

## Mobile WiMAX - Uncovered

Rob Inshaw GM Carrier Solutions, ANZ April, 2007



#### Agenda

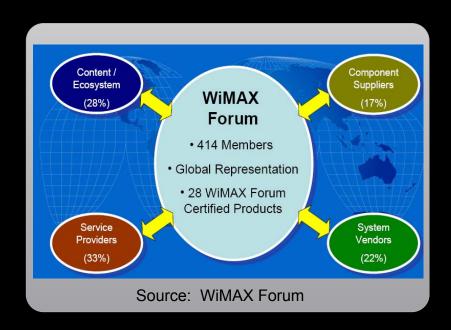


- > Introduction
- > WiMAX Market Adoption & Drivers
- > Hyper connectivity and WiMAX
- > WiMAX reality
- > Devices and Network Status
- > Nortel Momentum
- > Summary



#### **Strong WiMAX Ecosystem**

- > Broad based Ecosystem
- > Global representation
- > Cost effective personal broadband for everyone
- > Eliminate CPE cost with embedded chipsets
- > Standardised & Ubiquitous



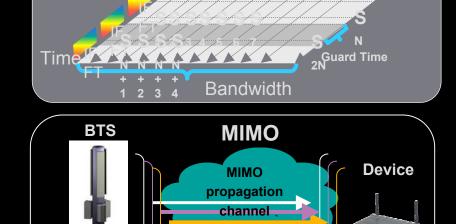
#### WiMAX is Key to Nortel's Future Growth

#### WiMAX Technology

#### WiMAX is the First 4G Mobile Broadband Access

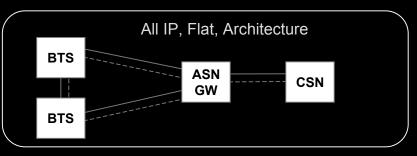
- Next Generation of Air Interface
- Spectrally Efficient
- Immune to Interference

- Better Performance at cell edge
- Doubles Capacity (2x2 MIMO)
- Reduced \$/Mbyte
- Small Antennas



**OFDM** 

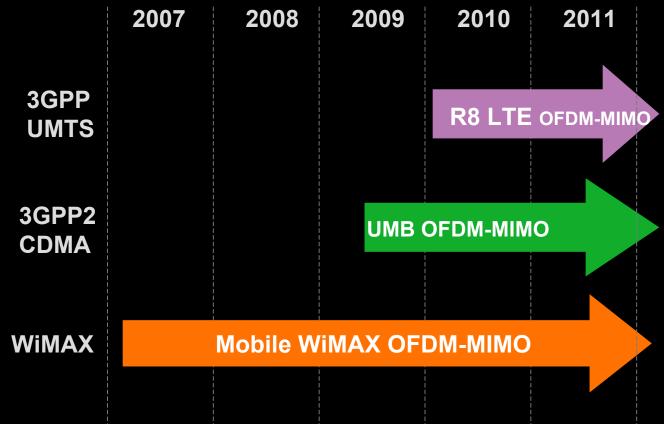
- All IP
- Flat, Low cost, Architecture
- No Legacy Circuit



