Broadband Wireless Access In China
National Regulations Case Study

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Marketing Background

National Radio Regulatory Framework

State Council

Ministry of Information Industry

RRD (State Radio Office)

SRMC & SRSME

Provincial Governments (autonomous regions and municipal cities)

Local Radio Regulatory Organizations

Representative Offices of Local Radio Regulatory Organizations

Radio Monitoring Stations

Radio Monitoring Stations

Organizational Structure:
- Administrative Leadership
- Operational Guide Relationship

Central Government
Local Government
Technical Organization
Main Players in the Telecom Market

- Two mobile service providers
  - China Mobile
  - China Unicom
- Two fixed service providers
  - China Telecom
  - China Netcom
- One Satellite service provider – China Satcom
- One new entrant—China Railcom
Market Access Policy in China

- Basic telecom services provided by the 6 state-owned companies (broadband wireless access is classified as a basic telecom service).
- Non-basic telecom services such as ISP, ICP, VSAT, etc., are less regulated.
- More than 10,000 licenses have been issued, most of which are allowed to operate only in the local areas.
Marketing Share Among 6 Basic Telecom Service Providers in China

- China Mobile: 36%
- China Unicom: 15%
- China Railcom: 2%
- China Netcom: 16%
- China Satcom: 0.1%
- China Telecom: 31%

Source: PPTN

Telecom Revenue by Services in China

- Mobile Communication: 47.11%
- Satellite Communication: 14.54%
- Local Call: 0.36%
- Long Distance Call: 5.54%
- Pager: 0.05%
- Data Communication: 32.39%

Source: PPTN
The Revenue Growth Rate of Telecom Services in China (Jan-May, 2004)

The development speed of data communication and Internet Access is on the top.

The Growth of Broadband Internet Access Subscribers in China (present and future)

Source: CNNIC
The BW market is growing worldwide, and its development in Asia-Pacific region is very fast.

- BWA and data communications are increasing their contribution to generate more profits in Chinese telecom market.
Frequency Bands for BW Access in China

- A. 2.4GHz ISM band for TDD
- B. 5.8GHz ISM band for TDD
- C. 3.5GHz band for FDD
- D. 26GHz band for FDD LMDS

Frequency Planning for 3G

- Spectrum needs:
  - 360MHz by the year 2005
  - 510MHz by the year 2010
- ITU Standards
  - WCDMA, CDMA2000, TD-SCDMA
- Technical experiments
  - MT net testing
  - Field testing
The Principles of Frequency Planning

- Frequency bands allocated by ITU.
- Encourage use of common and open standards.
- Support high efficiency of spectrum usages.
- Carefully study the EMC issue before adding new radio services or applications into the National Frequency Allocation Table.
The Procedure of Frequency Planning

- Investigating spectrum needs (e.g. market demand)
- Studying technical standards (including foreign experiences, regulations and common practices)
- Conducting technical experiments (e.g., communication capability validation and EMC analysis)
- Deciding frequency bands, quantity, power limit, …… etc.

The Frequency Availability for BW Access in Near Future

- A. 3.3GHz band for TDD shared with radio location services (candidate band for Wimax)
- B. 5GHz band re-planning adopted by WRC-03 (candidate band for Wimax)
- 3G extension band (2.6GHz)
Regulatory Policies

2.4GHz Frequency Band

- Frequency range 2.4-2.4835GHz
- Power Limit 100mW
- Transmission TDD
- ISM band shared by WIFI(802.11b,IEEE), Bluetooth, RFID, as well as P-P/P-MP communication systems etc.
- Exemption of license
5.8 GHz Frequency Band

- Frequency range 5.725-5.85 GHz
- Power limit 500mW
- Transmission TDD
- Shared by WIFI(802.11a,IEEE), P/P-P/MP system etc.
- Licensed frequency band only open to basic telecom service operators

3.5 GHz Frequency Band

- Frequency range 3400-3430 GHz/3500-3530 GHz
- Transmission FDD
- Shared with FSS
- Licensed band only open to basic telecom service operators
- First case of introducing bidding procedure in frequency allocation
26GHz Frequency Band

- Transmission FDD
- Licensed band
- Used as wireless optic fiber, only open to basic telecom operators
- Every operator can get at least 56MHz bandwidth

SUMMARY
Today, Broadband Access develops fast globally as well as in China.

Wireless technology is an important means to have access to high data rate and broadband communications.

The importance of radio spectrum availability has been recognized by the whole industry.

Since Broadband Wireless Access technology has a great potentials in markets and is vital to the development of ICT industry, efficient use of frequency and additional frequency bands are required in the near future.

Thank you

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