



MIKE WRIGHT

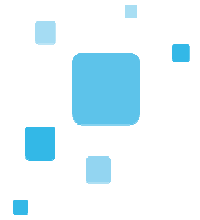
Executive Director
Wireless Engineering & Operations

**Building the Business Case for
Mobile Broadband**

The HSPA Evolution Path

Broadband World Forum 2009

Australia – a wireless snapshot



- >100% mobile penetration
- Single, national network:
> 2 million Sq kms >99% pops
- 850 MHz spectrum, 100% HSPA
- High speed backhaul to 84% pops, of which 76% is Ethernet
- Built on a new, lower unit cost platform and globally-dominant technology roadmap

Telstra Next G™: Always 3G

Strong wireless demand driving results

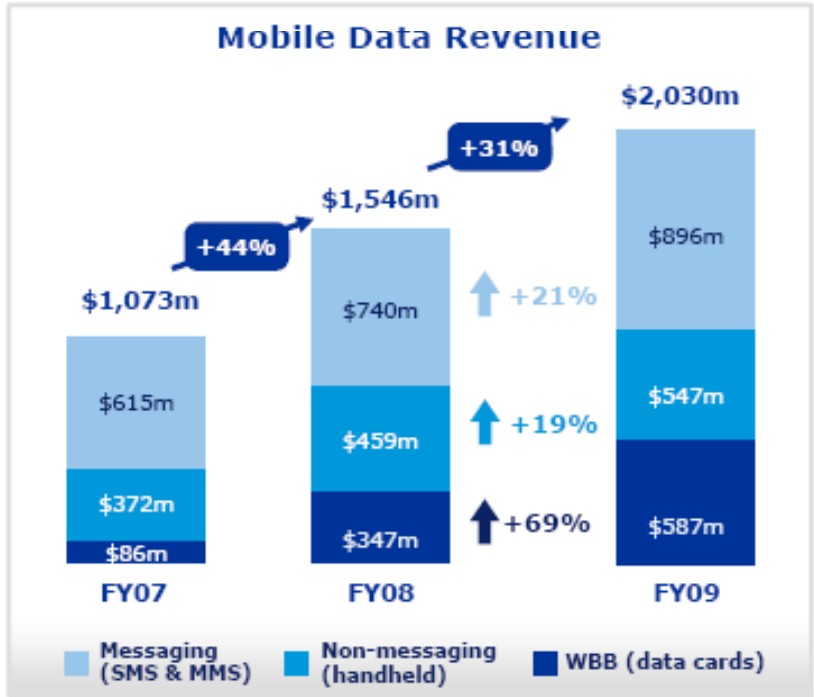


