

What's Hot?



Wireless, Wireless, Wireless

**WiFi, 802.11n, Embedded
WiMAX, MIMO
GPS, FM, DVB-H, MediaFlo
WiMedia, BlueTooth
GSM, WCDMA, HSPA, LTE**

Wireless, Wireless, Wireless

Today's News



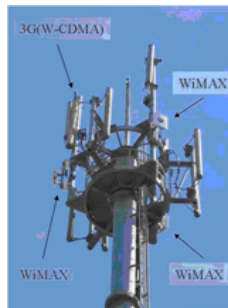
GPS



UWB



WiMAX/WiFi



Wi-Fi, 3G, 4G, Embedded
WiMAX, MIMO
Coming soon !
GPS, FM, DVB-H, MediaFlo
WiMedia, BlueTooth

Then... !

**WiFi, 802.11n, Embedded
WiMAX, MIMO**

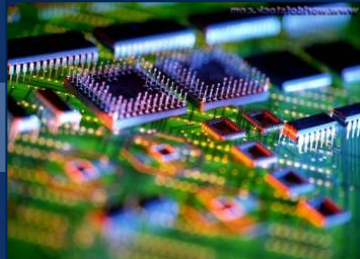
GPS, FM, DVB-H, MediaFlo

WiMedia, BlueTooth

GSM, WCDMA, TD-SCDMA, HSPA, LTE

A Key Entity in Wireless “Dynamic” Value Chain

Device Verification



Silicon

Prototypes

High Volume Production

Branding / Marketing



Meeting the Challenges

Commodization



New Models in Weeks!

Production moves East



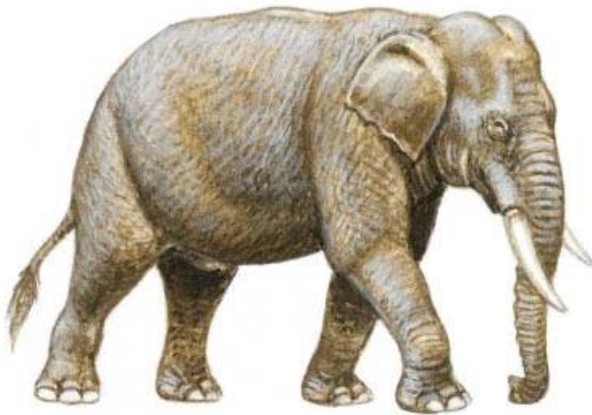
Reduced labor-force experience

Convergence



More radios – everywhere
“MultiCom”

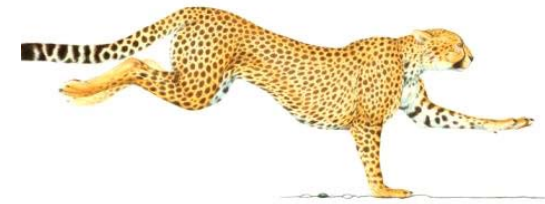
Competition in Wireless testing



Agilent Technologies



ROHDE & SCHWARZ



LITEPOINT



- Establishing LitePoint Office in Taipei
 - For superior support
 - Taiwan, China, Europe, Israel and USA
- Doubled our space in Sunnyvale
 - Engineering keeps growing
- Record Quarters
 - Strong Embedded WiFi
 - MiMo
- New Technologies getting tested
 - WiMax and WiMax MiMo
 - First shipments of IQn_{xxn}+
 - IQnav, IQultra new products!

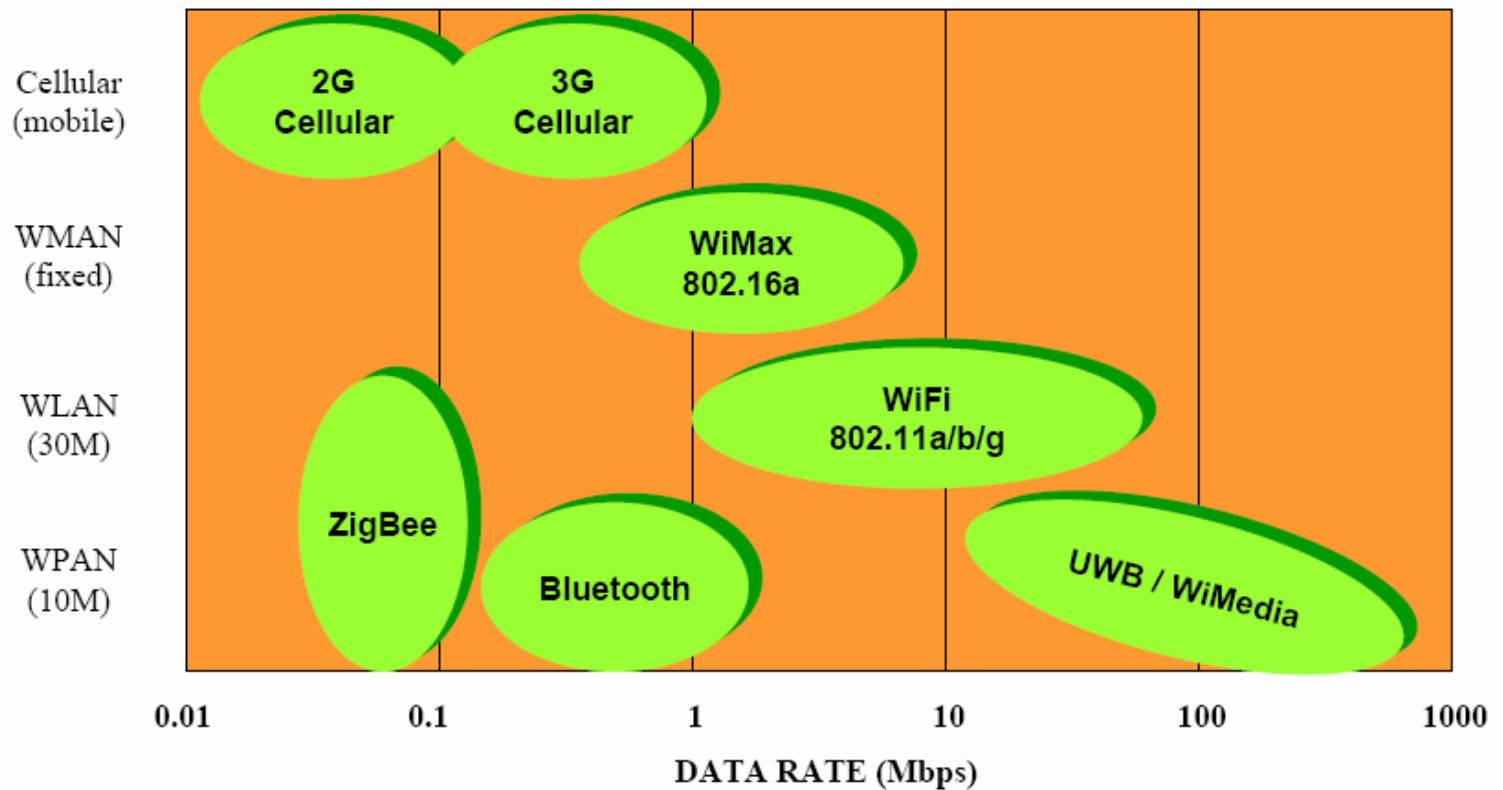
What's Happening in Our Wireless World?



