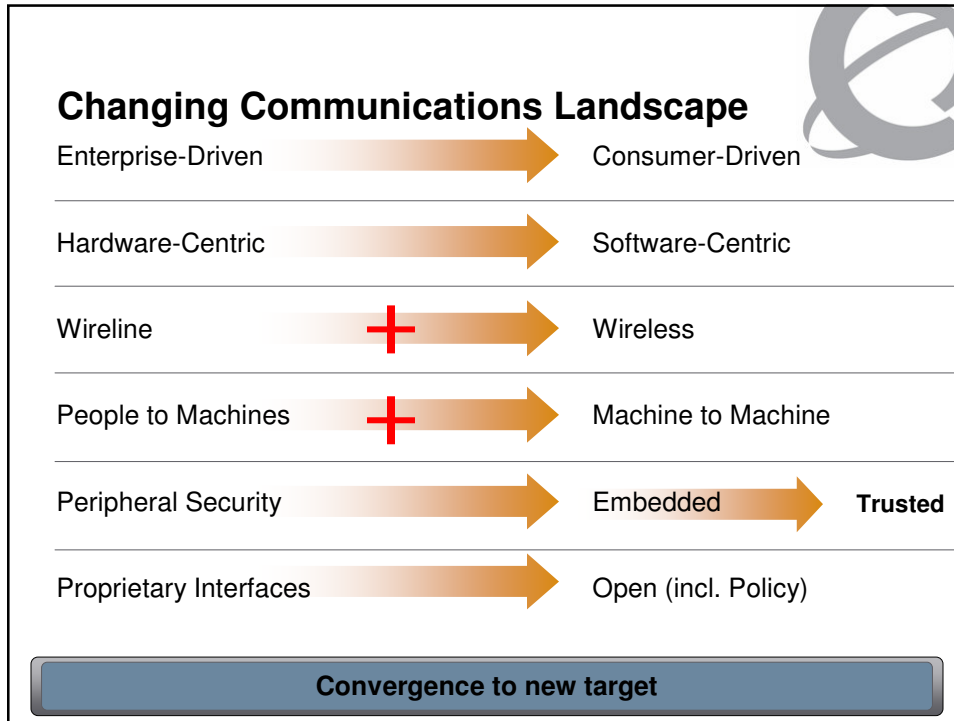
> Many available!