N Tx and M Rx IVI
Multiple Parallel Channels







OFDM + MIMO is basis of all 4G technologies

#### Affordable Mobile Broadband for Everyone

#### > 2.5G 1xRTT / GPRS / EDGE

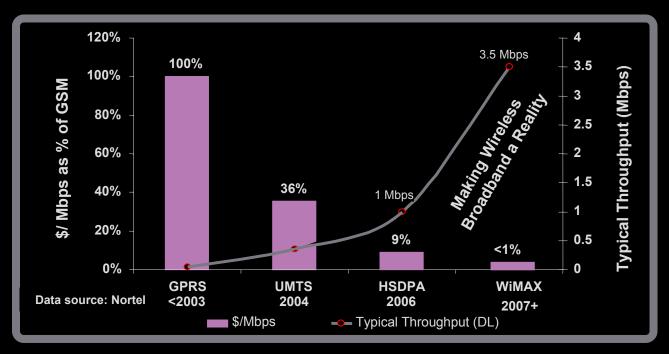
Introduced wireless data to the world

#### > 3G EV-DO / HSDPA

Mobile broadband viable but with limited capacity

#### > 4G WiMAX

The right cost structure → mobile broadband affordable for the masses



#### 1/10th the costs of 3G

- √ 3-4X Spectral efficiency
- ✓ Flat architecture Less Nodes to manage



## WiMAX Global Market Adoption & Drivers

#### Market Segmentation and Sequencing

WiMAX is the first 4G network – disruptive technology

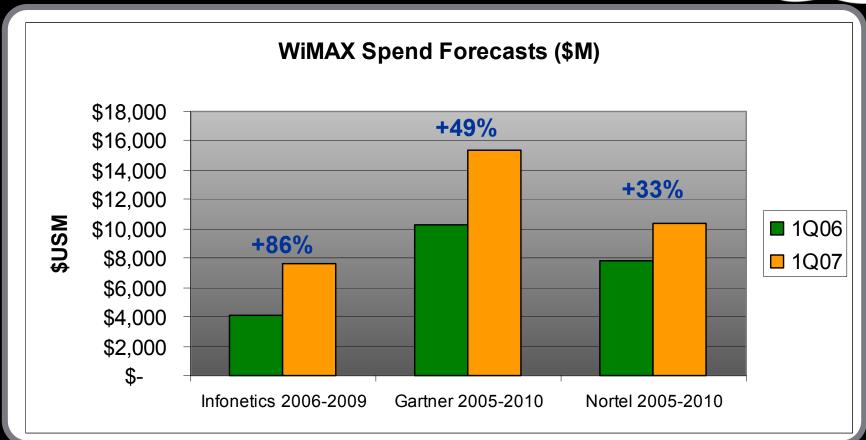


2007 2008 2009 2010 2G Leapfrog / 3G Migration **Underserved Broadband**  Traditional operators compelled by 4G ecosystem Fixed / Nomadic (↓ cost) DSL Alternative, VOIP Real-time applications with seamless mobility and QoS **Attackers**  Aggressive market-makers; Quad-play services Cable / Satellite / Alternative operators 4G Domino effect unfolds with Rev C & LTE along with WiMAX WiMAX will have ecosystem lead within 4G WiMAX Rollout Trials **UMB Demos Rollout Trials** LTE **Standards Demos Trials** Rollout

**Nortel Confidential Information** 



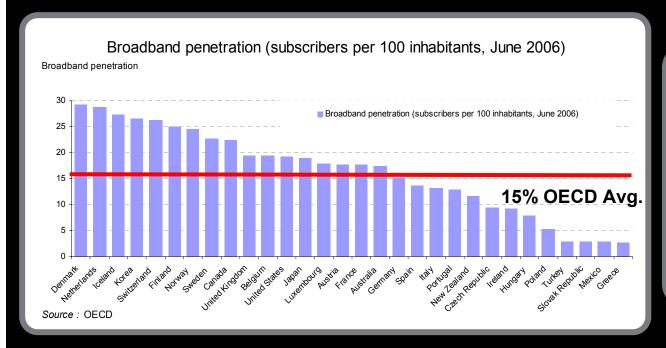




**WiMAX Market Opportunity continues to Grow** 

#### **Broadband Penetration**







- Many OECD countries > 60% Penetration of Broadband per household
- 60% of High speed lines subscribed in 2H 2006 in USA were mobile

**Huge Opportunity for Personal Broadband** 

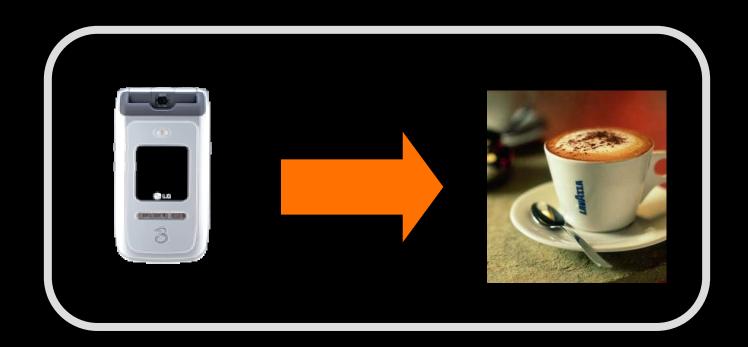


## WiMAX Mega Trend

Hyper connectivity

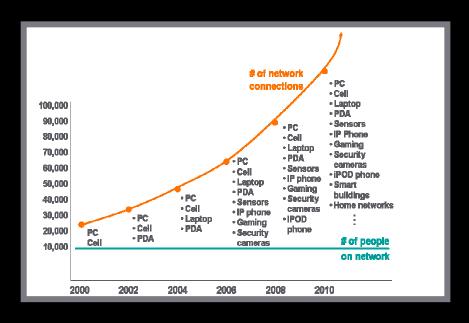


## My New 3G Phone



Jack of all trades → Master of None

#### **Hyper-Connectivity**





#### > Change the Paradigm

- One mobile does everything → All devices are always connected
- Multitude of portable consumer electronic devices

#### > Current Barriers to Hyper connectivity

- Experience
- Cost
- Billing & Provisioning

WiMAX will enable hyper connectivity



# Mobile WiMAX Status Are we there yet?

#### **WiMAX CPE & Device Acceleration**













**Market maturity** 

CE/HH embedded

Hyper-connectivity CE: LGE, Microsoft, HP, Apple, ...