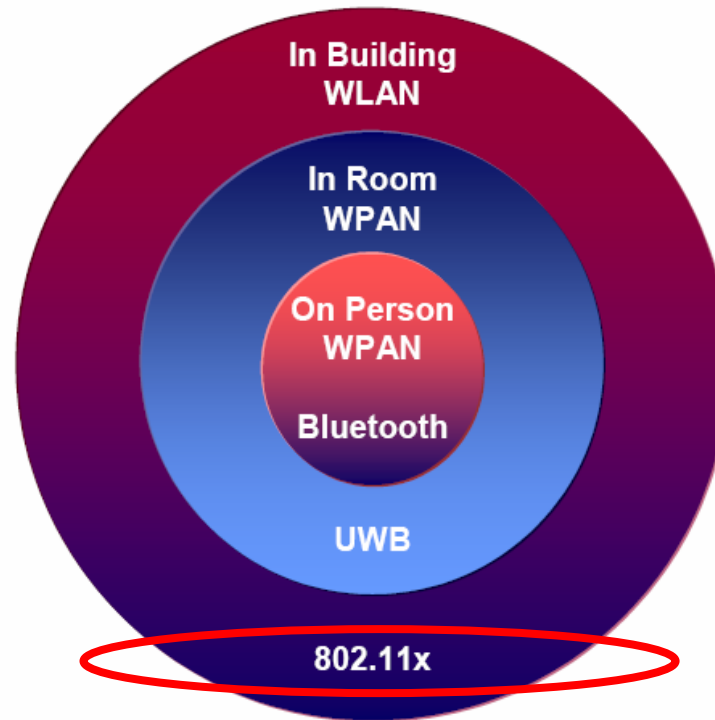
Agenda

- WiFi
- WiMAX
- WiMedia
- Cellular

Wireless World

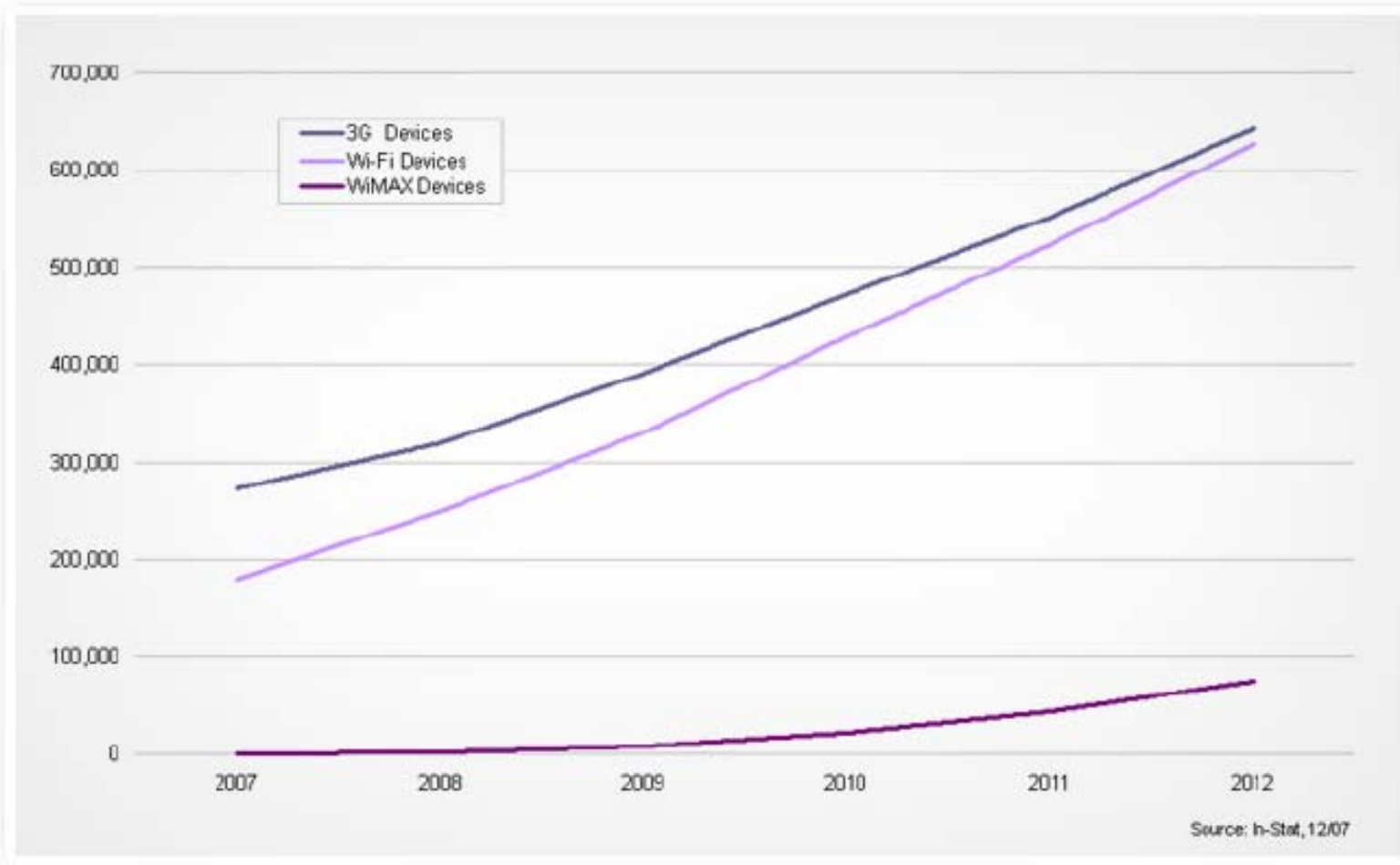


Wireless Ecosystem

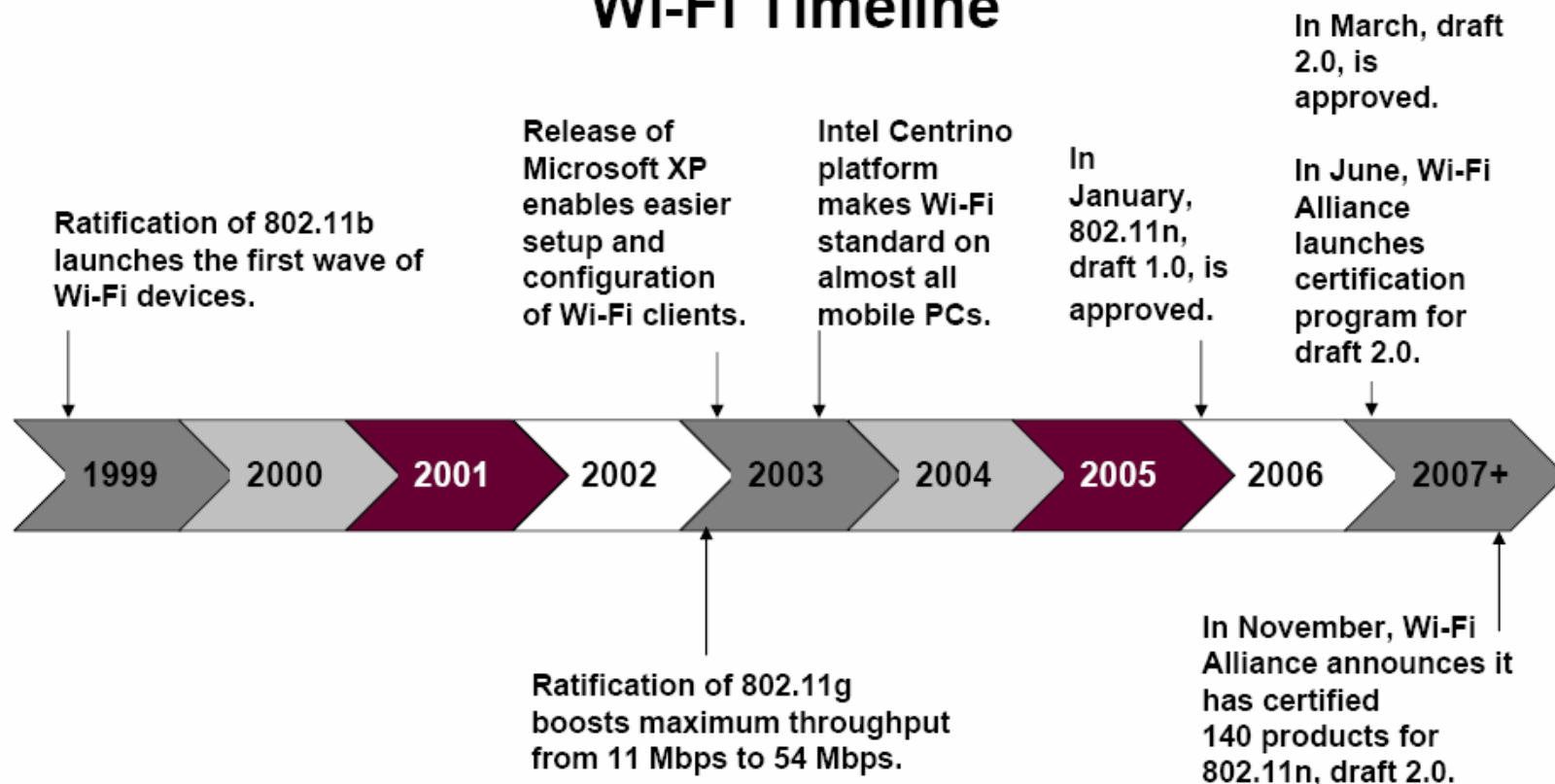


WiFi

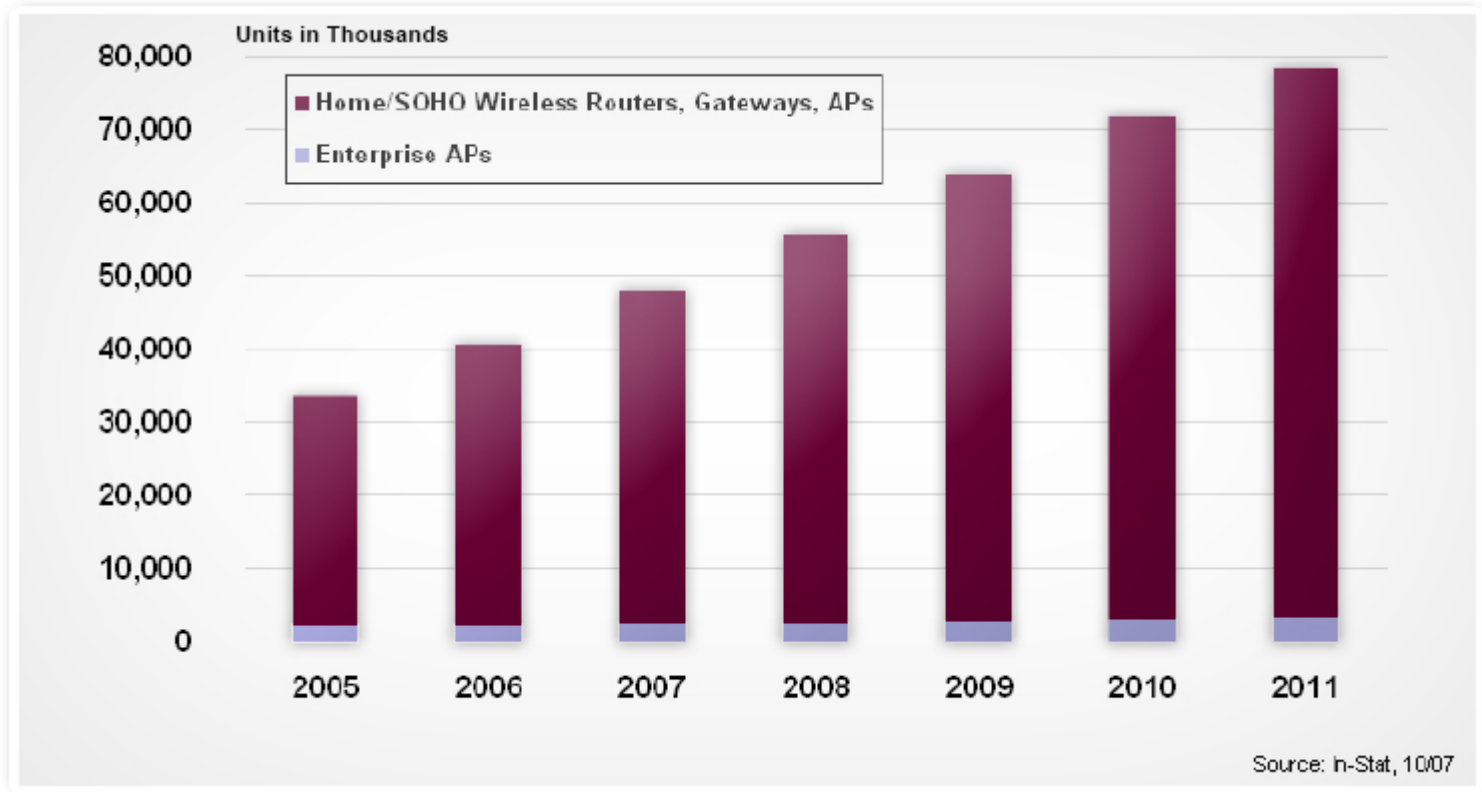
Wireless Market Projections



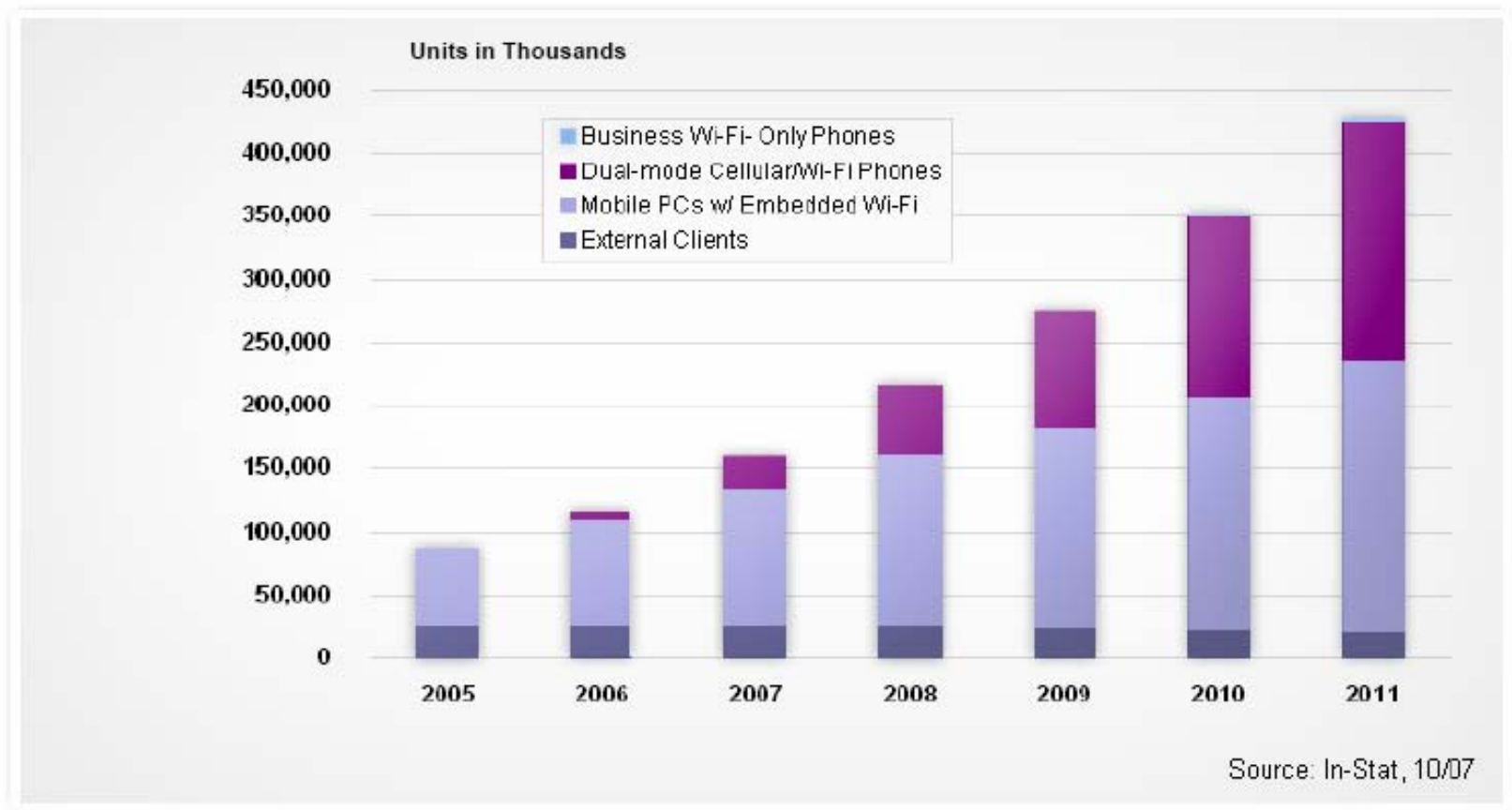
Wi-Fi Timeline



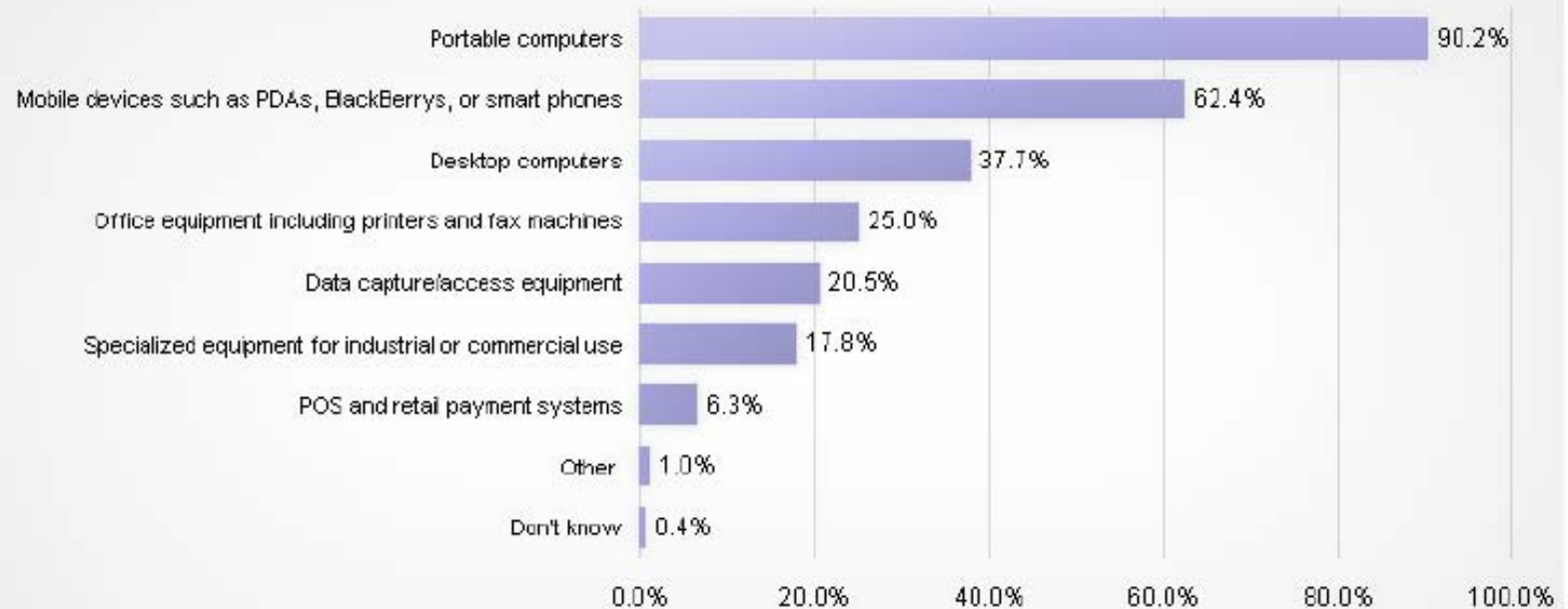
WiFi Action: Small Office and Home