10.2 million wireless customers, up 9%

Wireless network traffic doubling every eight months

Mobile data revenue (data cards) up 31%

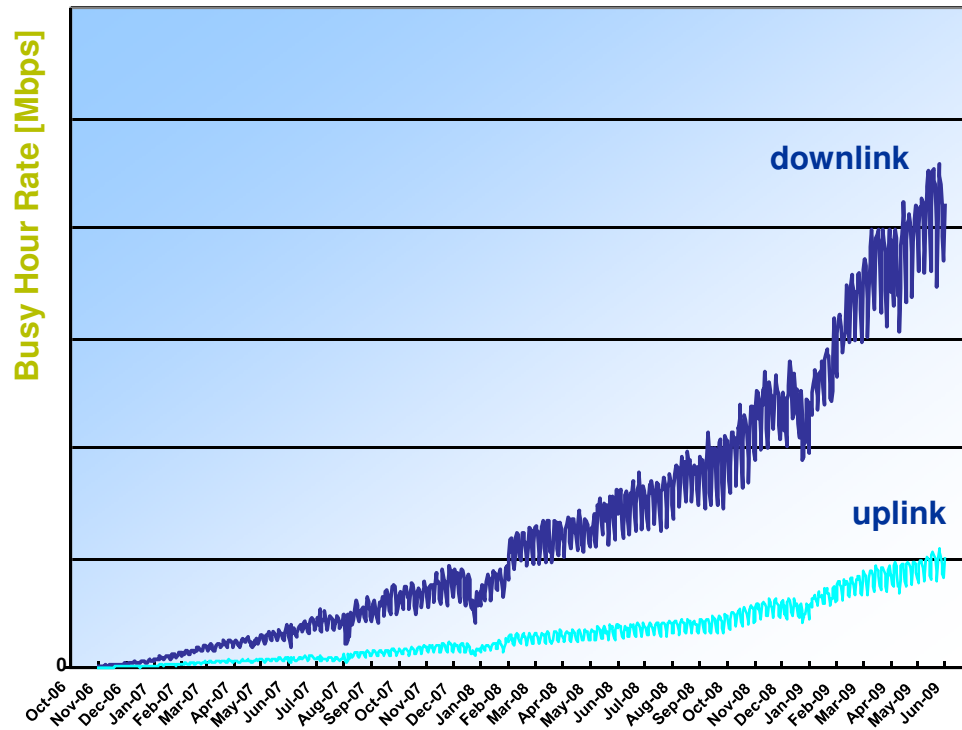
11 billion mobile MOU, up 9%



More than 60% of handsets on 3G
3G SIOs over 6.3 million

Over 50% of data revenues non-SMS

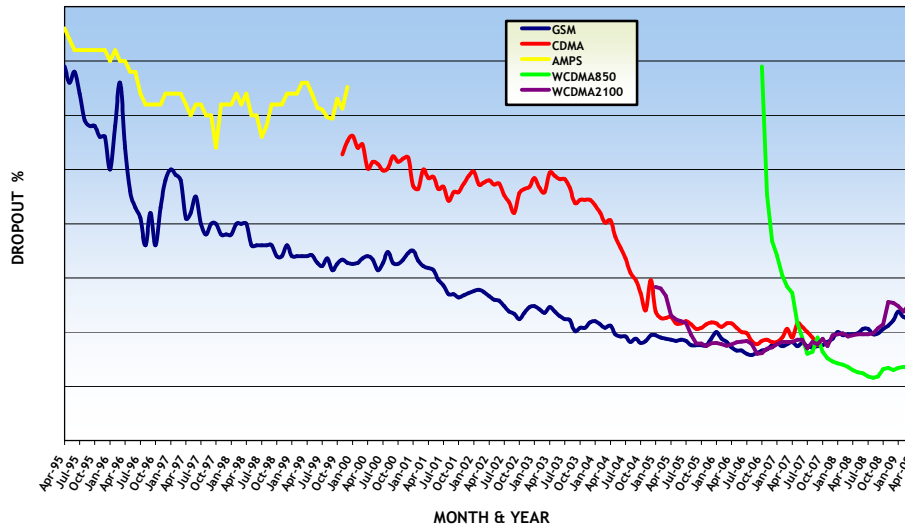
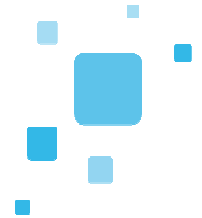
3G driving wireless HSPA data traffic



These trends will continue, driven by :

- Smarter devices with richer & more integrate applications
- Increased take-up of m2m as connected devices become ubiquitous
- New and emerging enablers eg Near Field/Payments