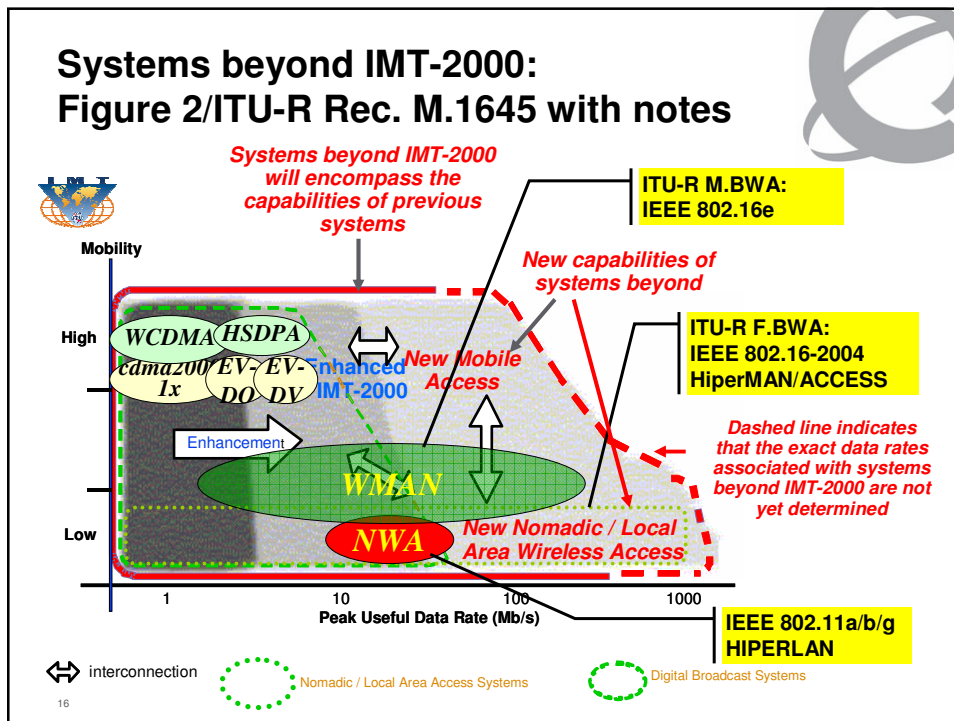
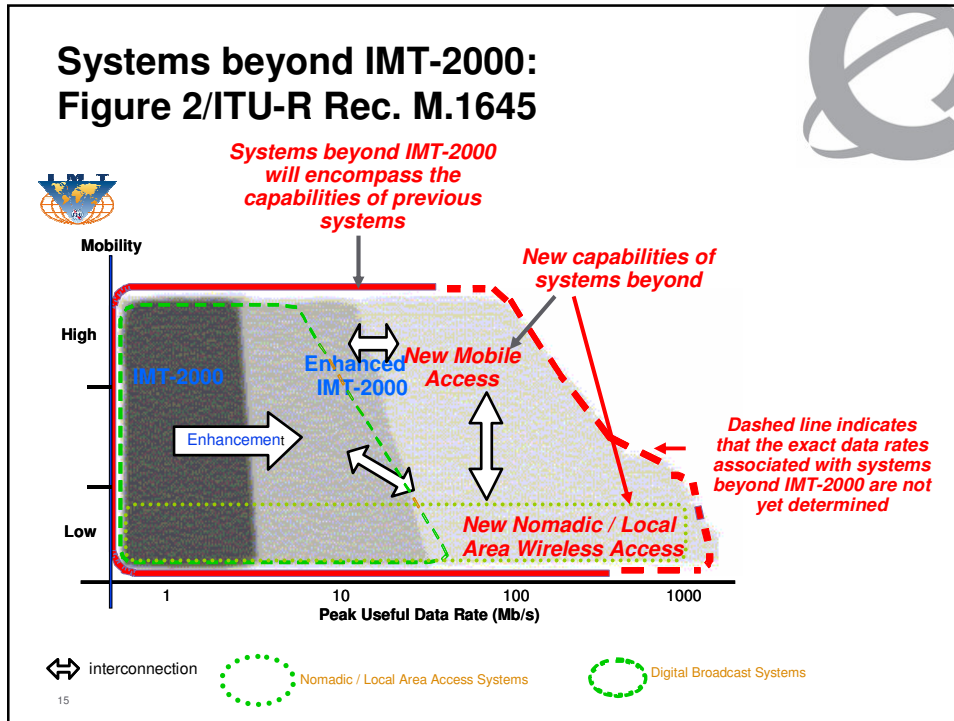
- Example: Yankee Group, News Release 24 Jun 2003:
 - estimate 18.6% of world's population currently has mobile phones
 - global wireless user base will increase 49% over next 4 years, reach 1.72B by 2007
 - global cellular subscriber revenue will grow from \$387B in 2002 to \$584B in 2007, similar in value to crude oil production