WiFi Action: Embedded in PCs and Cell Phones



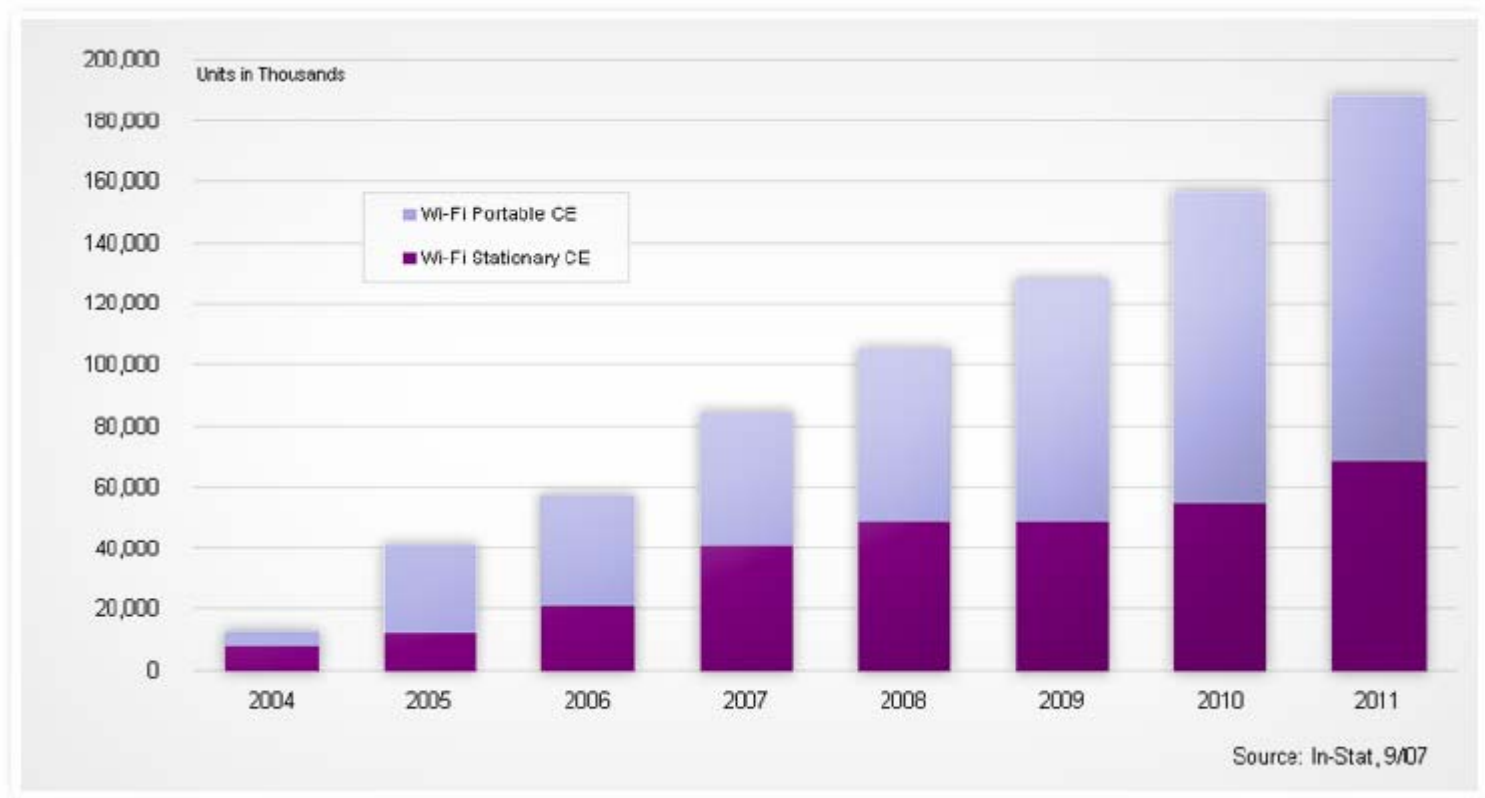
WLAN-enabled Devices



Source: In-Stat, 10/07

N=713

WiFi in Consumer Electronics



WiFi in Media Players



Source: Microsoft

Source: Apple



Source: SanDisk



Source: Haier

WiFi in Smart Phones



Source: Nokia



Source: RIM



Source: Apple

WiFi in MIDs and UMDs



Source: Samsung



Source: Nokia

WiFi MIMO – 802.11n

- Why WiFi MIMO?
 - WiMAX moving slower than expected
 - Increase range of WiFi
 - Increase throughput of WiFi

WiMAX

Mobile WiMAX Device Timeline

- Compliant
- Product Diversity in S.K.
- CPE Dominant
- Certification
- Embedded Laptops
- Phones & Consumer Devices
- More CPE Functionality
- Increased Phone/Device Diversity
- Shipments = 10+ Million
- Portable Clients/Devices Overtake CPE
- CPE = \$100
- Device Prices Go Mainstream