Reliable performance and high speeds are available today with HSPA+

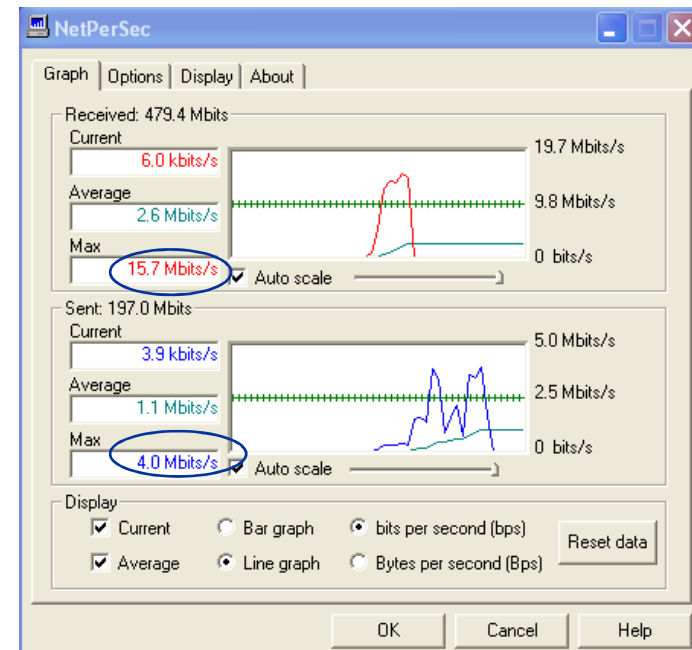


Dropout rate best ever

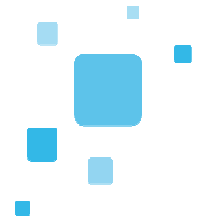
- well below 1%

HSPA+ 21 Mbps Peak Network Devices :

- typical user speeds 550-8 Mbps
- bursts higher



Independent Network Assessment



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- i) We observed physical layer data rates in the downlink over a single 5MHz FDD channel which exceeded 18Mbps, including in a vehicular environment while driving through the Melbourne CBD. From the two hotel rooms where we were staying the average application layer data rate, as provided by an outside cell site, was well above 8Mbps at any time that we did a measurement test and exceeding 17Mbps during the early morning hours. Over the duration of our testing we observed data rates of at least 5Mbps more than half of the time and 10Mbps data rates and higher were prevalent a fair amount of the time as well. On those occasions when the observed data rate wasn't at least 3Mbps while testing with a single device we were "disappointed" or we knew that we were in a very challenging environment.

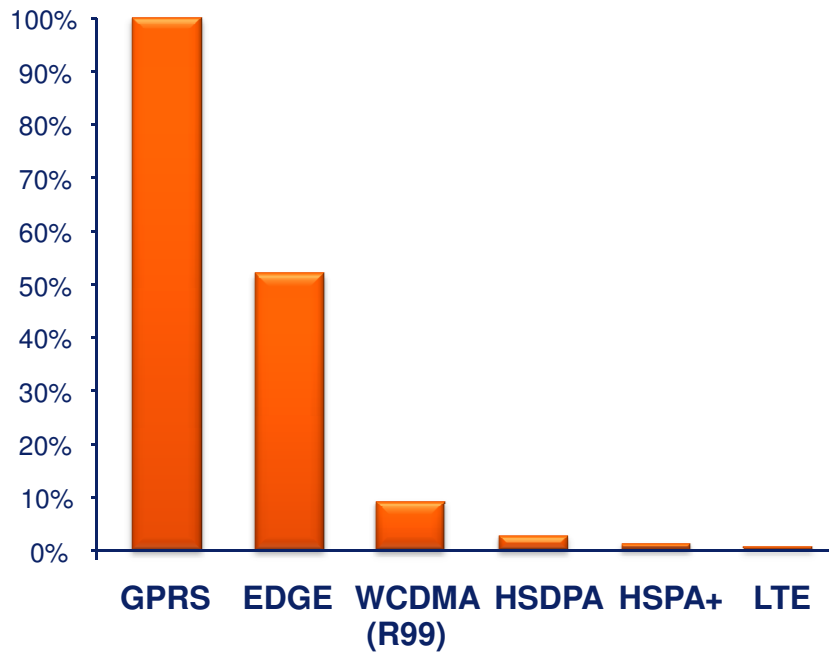
Signals Research Documents on HSPA testing contain extensive test results & observations

Why follow technology ?

