

# Regulatory Environment for Wireless Data Communications

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# Regulatory environment

- Regulatory environment applicable to telecommunications sector in general applies to wireless data communications
  - ⊕ Liberalising the market
  - ⊕ Promoting competition

- Liberalising the market
  - ⊕ Lowering the entry barriers
  - ⊕ Number of operators to be decided by market unless physical constraints (e.g. spectrum availability) exist
  - ⊕ Making spectrum available
- Promoting competition
  - ⊕ Maintaining a level playing field
  - ⊕ Withdrawing regulation when the market is already effective

# Making spectrum available

- OFTA has been offering spectrum to the market when the spectrum is vacant, potential demand exists, technology (with open standards) is ready and equipment is commercially available
- “Command and control” is general approach, but 3G spectrum auctioned in 2001
- Industry is kept informed and consulted through Radio Spectrum Advisory Committee and individual consultations

# Spectrum policy review

- CITB commissioned a consultancy study on Spectrum Policy Review in January 2006
- Consultants presented findings to parties interviewed in June 2006
  - ⊕ Wider application of market-based approach in spectrum management
  - ⊕ More information to industry about future supply of spectrum
- Public consultation expected to be initiated in the near future

# Current status

- Four 3G (WCDMA) networks
  - ⊕ Licensed in 2001
  - ⊕ Service launched 2004 – 2005
  - ⊕ HSDPA now available
- 2.5G, 2.75G and 3G customers: 23% of all mobile customers
- 3G customers: 11% of all mobile customers
- Wi-Fi access points: 743 on OFTA register

# Future developments of interest

- Continuity of CDMA coverage
- TD-SCDMA
- Broadband wireless access (BWA)
- Municipal (city-wide) Wi-Fi

# Continuity of CDMA coverage

- Hutchison's licence for IS-95B extended for three years up to 19 November 2008 with 2.5 MHz x 2 in 800 MHz band
- Mainland has 35 M CDMA users (8% of all mobile users on Mainland)
- Macao licensed one CDMA2000 1X network in August 2006
- Worldwide, 275 M CDMA users (13% of all mobile users in the world)

- Future of CDMA coverage in Hong Kong beyond November 2008 to be decided
- Steps leading to licensing
  - ✦ Public consultation
  - ✦ Designing auctioning procedures
  - ✦ Consultation on auctioning procedures
  - ✦ Subsidiary legislation
  - ✦ Spectrum auctioning
- Lead time to be allowed for new network to be constructed (if decision is to maintain CDMA coverage) – 12 months

# TD-SCDMA

- Four 3G operators have 5 MHz TDD spectrum assigned under their existing licence
- It is their commercial decision whether to launch a new TD-SCDMA system in the TDD spectrum
- If market demand exists but is not satisfied, OFTA may have to consider other options

# Broadband wireless access

- OFTA initiated consultation in December 2004 and August 2005
- Conclusions pending reviews on spectrum policy and fixed-mobile convergence (FMC)
- Spectrum policy review – public consultation will be initiated in the near future
- FMC regulatory review – public consultation period to end on 13 October 2006

- WiMax standard

- ⊕ IEEE 802.16e - 2005 (mobile) standard approved in December 2005

- ⊕ Equipment certification

- IEEE 802.16 – 2004 (fixed) : second half of 2005

- IEEE 802.16e – 2005 : second half of 2006

- ⊕ Equipment commercial availability

- IEEE 802.16 – 2004 (fixed) : 2006

- IEEE 802.16e – 2005 : expected in 2007, but large-scale availability expected in 2008

## ● Spectrum allocation issues

### ⊕ 3.4 – 3.6 GHz band

- Potential interference with fixed satellite services

### ⊕ 2.3 – 2.4 GHz and 2.5 – 2.69 GHz bands

- 2.5 – 2.69 GHz band reserved for 3G (IMT-2000) expansion by ITU
- 2.5 – 2.69 GHz allocation to be reconsidered in ITU World Radiocommunication Conference 2007
- “Technology neutrality” in the use of the band is advocated by some OECD countries
- “Technology neutrality” principle is also adopted in Hong Kong

- BWA licensing/deployment (examples only)
  - ✦ South Korea: KT and SK Telecom launched WiBro service in June 2006
  - ✦ Japan: A company called Yozan is constructing a mobile WiMax network in Tokyo
  - ✦ USA: Sprint Nextel announced to build mobile WiMax network, trial late 2007, launch 2008
  - ✦ Australia: Unwired uses pre-WiMax technology to provide service in Sydney and Melbourne

- BWA licensing/deployment (examples only)  
(continued)
  - ✦ UK: PCCW is providing service in Thames Valley and parts of London using UMTS TDD technology
  - ✦ UK: BT is conducting trials of pre-WiMax equipment rural areas
  - ✦ France: Licences issued in July 2006
  - ✦ Singapore: Spectrum auctioned May 2005
- Consultation on BWA licensing in Hong Kong to be reactivated

# Municipal Wi-Fi

- Carrier licence required
- No regulatory entry barrier
- Both 2.4 GHz (2.4 – 2.4835 GHz) and 5 GHz (5.15 – 5.35\*, 5.470 – 5.725 and 5.725 – 5.850 GHz) bands available
- No interference protection as bands are shared with unlicensed use
- Whether to invest is a commercial consideration

\*Indoor use

# Conclusions

- New radio technologies bring many investment opportunities
- Market is best to decide which and when
- Making spectrum available will facilitate investment
- Public/consumer benefits should be primary considerations
- Some parallel actions are necessary in the steps leading to assignment of spectrum

Questions welcome