



信息产业部电信研究院

China Academy of Telecommunication Research

Wireless Mobile Communications Trends

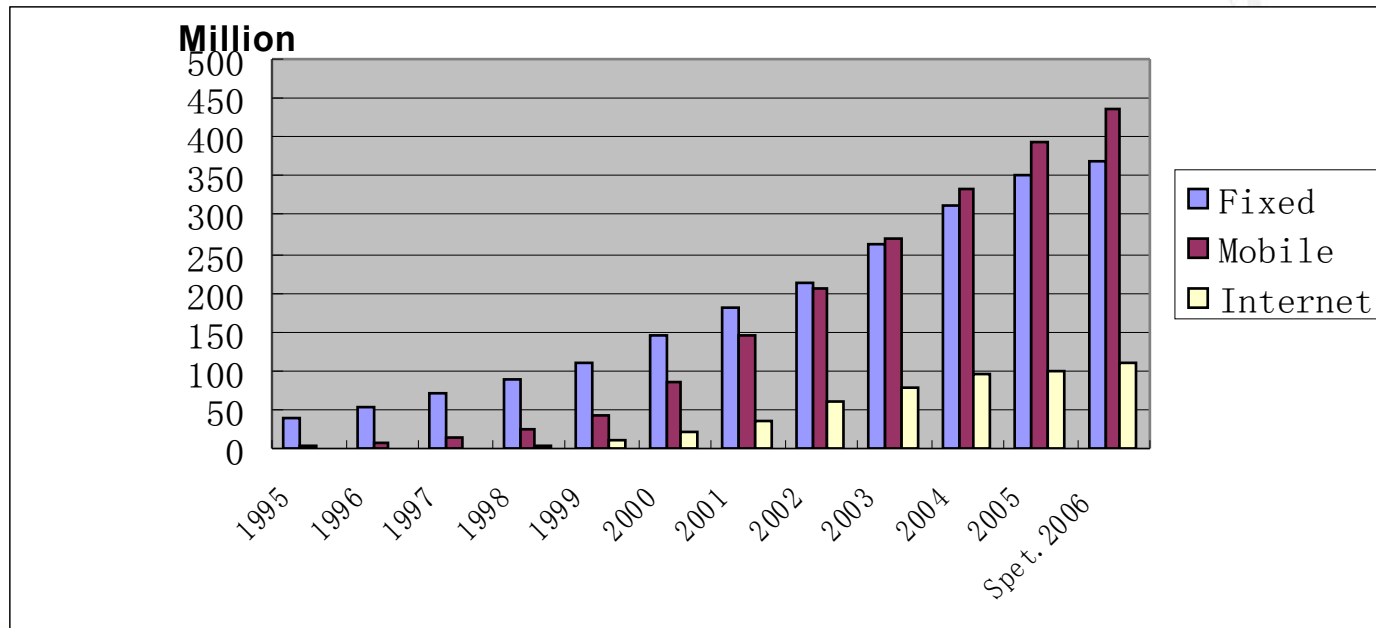
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Rapid Growth of Mobile service in China

- 443 million mobile subscribers(about 92% GSM, 8% CDMA), 369 million fixed subscribers, more than 130 million internet users by the end of September 2006;
- **Mobile phone penetration 33.9%, Fixed phone penetration 28% ; Internet penetration 108%**
- Mobile subscribers overtook fixed in 2003
- 1 billion in 2020, with the penetration of 60%.