Source: In-Stat

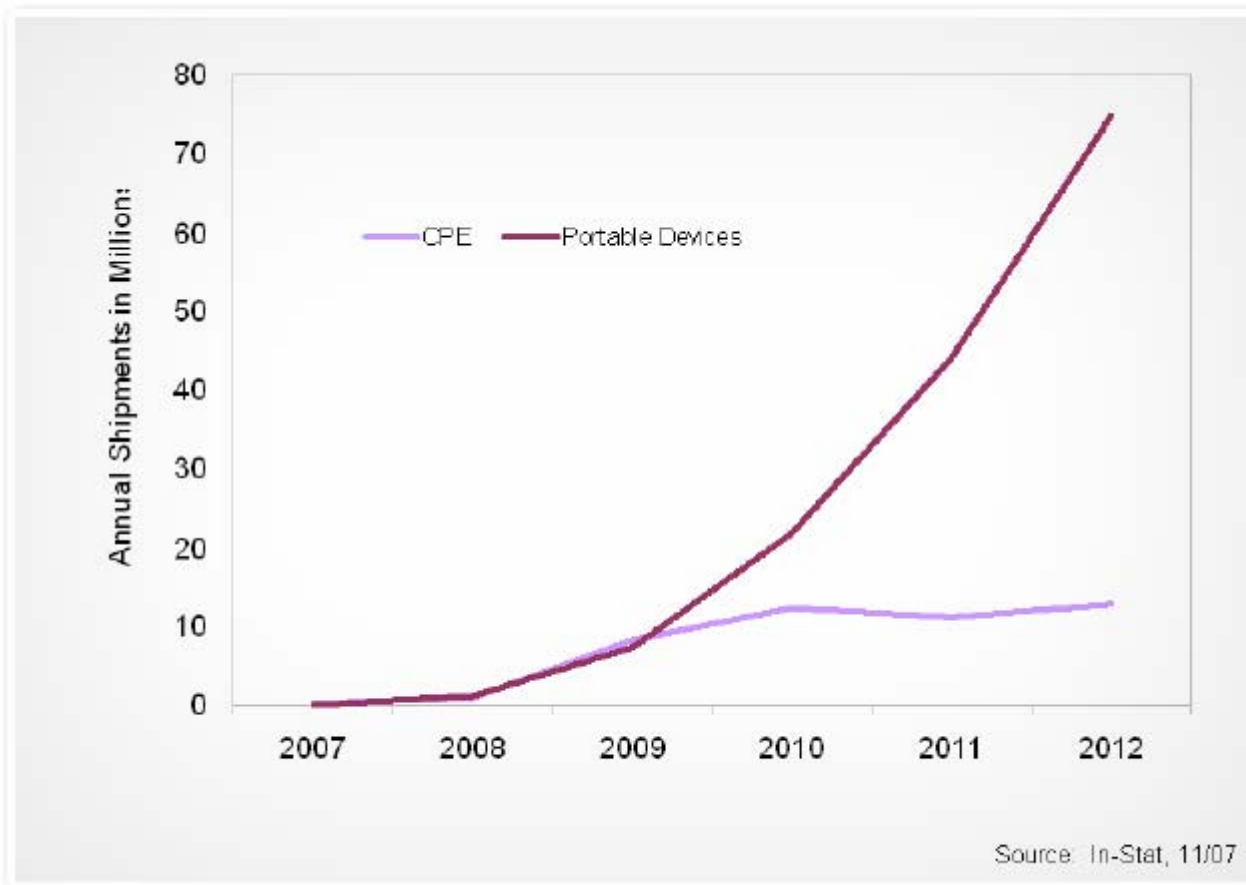
802.16d



802.16e

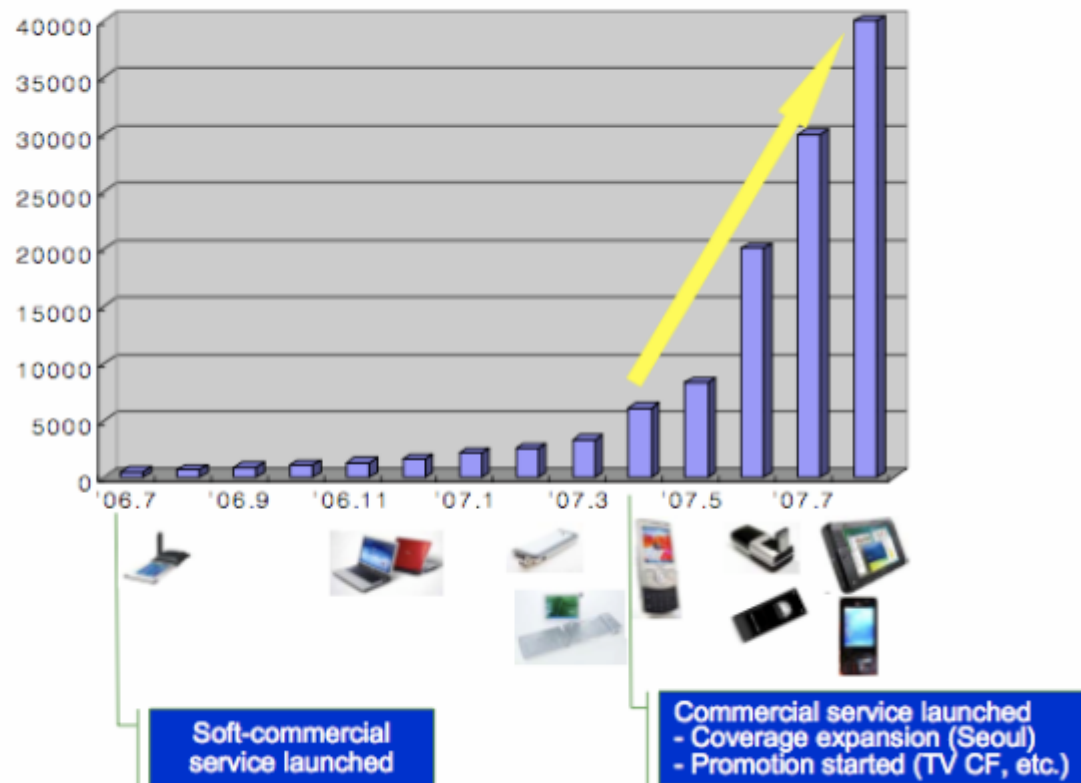


WiMAX Device Projections



Critical Mass Needed in Devices and Services

Subscribers



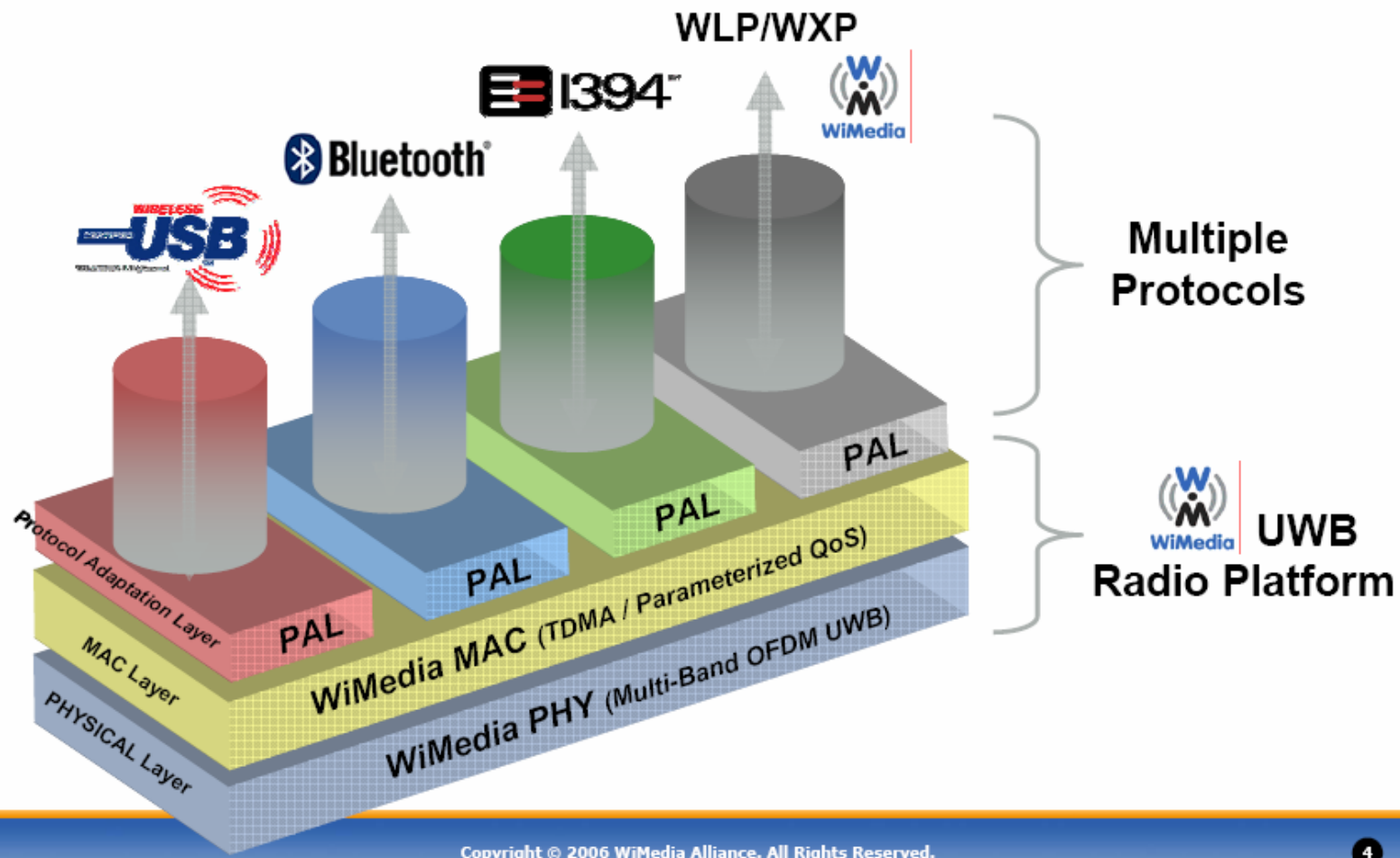
Source: KT 09/07

Latest News...

- Infrastructure prospects improve
 - Sprint + Clearwire = New Clearwire
 - \$12 Billion in committed outside investment
 - \$1 Billion from Intel, alone
 - Should boost WiMAX takeoff

WiMedia

The Common Radio Platform



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4

Current State of Affairs

Radio Chips (PHY):

- ✓ 19 chipsets

Platform Products (PHY + MAC):

- ✓ 39 PHY + MAC implementations

Next Steps in UWB Development

Today:

- High performance
 - 480Mb/s
- Lowest Power
 - 1.5 - 2 Mbps/mW
- Regulatory compliance
 - Major markets

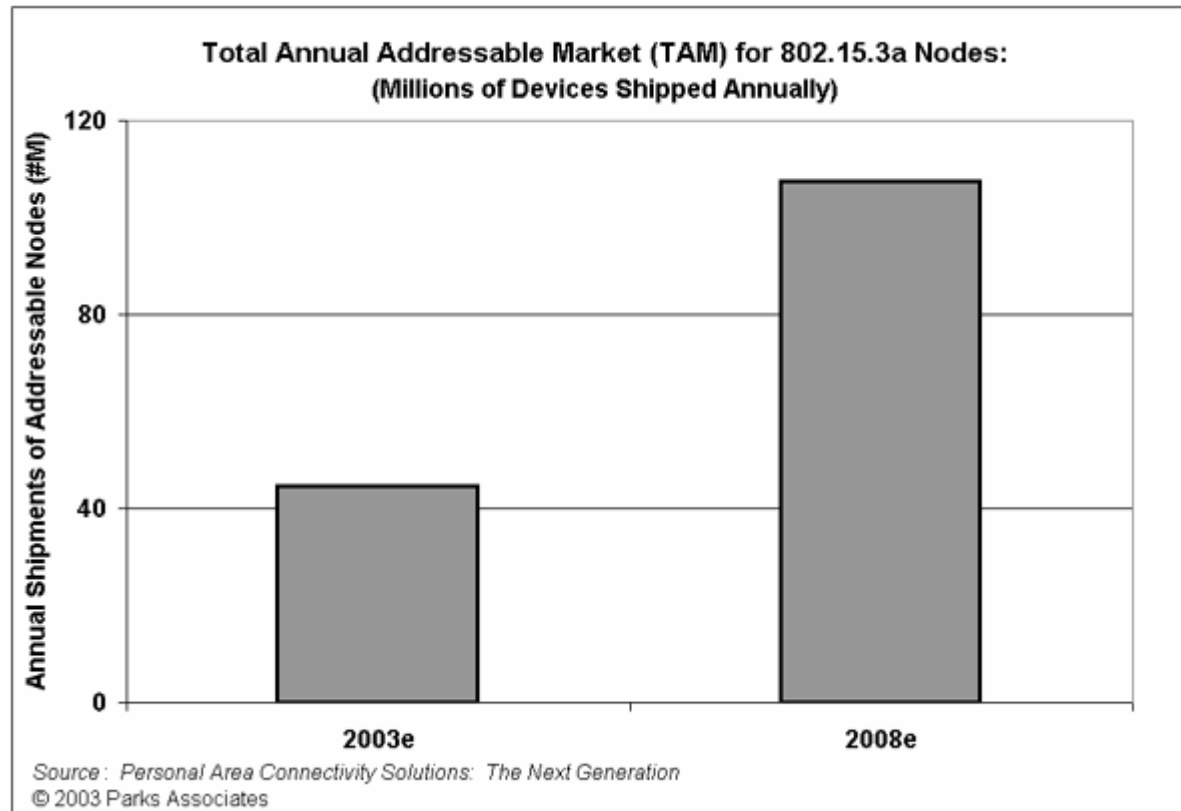
By 2010:

Higher Throughput
For Video Applications
& Synch & Go Applications

Spectrum Enhancements
For Worldwide
Regulatory Compliance

Ultra Low Power
Consumption for additional
Mobile Applications

Differing Views: 2003



Differing Views: 2006

"New analysis from Frost & Sullivan, *World UWB & ZigBee Chipset Market*, reveals that the market for UWB chipsets that had nil shipments in 2005 shall generate revenues of **\$950 million in 2009**.