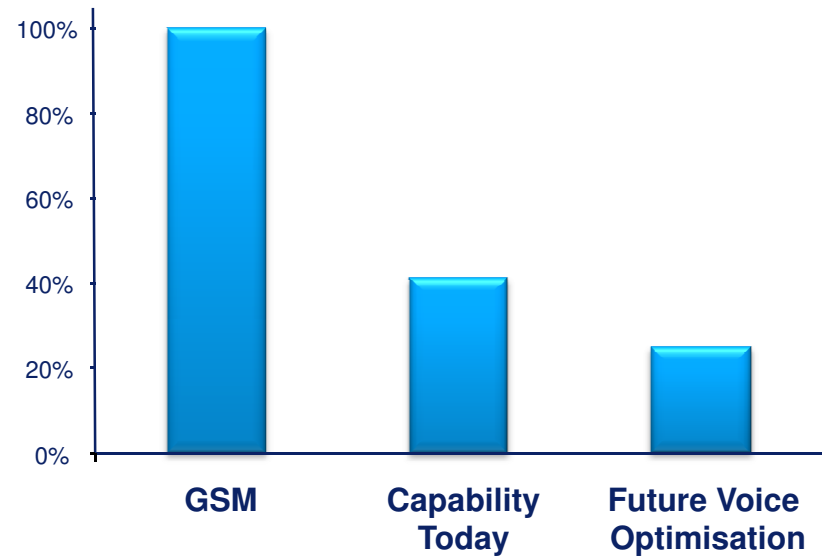
Unit cost comparisons



Cost per MByte as % of GPRS

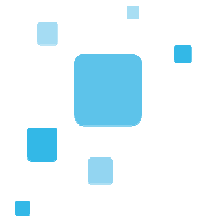


Cost of Voice as a % of GSM

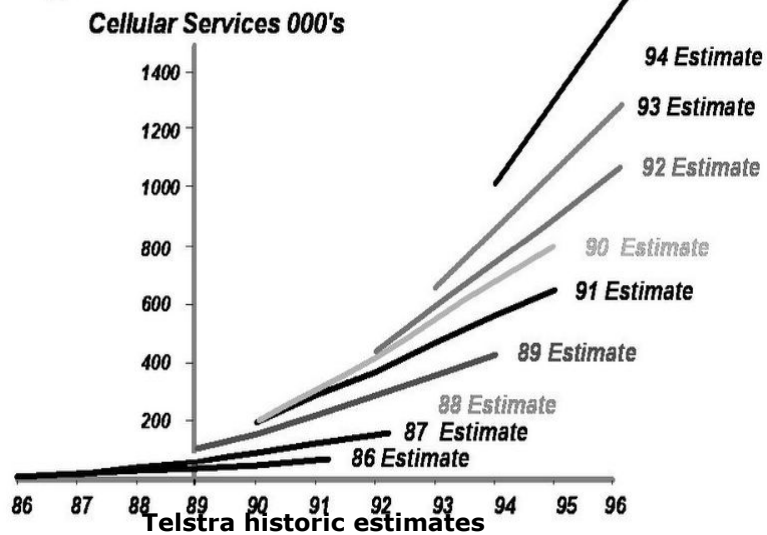


* Telstra derived relative Wireless network unit costs

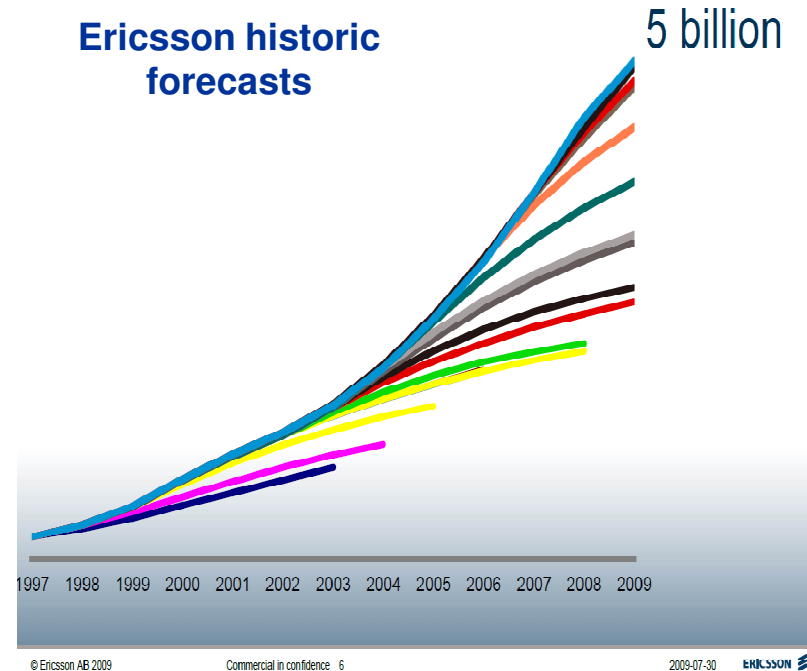
Demand Assumptions are traditionally low



