

TeleResources  
Engineering (Aust) Pty Ltd

## Mobile Wireless Overview



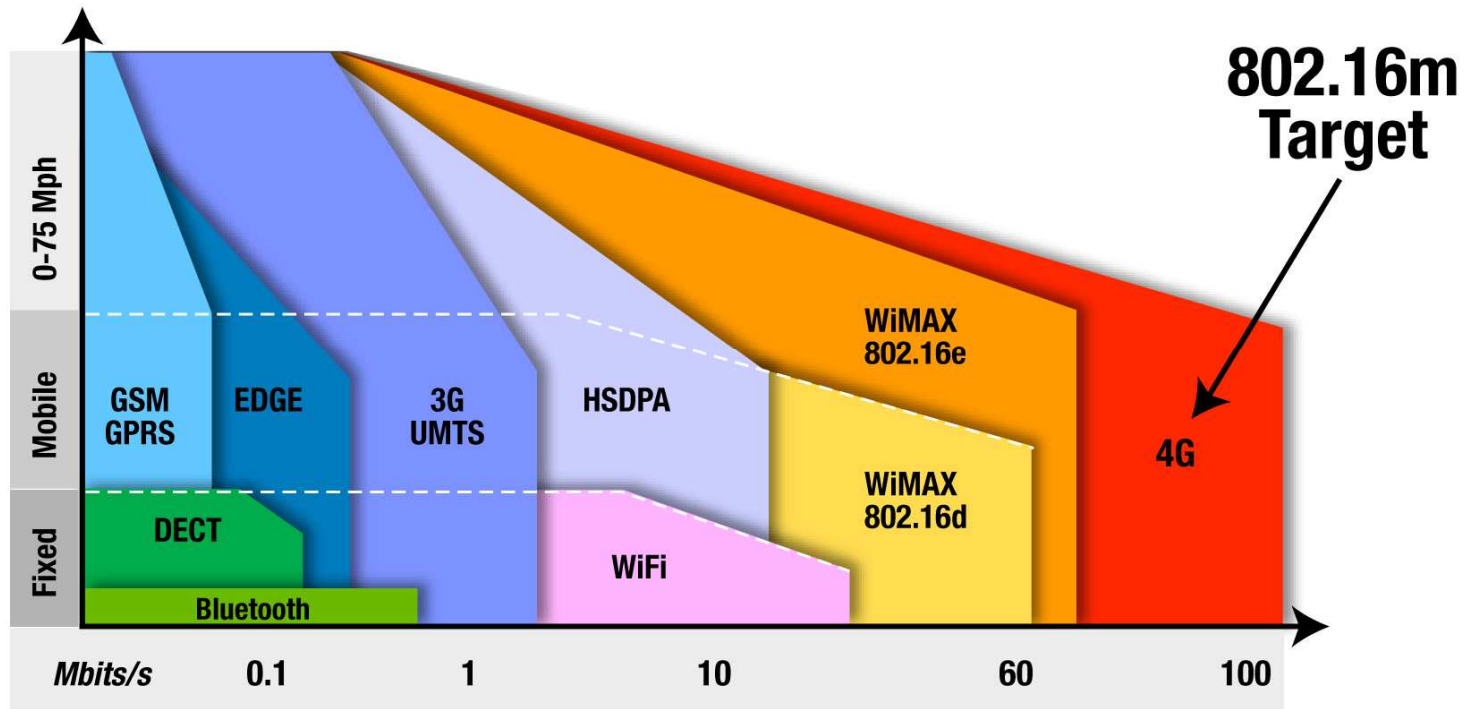
*ad·van·tage*

a superiority of position or condition a factor or circumstance of benefit to its possessor  
a benefit or gain especially a benefit resulting from some course of action