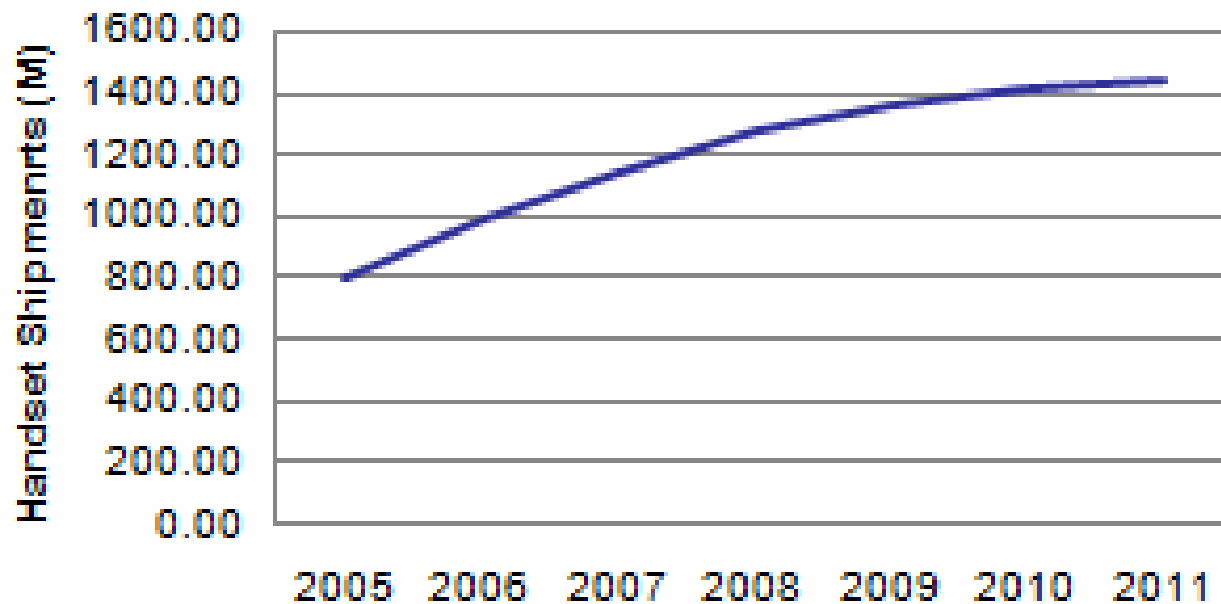
Differing Views: 2008

“...ultra-wideband (UWB) has seen sudden peak growth from a standstill situation and it is expected that the UWB-enabled devices’ shipments will reach more than **400 million by 2013.**”