#### WiMAX Enabled Enterprise Solutions



- > Target Digital Home/SOHO/SMB
  - SIP for cost savings and internet access bundling
  - "landline" look and feel device
- > Enterprise (WiMAX)
  - Centrex services
  - Unified Communications
- > Home (WiMAX)
  - SIP and internet access
  - SIP + home internet gateway
  - SIP + WiFi Router
- > WiMAX-enabled key system (WiMAX)
  - IP enterprise communication solution
  - Digital hybrid key system

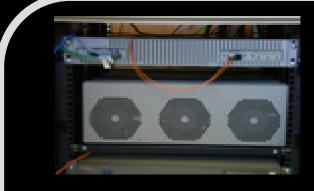






## **Network Status – Trials Underway**





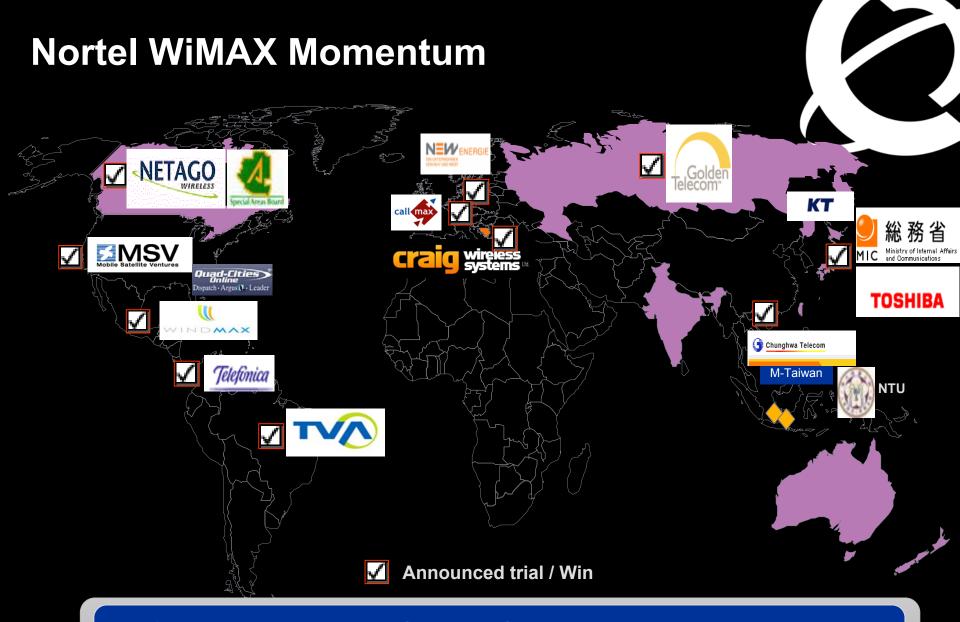








**Commercially Deployable 2H 2007** 



- 1st WiMAX Networks in Canada, Greece, Netherlands and Taiwan
- 1st End to End multi-vendor MIMO "over the air" call
- World's 1<sup>st</sup> demonstration of Collaborative MIMO





- > Mobile WiMAX is the start of 4G
- > WiMAX continues to build strong momentum Globally
- > Hyper connectivity is a key inflection point in personal broadband.
- > It is not just about mobility but Consumer Electronics
- > Trials are underway with deployment in 2H 2007
- > Nortel is building global momentum with WiMAX

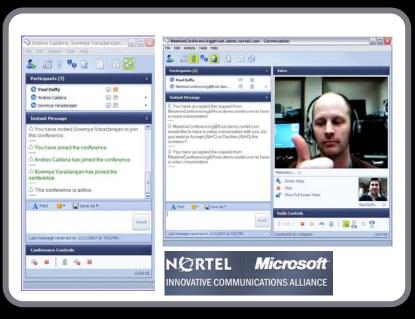


## Thank you

### **Communication Enabled Applications**

- > 1.3M text and voice messages are sent via Xbox Live every day totaling half a billion messages per year
- > 100M Mobile VoIP users by 2011
- > Wireless enabled mobile entertainment devices will make up 36% of VoIP devices sold in 2011









**Business** 

Consumer

**Packet Voice from Non Traditional Sources**