## Mobile Wireless Overview

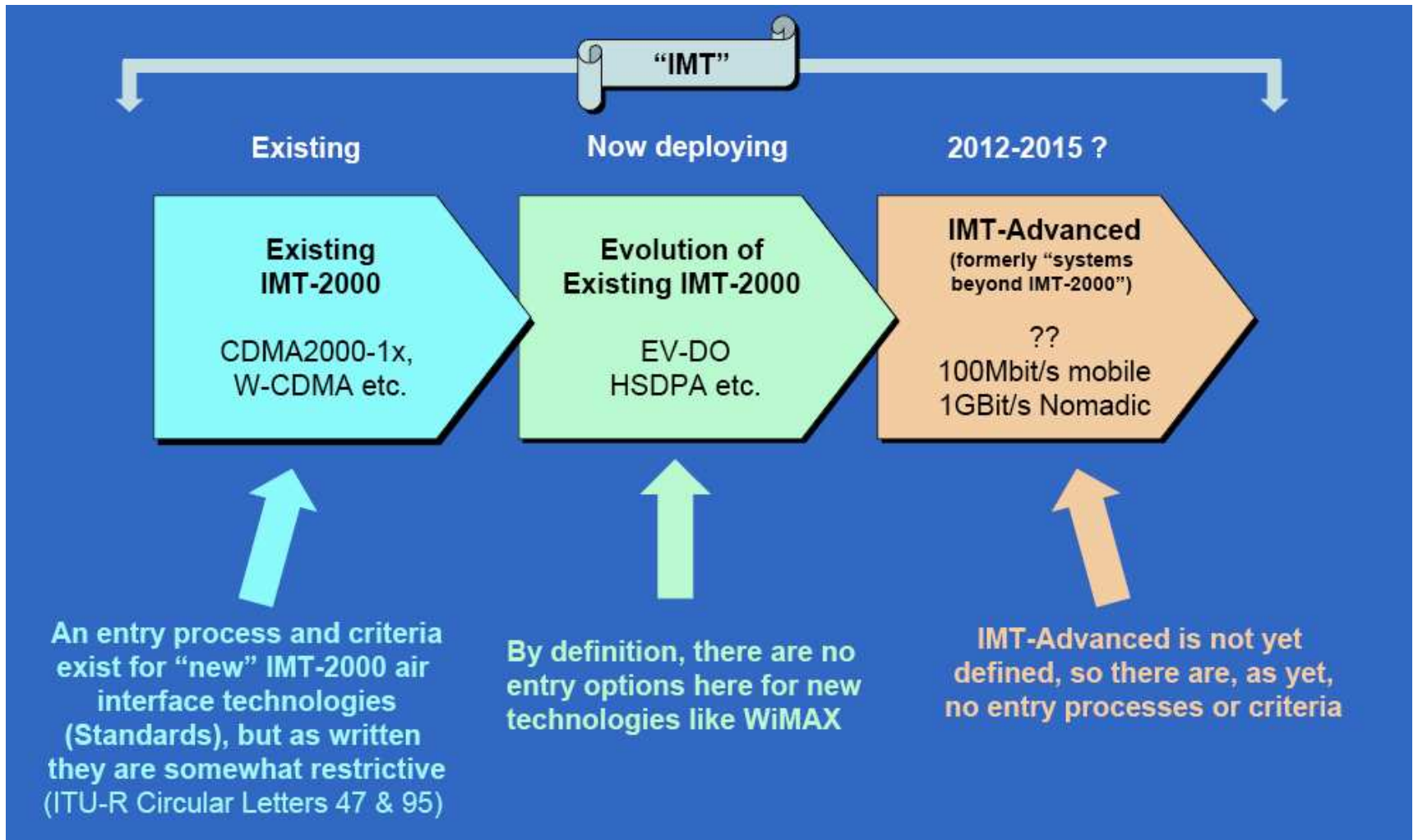
### Mobile Technology Characteristics



Download Sources: WiSOA, Siemens, ABI, Intel, Maravedis, Samsung, UMTS Forum, Nokia

