

SmarTone-Vodafone

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4G LTE Development in Global Market

- Overseas markets with 2500/2600 MHz spectrum
 - Norway – three operators
 - Sweden – four operators
- A few operators will rollout 4G LTE on other frequency bands
 - 700 MHz band – Verizon and AT&T (U.S.) by end 2009/early 2010
 - 2100 MHz band – DoCoMo (Japan) by 2011
- Major European operators also plan to use existing 1800 and 2100 MHz spectrum for 4G LTE

4G LTE Development in Global Market

- 4G LTE standard is frequency neutral – can be implemented on 700, 900, 1800, 2100 and 2500/2600 MHz bands
- Technology risk on LTE1800 is minimal
 - Network vendors will support 4G LTE on 1800MHz
 - Chipsets for 4G LTE terminals will support multiple frequency bands from Day 1
 - 4G LTE on 1800MHz will be commercially ready soon after 2500/2600MHz

Our Valuation of 2500/2600MHz Spectrum

- To implement 4G LTE on 1800MHz, additional costs need to be incurred to build more cell sites to compensate for less spectrum in 1800MHz (\$160m)
- To implement 4G LTE on the new spectrum, there is saving from return of excess spectrum to government (\$140m)
- New spectrum value = \$160m + \$140m = \$300m

Our Valuation of 2500/2600MHz Spectrum

- Spectrum value could be stretched up to \$400m under:
 - A lower WACC, or
 - A very aggressive network implementation plan
- We pushed the bid price to \$500m

We will implement 4G LTE on 1800MHz

Additional Advantages of 4G LTE on 1800MHz

- Better in-building coverage because of
 - Lower frequency => superior in-building coverage, especially in the HK cityscape
 - Higher cell site density in our 4G LTE on 1800MHz implementation
- For those who implement 4G LTE on 2500/2600MHz, 30% more base stations is needed to achieve the same level of in-building coverage

Additional Advantages of 4G LTE on 1800MHz

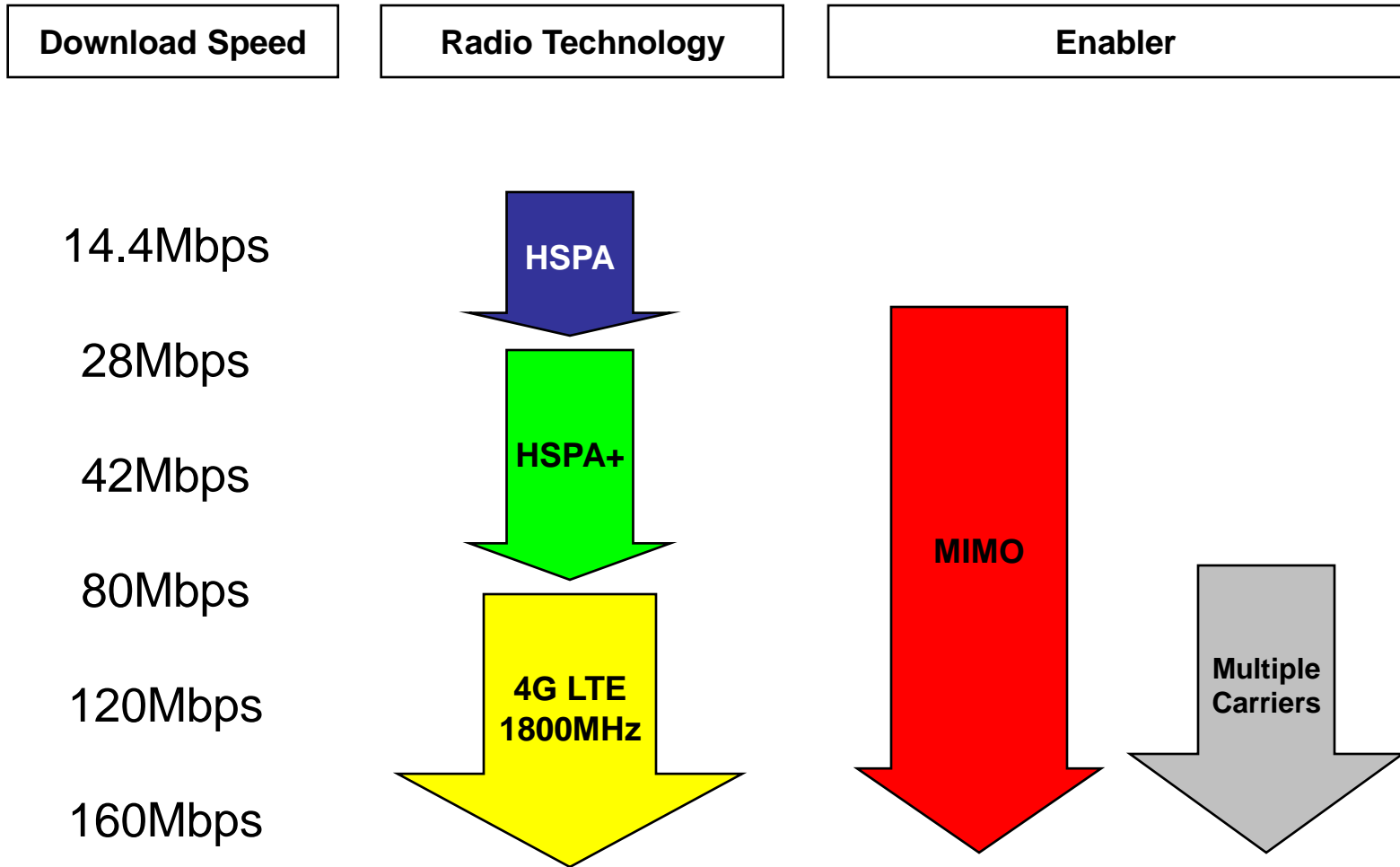
- Rollout pace will not be bounded by BWA spectrum conditions
- Savings in
 - Spectrum fee – over \$500m
 - Performance bond – \$150m

Speed & Capacity ---

2 sides of the same coin

- Currently very few broadband / Internet applications require speed beyond, say 5-8Mbps
- Customers' broadband experience of speed depends on many factors, e.g. IPLC traffic / congestion and Internet servers' capacity
- Higher network capacity is enabled by higher speed as more customers can be served simultaneously without compromising on usage experience

Our Network Evolution Plan



Migration to 4G LTE

- We are already planning for 4G LTE implementation
 - Our network is All-IP ready and providing unlimited backhaul capacity to cater for future demand of 4G LTE
 - Our core network is also 4G LTE ready
- We are working with technology partners to formulate an action plan to upgrade our network to 4G LTE on 1800MHz when required
- We are also planning for an early trial of LTE technology