Source: ABI

Cellular

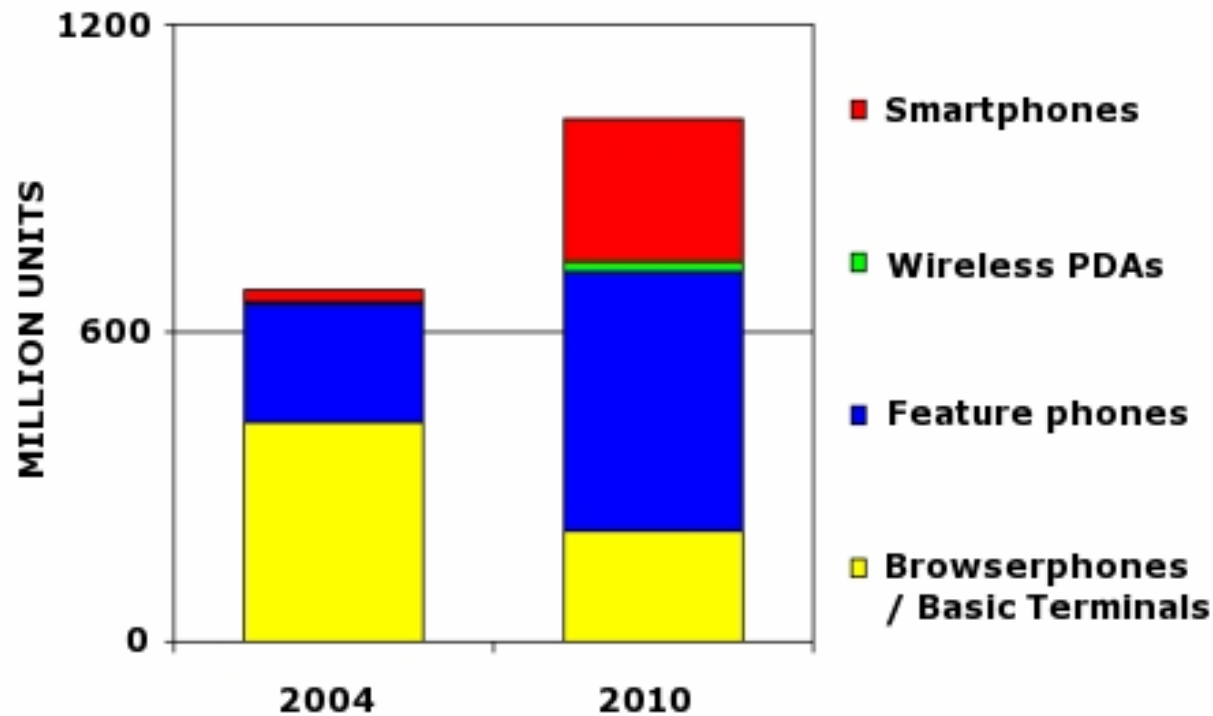
Handset Unit Shipments



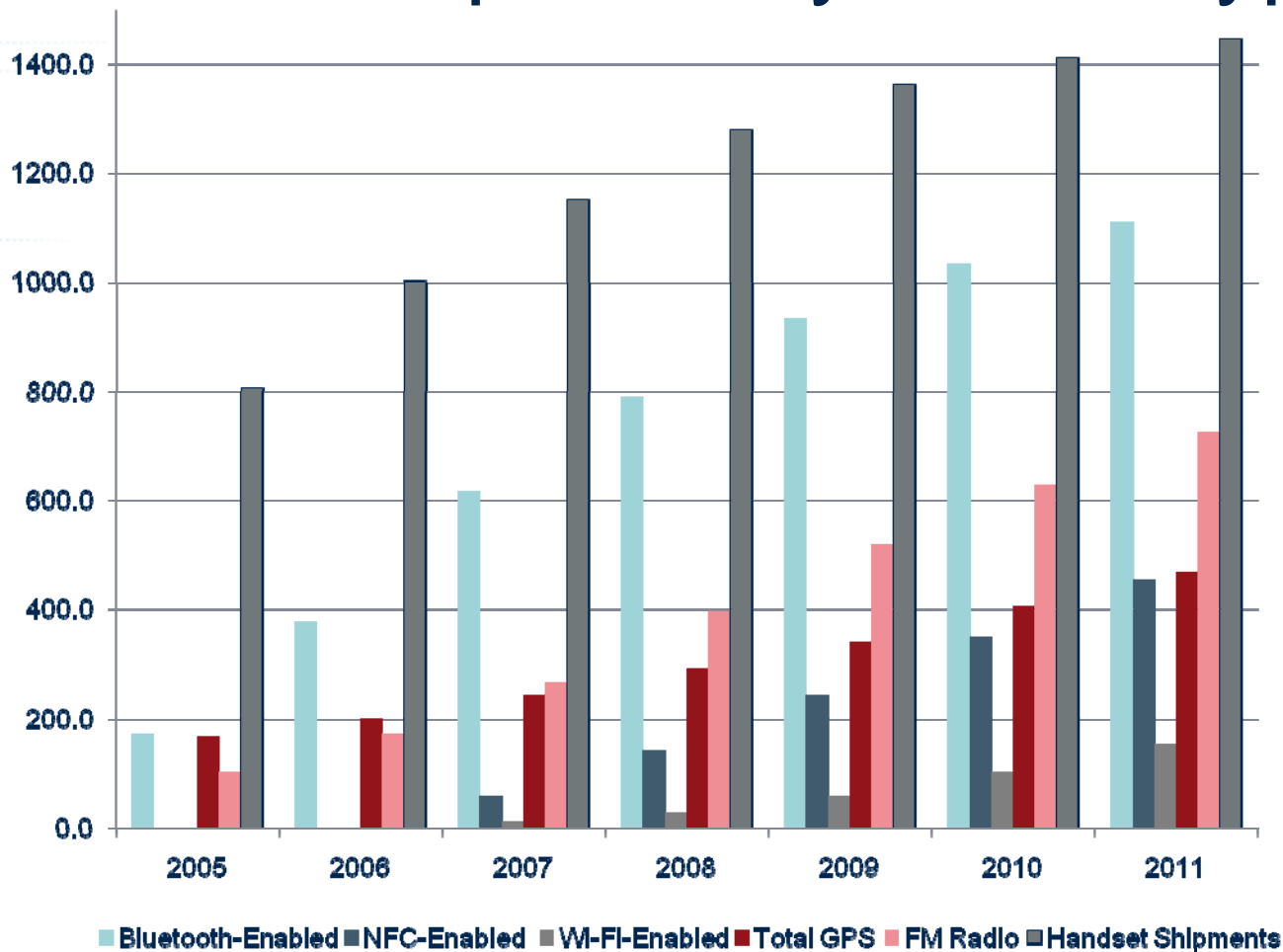
Source: ABI

Smartphone Shipments

Global Handset Sales by Device Type



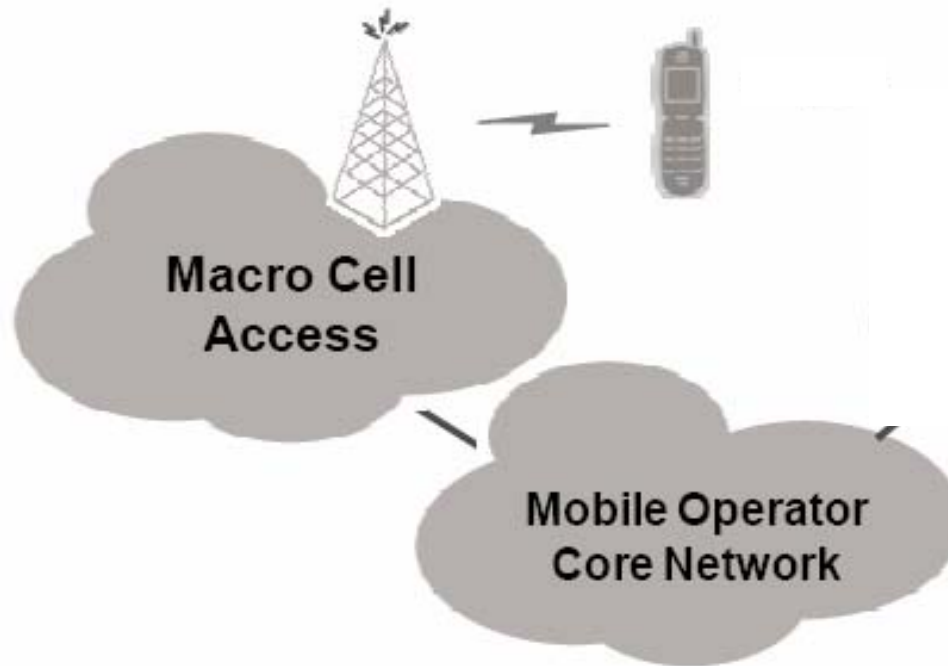
Volume Shipment by Radio Type



Smartphones



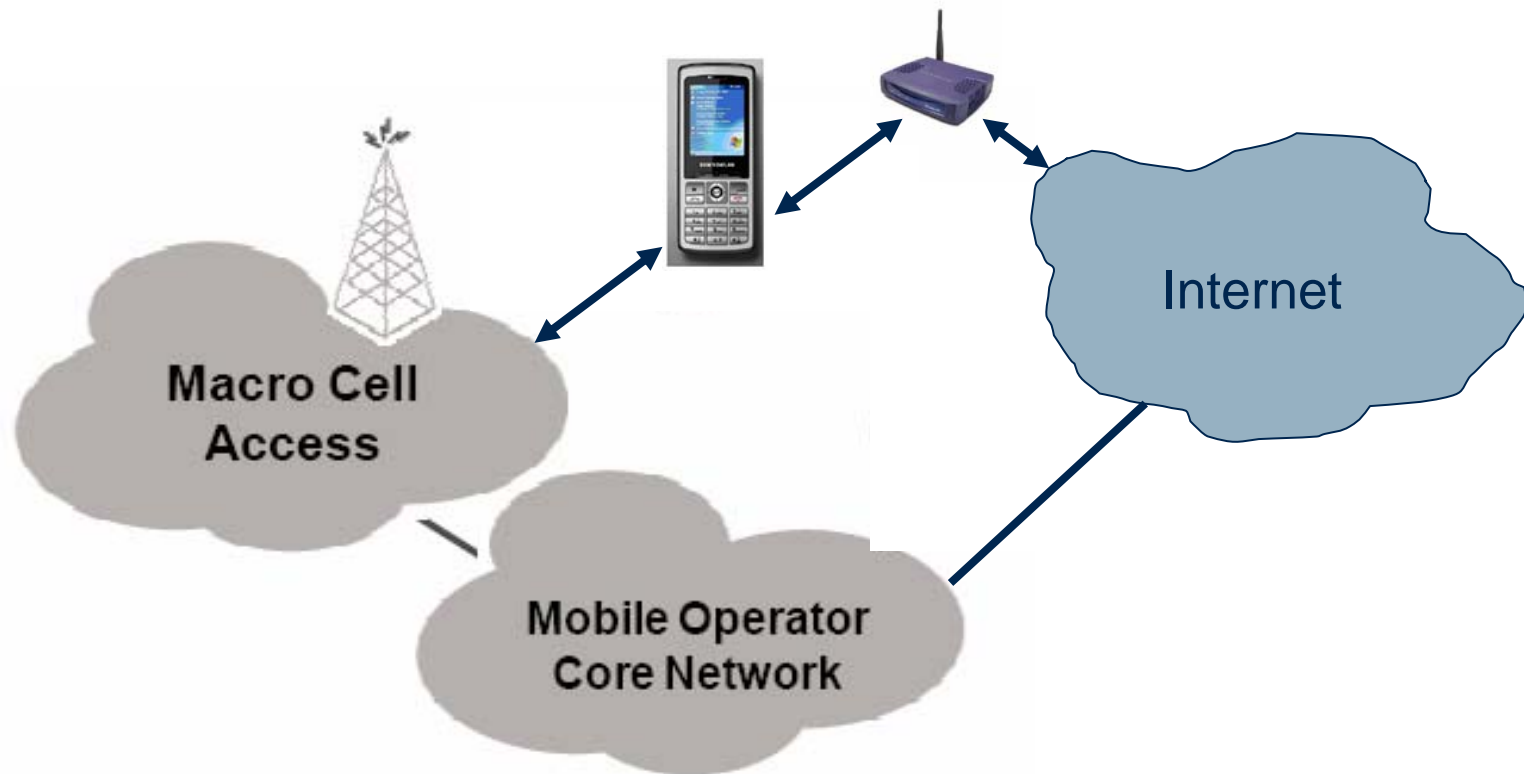
Smartphones



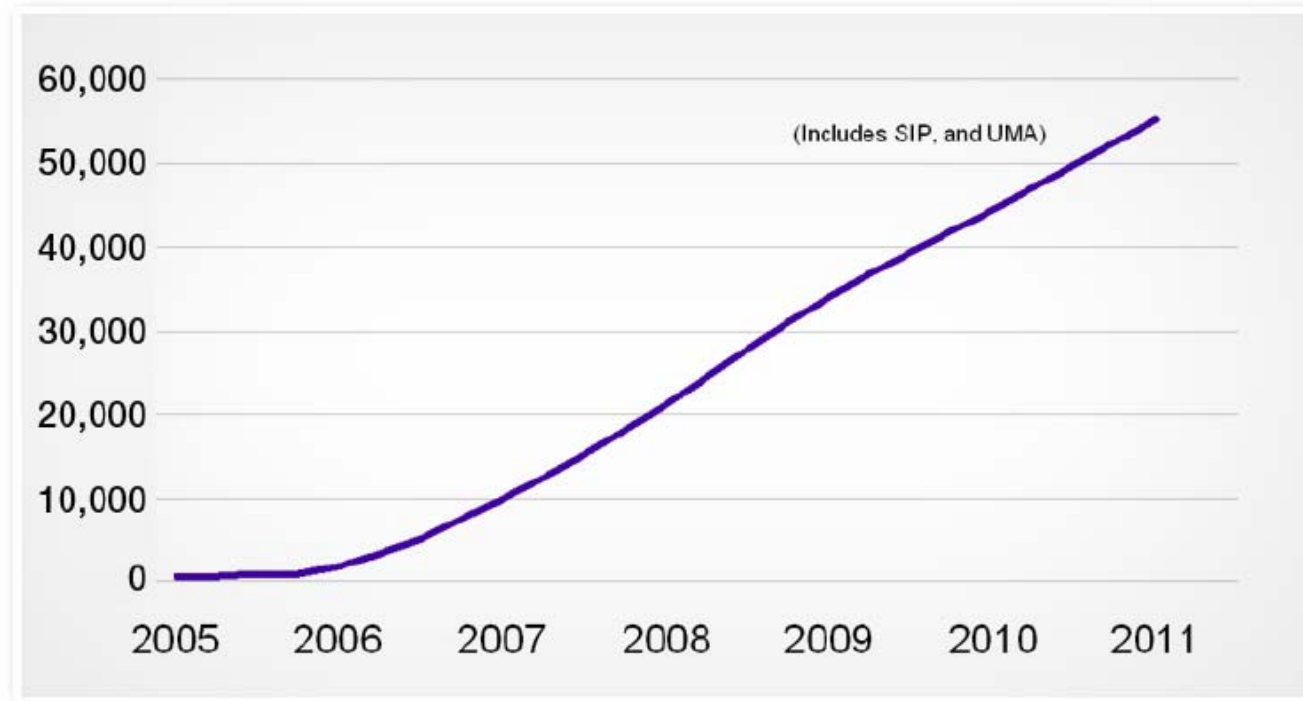
Dual-Mode Phones



Dual-Mode

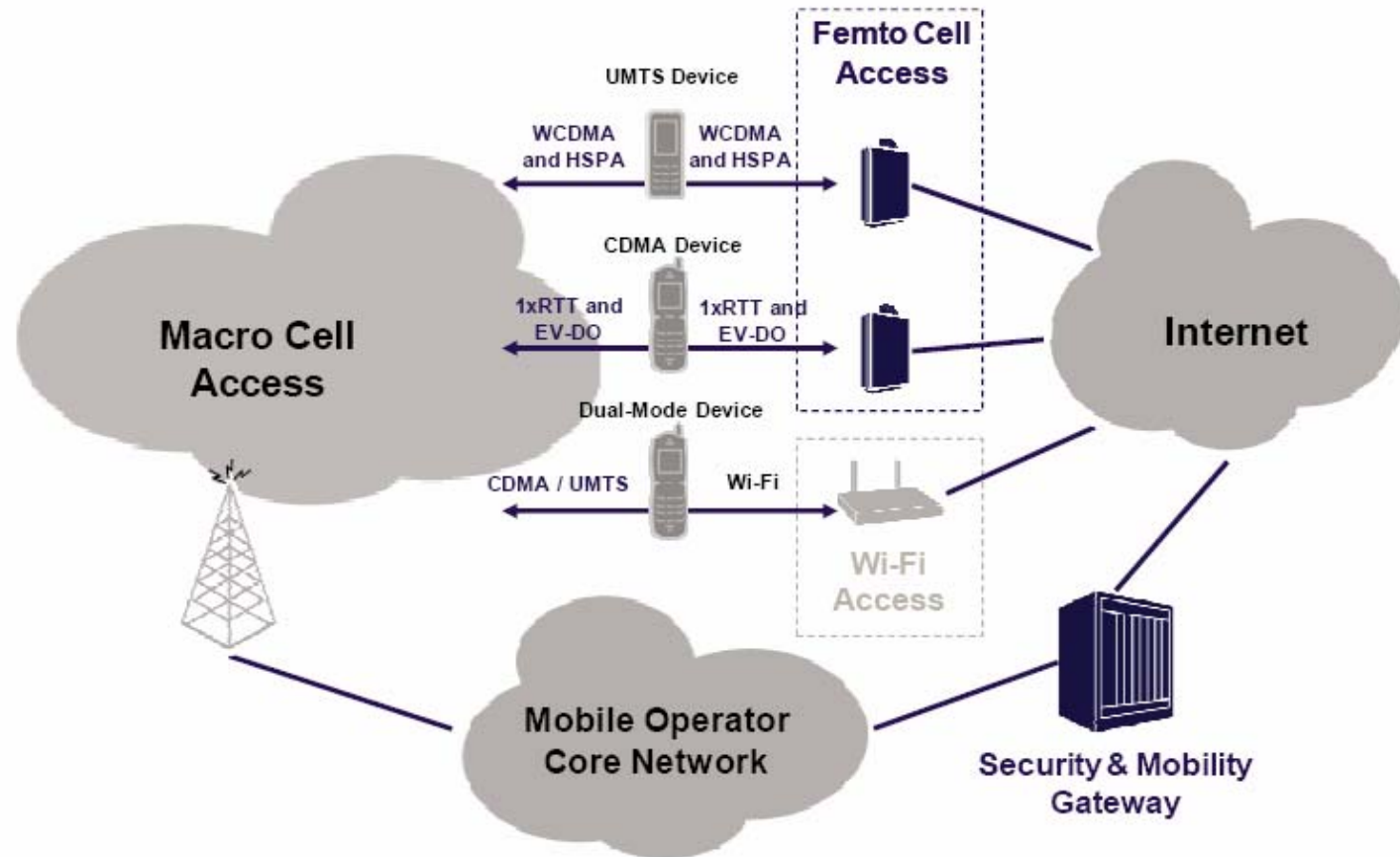


Dual-Mode

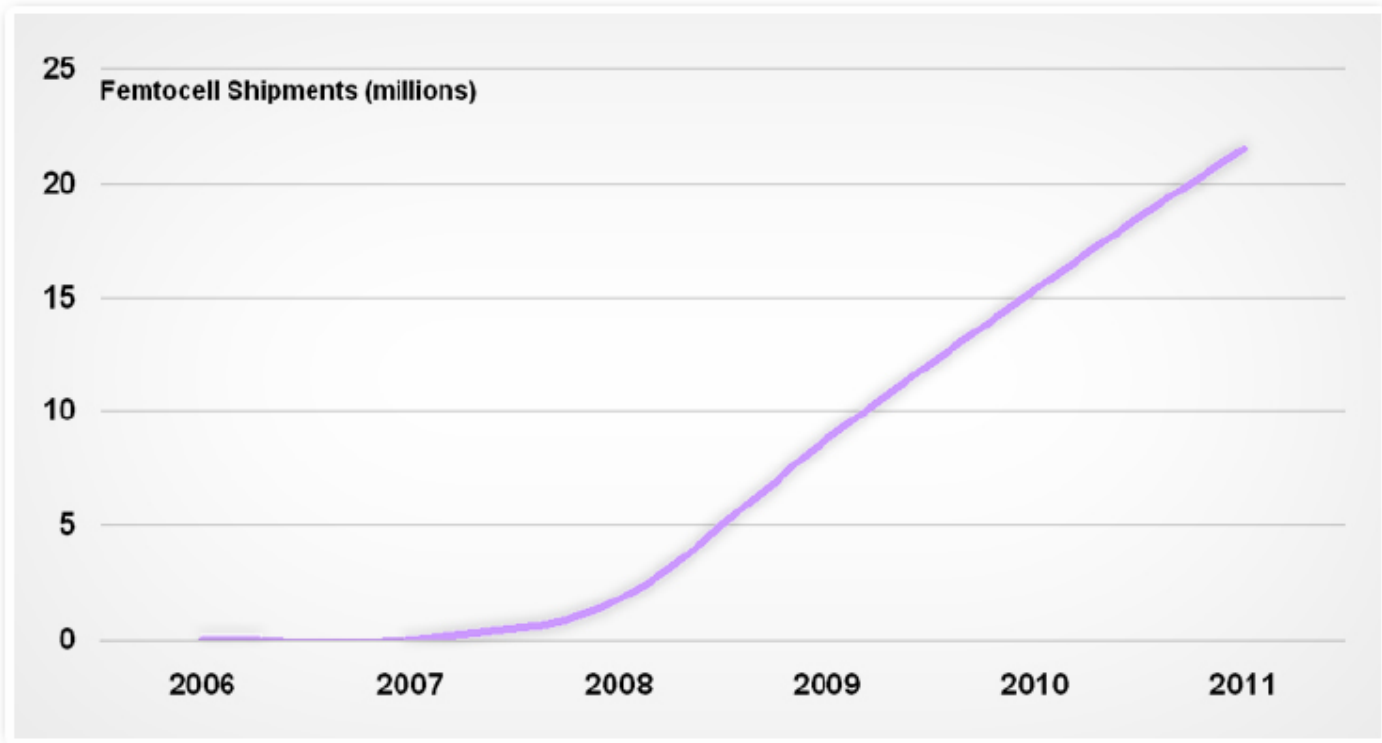


Source: In-Stat

Femtocells



Femtocells



Source: In-Stat

Summary

- WiFi moving everywhere
- WiFi MIMO is a WiFi booster
- WiFi and WiMAX will co-exist for a while
- If WiMAX takes off, it will impact WiFi “hotspots”
- WiMAX has been stalled by lack of infrastructure
- New efforts in Japan, Korea and North America should spur new device development and production
- WiMedia is gaining traction
- First applications likely to be “wireless USB”
- Cellular continues to grow; smart phones grow fastest
- 3G success has been limited in North America
- LTE still two years away

Thank You



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