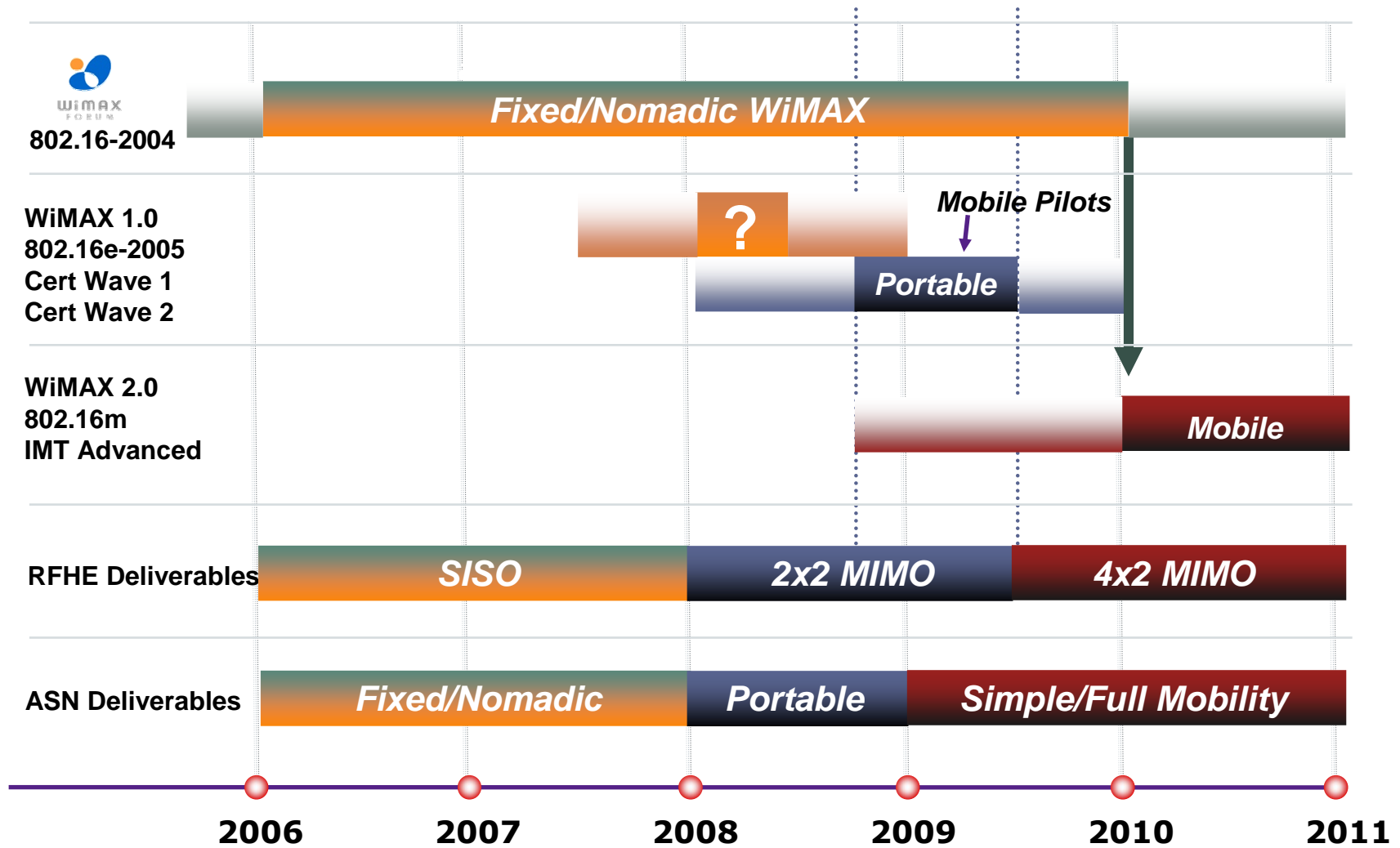


# IMT Mobile Technology Evolution



## Mobile Wireless Overview

### WiMAX development



### The realities of a mature mobile market

- Cost of national infrastructure build-out cannot be justified when
  - Almost every customer is already a customer of a competitor
  - Little opportunity for technology differentiation given mobile standard development
  - The customer demands go anywhere coverage on Day 1
  - Voice ARPUs are still dropping
  - Data ARPUs are still low
  
- As a consequence:
  - AAPT never built its CDMA network in the AMPS A band
  - Hutchison still has 2 x 20 MHz of spectrum in the 1800 MHz band that cost it more than A\$600 million lying unused
  - The administrators of One Tel finally sold its 1800 MHz spectrum to rail authorities in NSW and Victoria for a fraction of the A\$523 million it paid at auction
  - Qualcomm has never used the 2 x 10 MHz of 3G spectrum it purchased for A\$159 million in 2001



## Mobile Wireless Overview

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### Recent market developments

- Telstra decides to rationalise its mobile networks
  - Proposes to shut down CDMA network in January 2008
  - Has rolled out a UMTS-850 network across Australia (Next G)
  - Will not provide wholesale access to NextG
  
- Will be substantial lessening of competition in rural Australia as a consequence
  - ACCC has stated will not intervene
  
- Telstra's competitors face some difficult choices
  - UMTS-900 an option however would require extensive rebalancing of existing GSM-900 customers
  
- Optus has announced that it will have HSDPA available on all of its 3G sites by May 2007
  - Will expand coverage to 96% of the population over next three years
  - Expects to install between 2000 and 2500 new base stations
  
- Vodafone planning a 2G/3G network expansion independent of Optus
  - HSDPA coverage limited to the inner metro areas of Sydney and Melbourne



### Broadband Wireless

- Unwired - Navini network in Sydney and Melbourne
  - 60K retail customers mostly in Sydney
  - Controls 200 MHz of prime spectrum
  - ADSL replacement
  - But will it deploy Mobile WiMAX?
  
- Austar
  - Spectrum swap with Unwired for rural market
  
- Opel
  - \$1 billion of government funds
  - WiMAX overlay on its mobile network?
  
- Personal Broadband
  - Failed to achieve critical mass
  - Targeted SME marketplace



## Mobile Wireless Overview

### Apple's iPhone

- Mobile phones are about to become more user friendly
  - Essential if the Mobile Internet is to become a reality