- Reality: Dec 2004*:
 - enormous growth in Russia, India, China: e.g., China added 9.25M mobile subscribers in Feb 2005!**
 - global wireless user base: 1.5B at end 2004; internet user base: 700M at mid 2004
 - global mobile revenue already \$414B in 2003

* CNN: www.cnn.com Dec 9, 2004, using ITU info

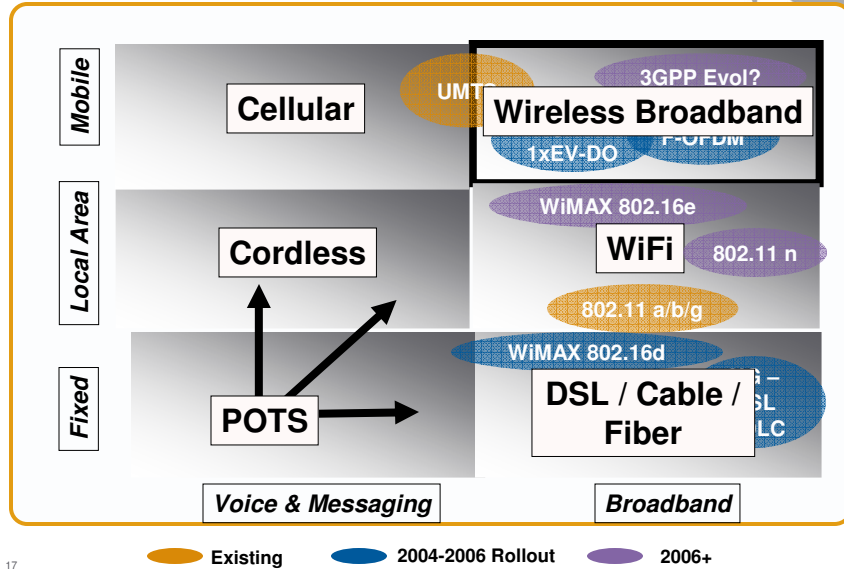
** Shosteck Email Briefing, April 2005; www.shosteck.com