Mobile data service is taking off

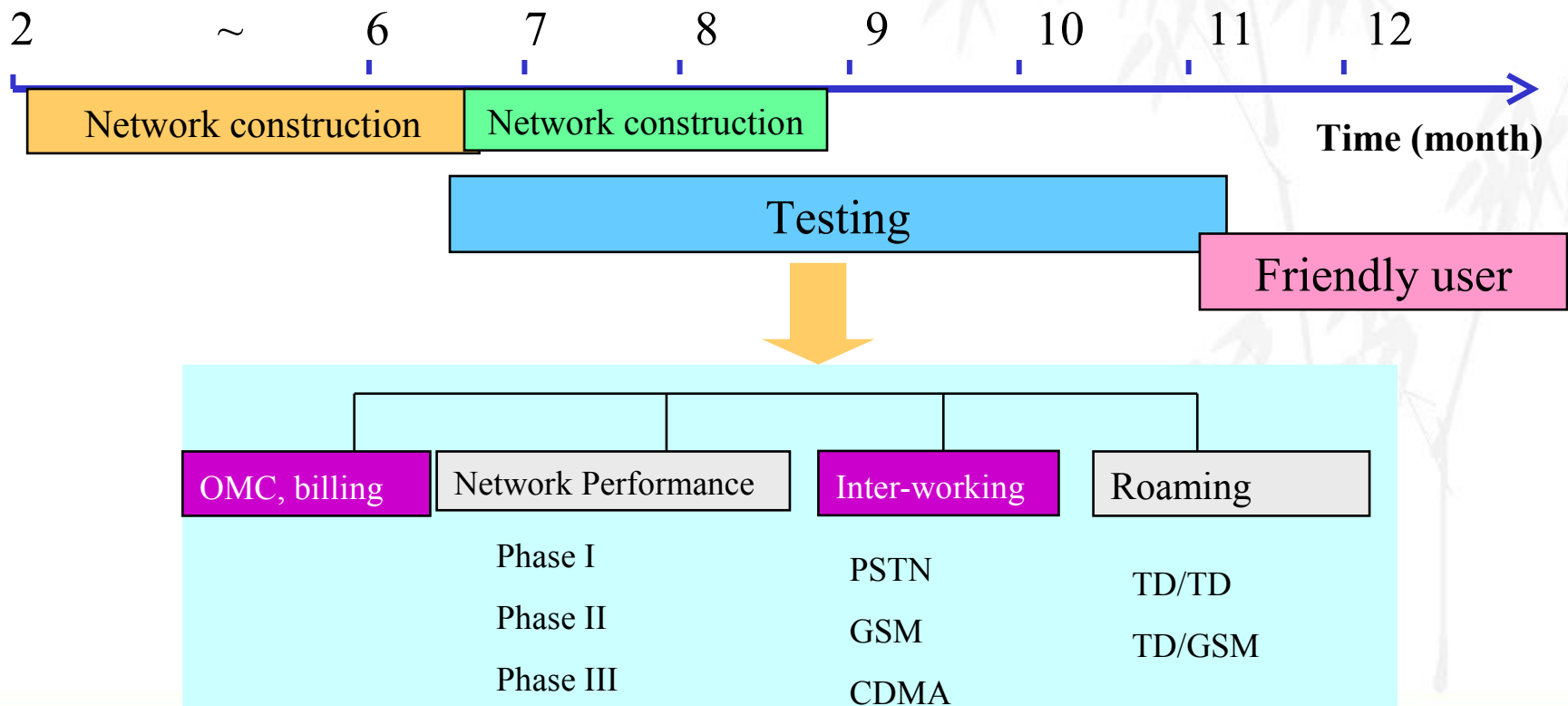
- China Mobile's mobile data service revenue reached 24.7% by June 2006, compared to 18.0% at the end of 2005.
- “Color Ring “ has become a new fad, MMS are growing.
- SMS grew by 42% to 310 billion by the end of 3Q06, compared to 2005; during 2006 Chinese New Year, there were more than 12.6 billion SMS against 11 billion in 2005.
- Mobile packet data subscribers increased 46 million during 1H 2006 to 117 million in China
- E-mail, Web browsing, blog and other internet services become more popular
- Mobile Music
 - ⊕ Revenue of mobile music crossed over traditional CD business, especially “Color Ring ” ;
 - ⊕ one popular web song was downloaded more than 15 million times.