Growth Has Always Been Higher Than Predicted



Ericsson historic forecasts

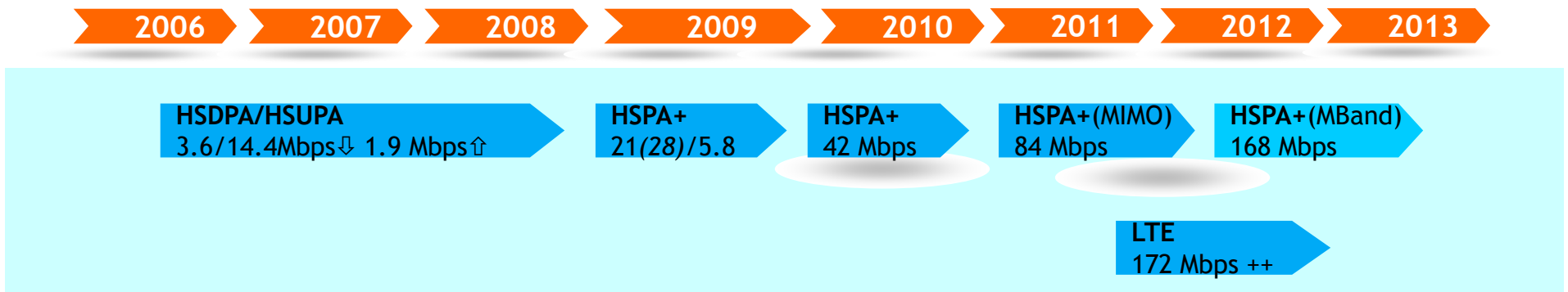


We need to look ahead to new ways to carry impending demand

LTE – Why, How, When

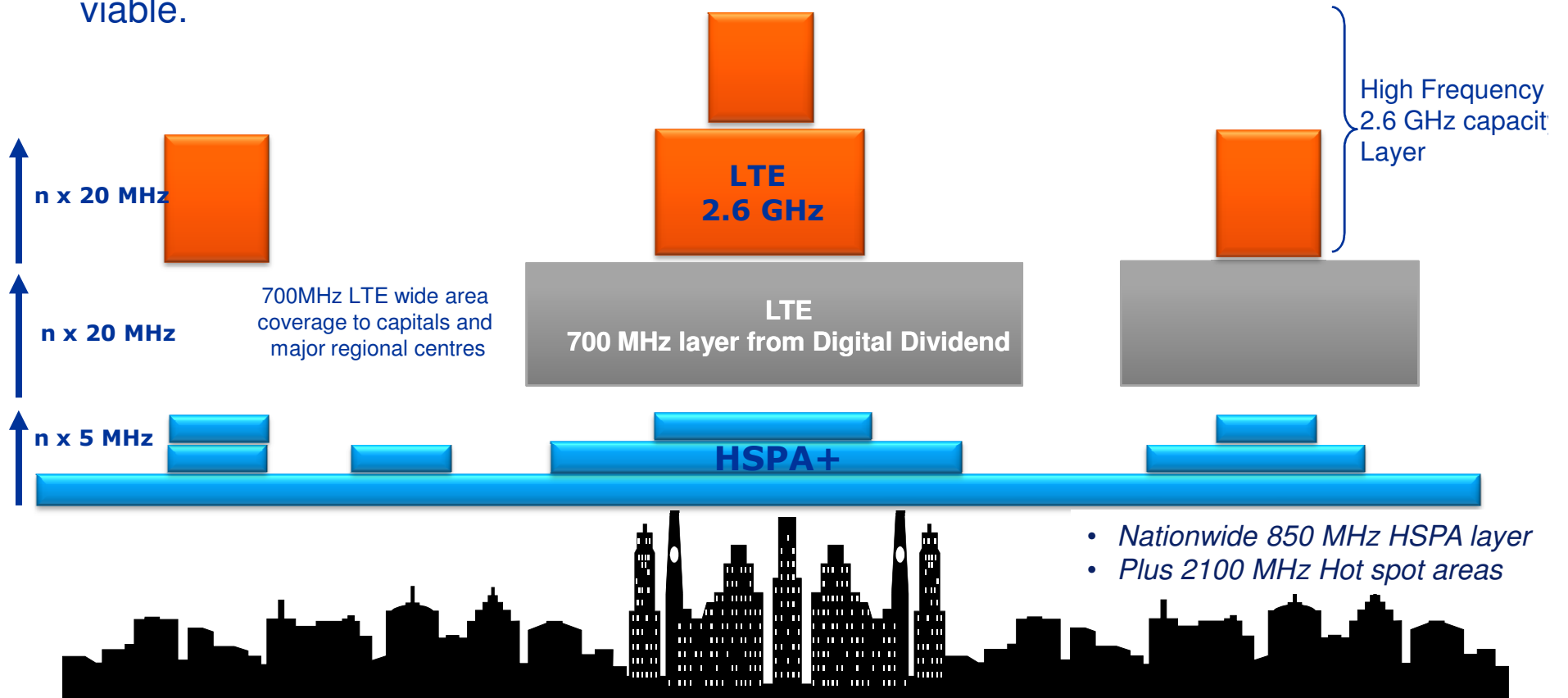


- Our roadmap has LTE as our technology of choice for 4G deployment.
- LTE is not a revolution for our architecture
- We see evolution to LTE largely as an overlay to allow us to continue to deliver quality of service and throughput to an increasing number of users and applications on our network.
- Finally, Australian LTE deployments will be influenced by availability of spectrum and the order in which different spectrum bands become available.
- The Telstra philosophy essentially is to use low frequency bands for coverage and, when that starts to use up the spectrum, use high frequencies in the dense areas for capacity.

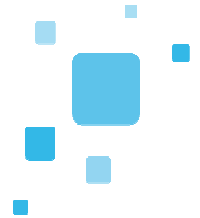


Radio deployment options to LTE

- LTE at high frequencies and 20 MHz bandwidth channels will **give superior speeds**
- Due to **coverage limitations** at higher frequencies smaller islands of capacity in dense traffic areas are more likely/viable as building a full coverage layer at 2.6 GHz would require additional sites above even a 2100 WCDMA network rollout and still suffer in-building losses.
- **Lower frequency LTE** would make larger 'start-up' coverage layers/islands more viable.



Taking the HSPA road to LTE



- HSPA+ provides us with a solid roadmap to deliver new and innovative Wireless Broadband services.
- Demand for Wireless Data will continue to grow
- LTE provides an important evolution in order to support the demands of growth and future services.