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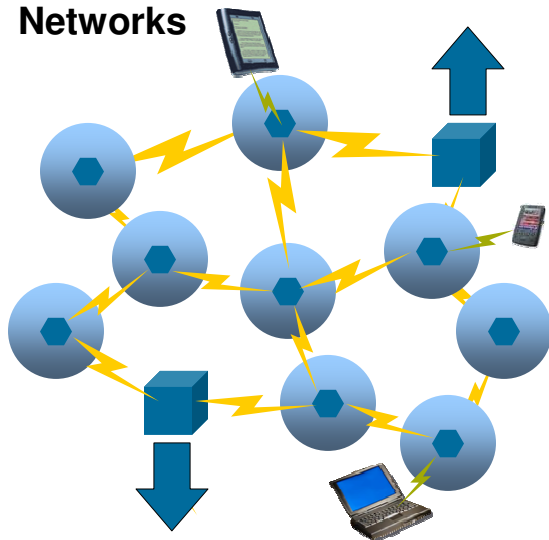


Wireless Broadband – The New Category



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New Deployment - Wireless Mesh Networks

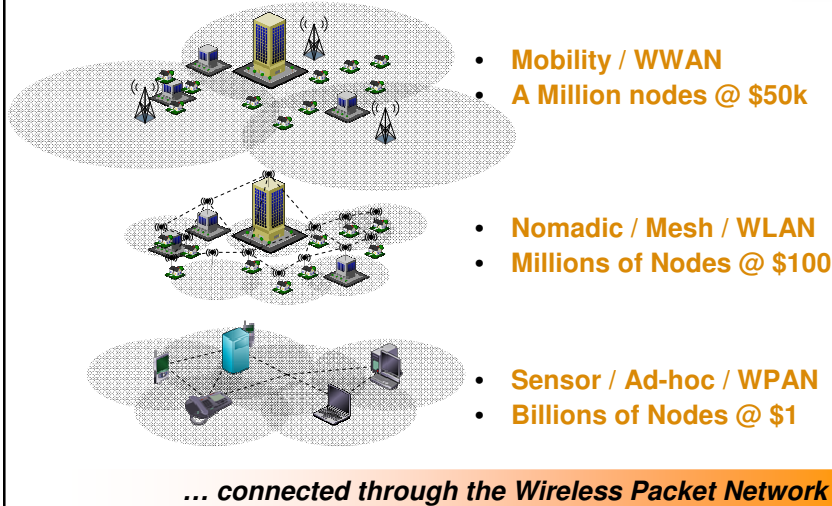


- > Makes WiFi public / city hotspot deployment economic
- > Reduces Operating Costs – Backhaul
- > Commercially Available
- > Taipei, Taiwan Deployment Announced
- > 4 Universities – 2 continents

Can be used to extend WiFi coverage + Use WiMAX 802.16e or HSPA MVNO to provide macrocellular coverage

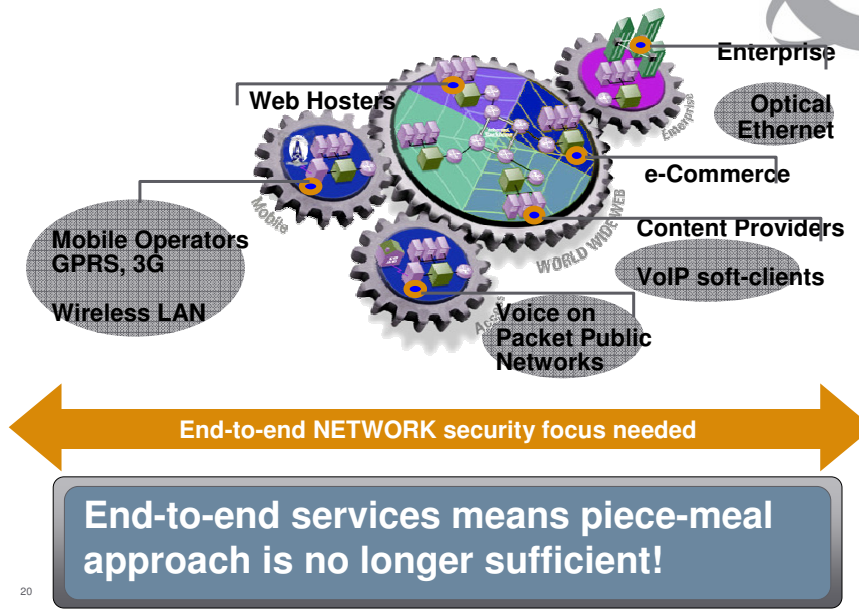
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The Un-Wiring of the Future



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New Security Challenges....



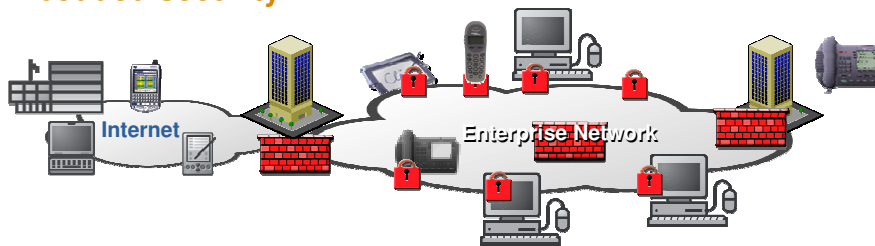
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Challenge: Move from Secure to Trusted Communications

Peripheral security



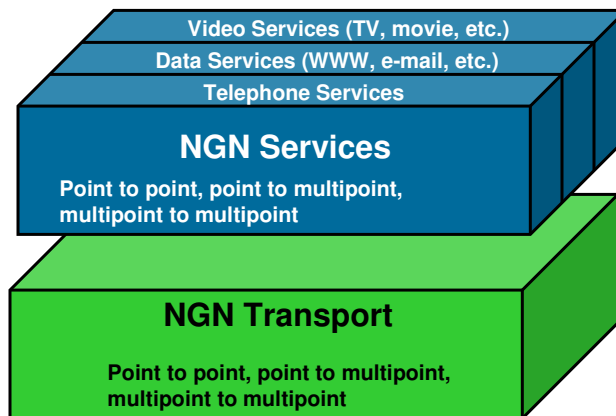
Embedded security



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NGN - Convergence Model

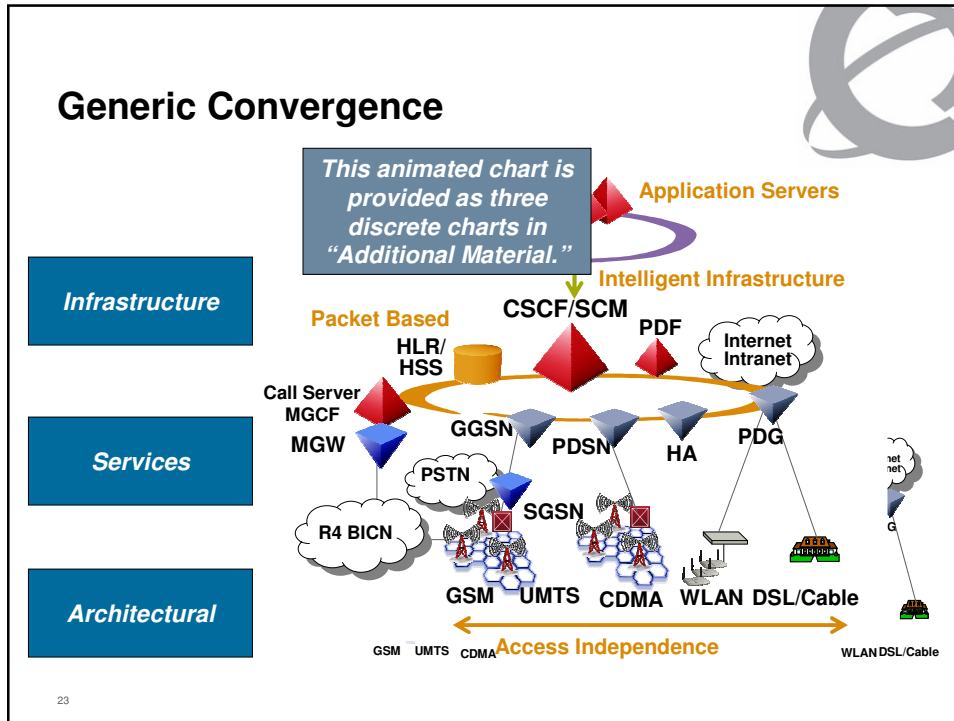
> What's new: horizontally integrated network



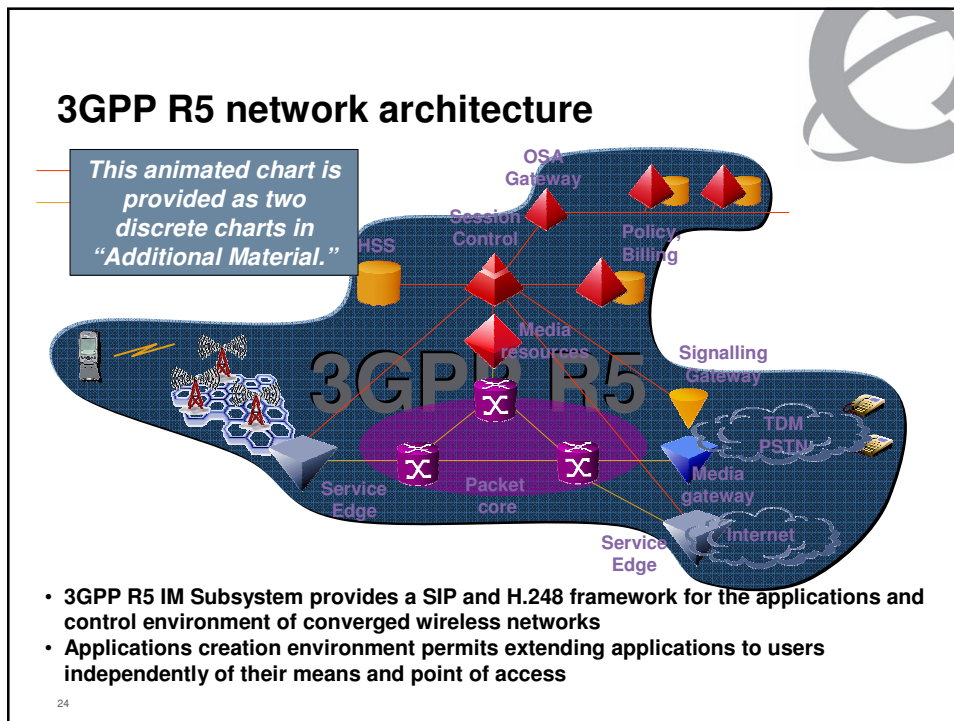
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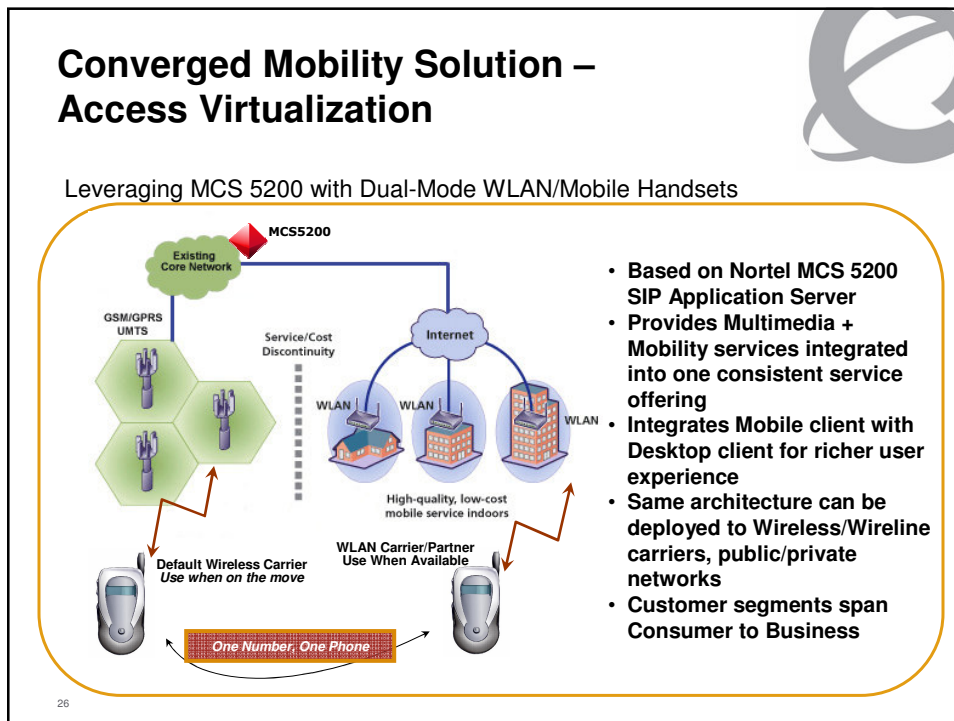
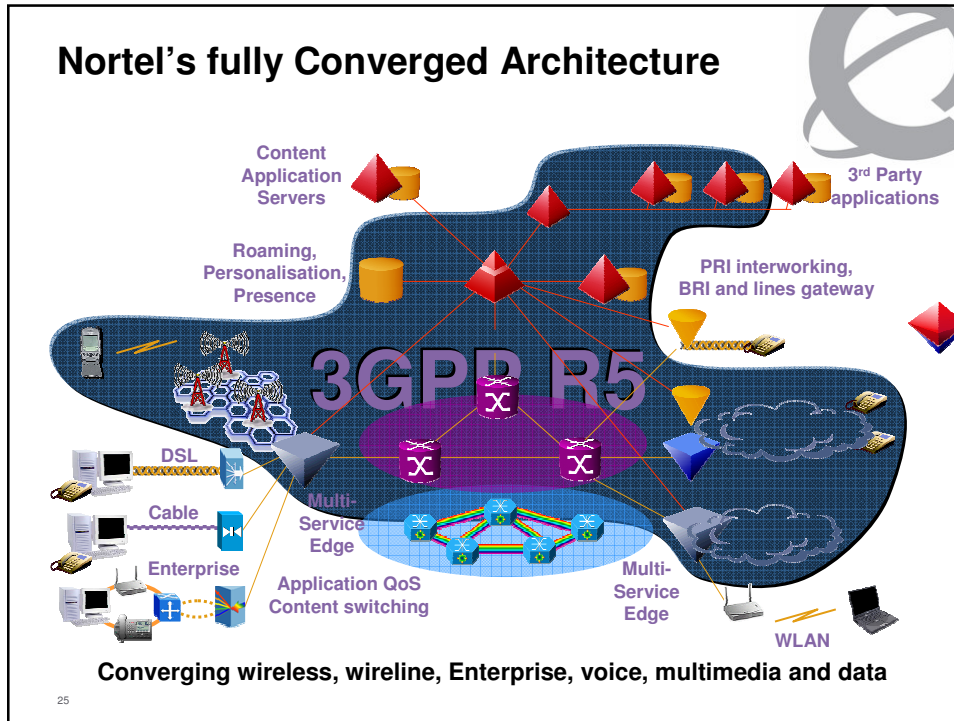
ITU-T Recommendation Y.2011

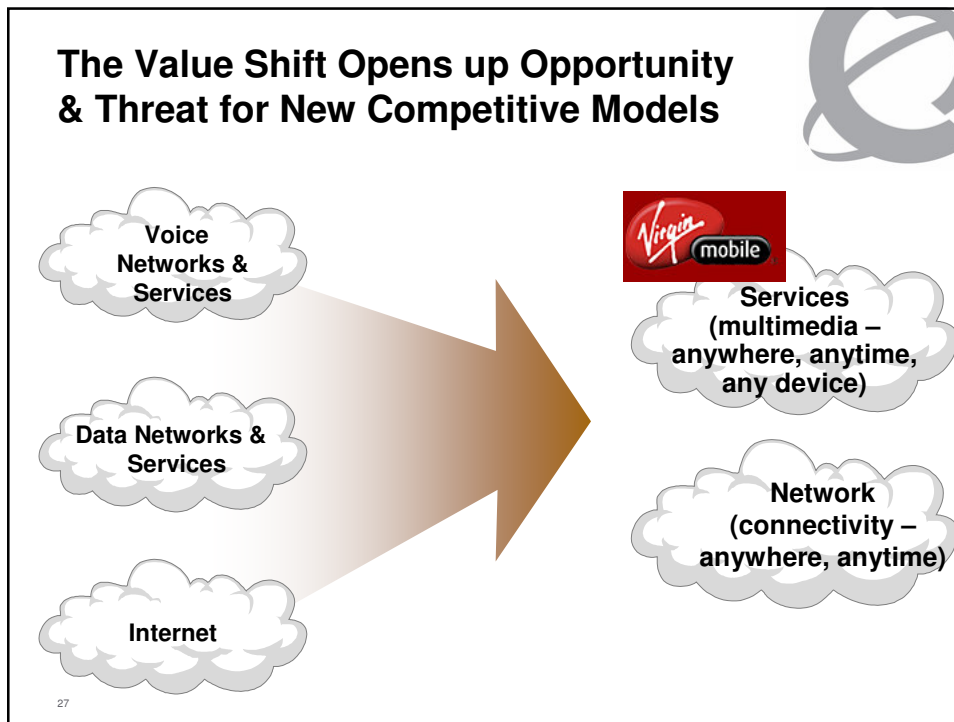
Generic Convergence



3GPP R5 network architecture







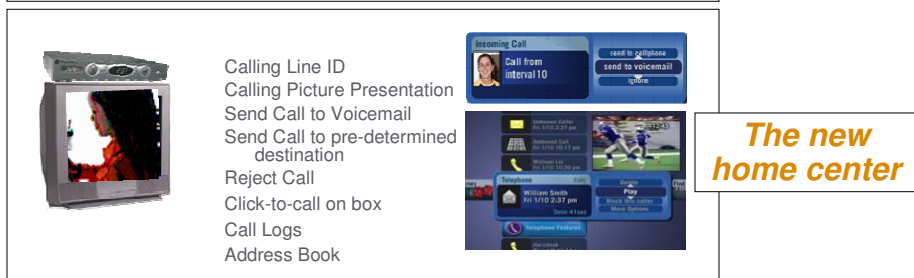
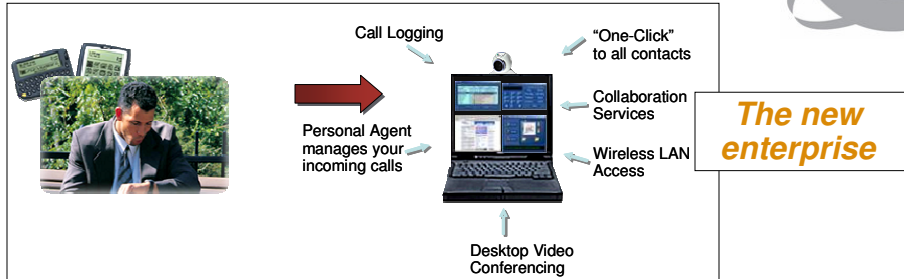
Enhancing End User Experience: Blending User Devices

- > PC, phone(s) and PDA: different user interfaces to the same network-based application
- > Common, network-based directory for:
 - Phone numbers
 - Buddies & presence
 - Email address book
 - All applications
- > Just one address to reach the user
- > Unified, network-based, user profile applying to all terminals
 - E.g., set presence location, call routing preferences, etc., on any terminal and it applies to all

An oval-shaped illustration containing several user devices: a flip phone, a candy-bar phone, a PDA, a laptop, and a desktop monitor. A faint globe icon is visible in the top right corner of the slide.

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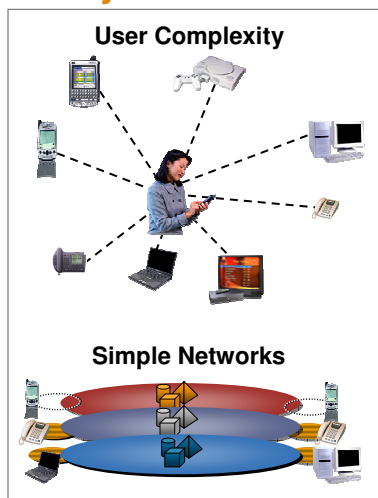
Transforming the User Experience – Application Convergence



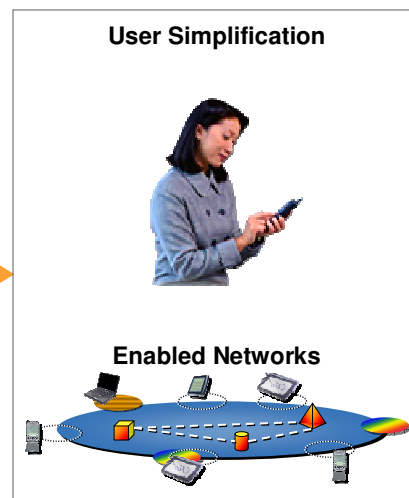
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Convergence Value more than just VoIP Paradigm shift to multimedia “sessions”

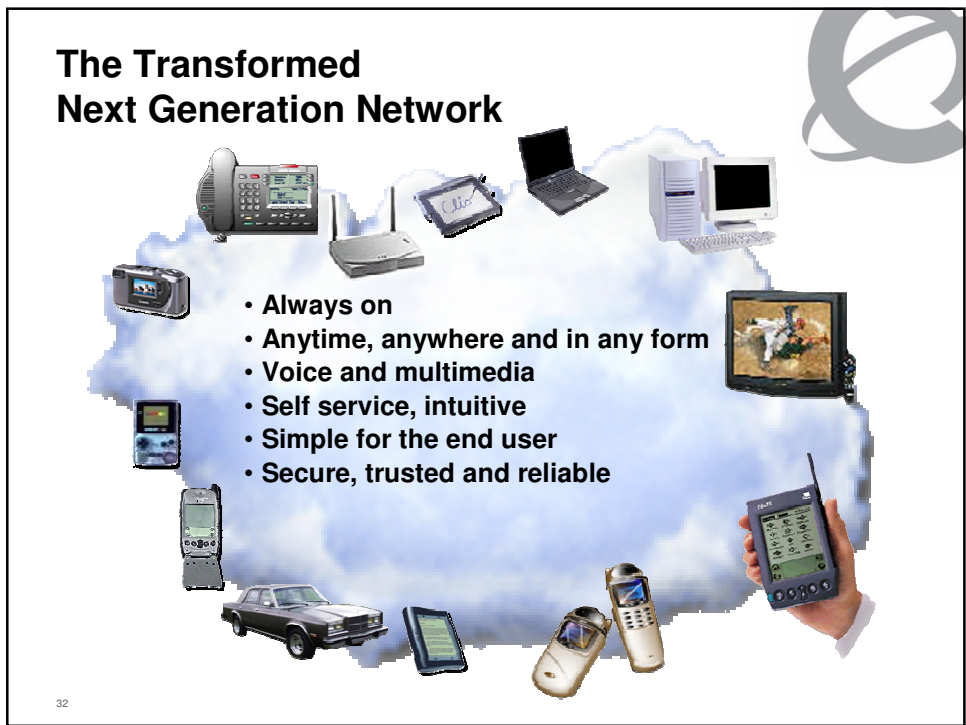
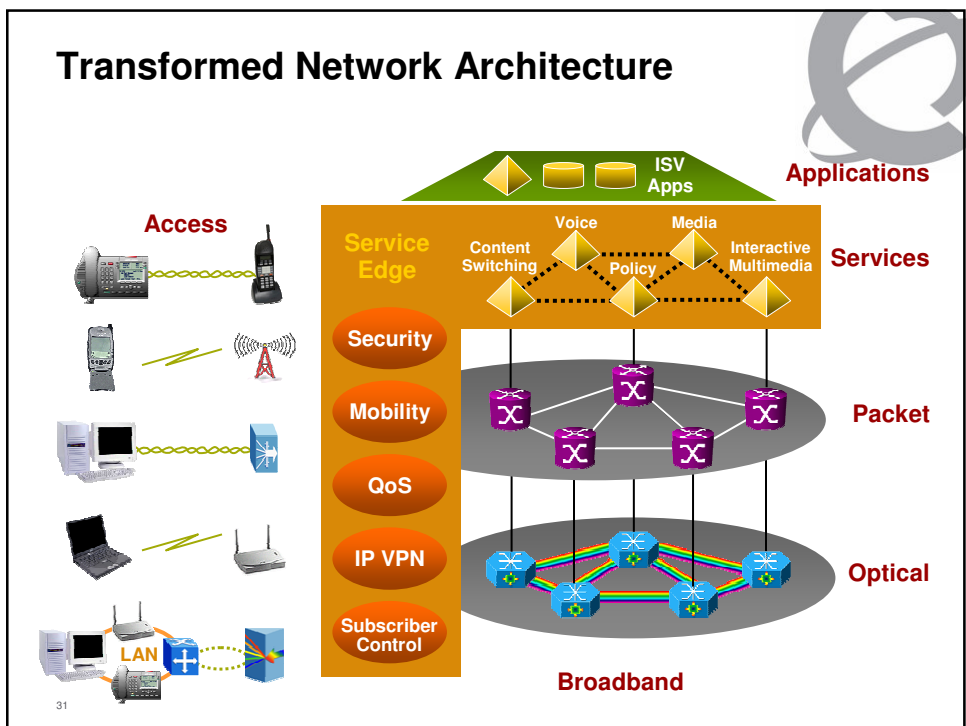
Today



Tomorrow



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Thank you!

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