Mobile TV

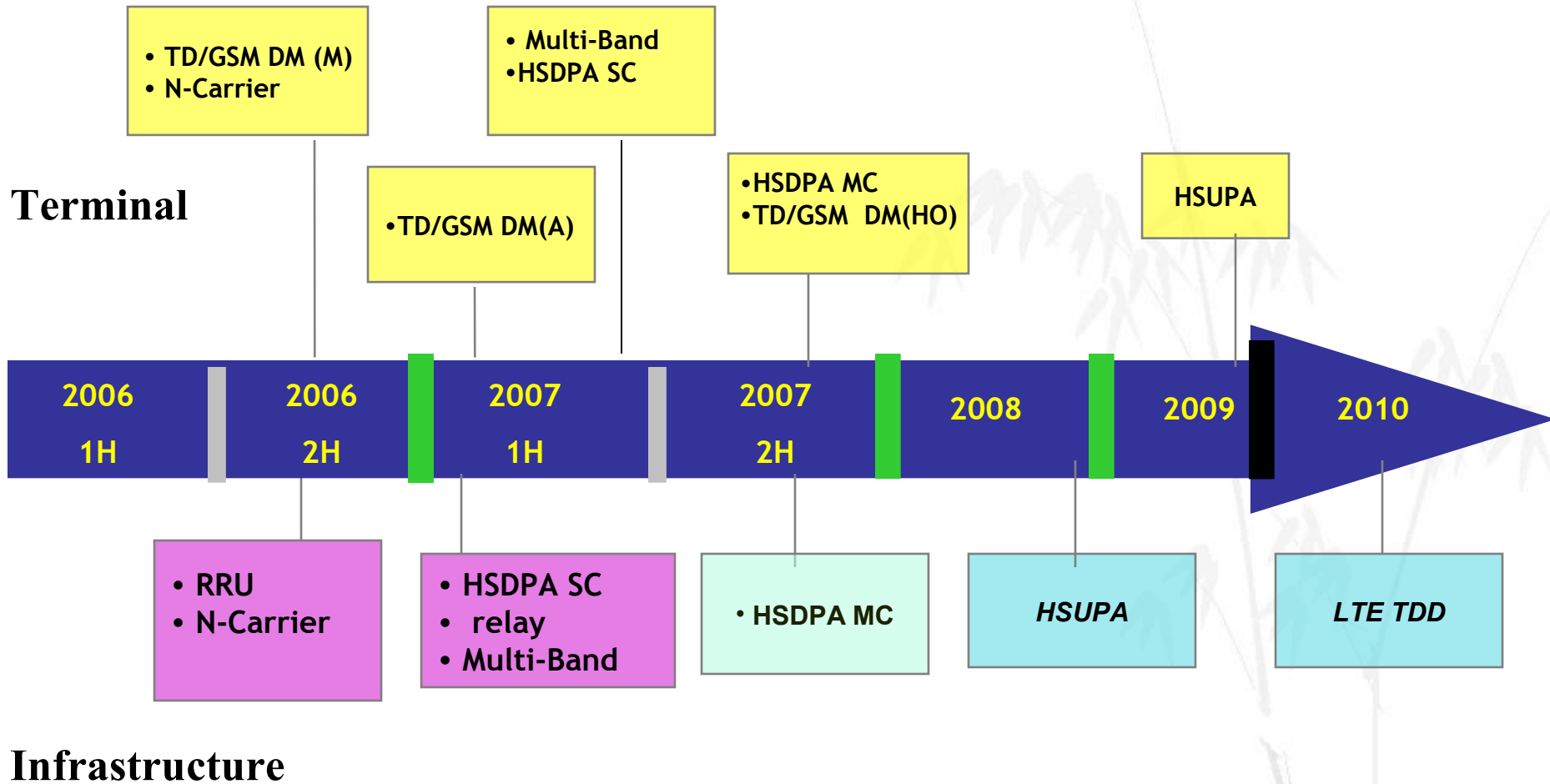
- Mobile Streaming
 - ⊕ Mobile streaming on existing 2G/2.5G/3G networks
 - ⊕ Mobile Broadcast/Multicast technologies: MBMS 、 BCMCS
- Broadcasting network (Downlink) + Mobile communication network (Uplink):
 - ⊕ Digital Terrestrial Broadcasting technologies
 - DVB-H, MediaFLO,T-DMB
 - ⊕ Satellite broadcasting technologies
 - S-DMB
- Development in China
 - ⊕ DAB(T-DMB) trials in Beijing, Shanghai and Guangzhou;
 - ⊕ Satellite + Terrestrial: STiMi (Academy of Broadcasting Science and Technology),
 - ⊕ Other proposals: DMB-TH (Tsinghua University's), T-MMB (NuFront) ,etc.
- Challenges: standard, spectrum, policy and regulation.

TD-SCDMA Field Trial Progress

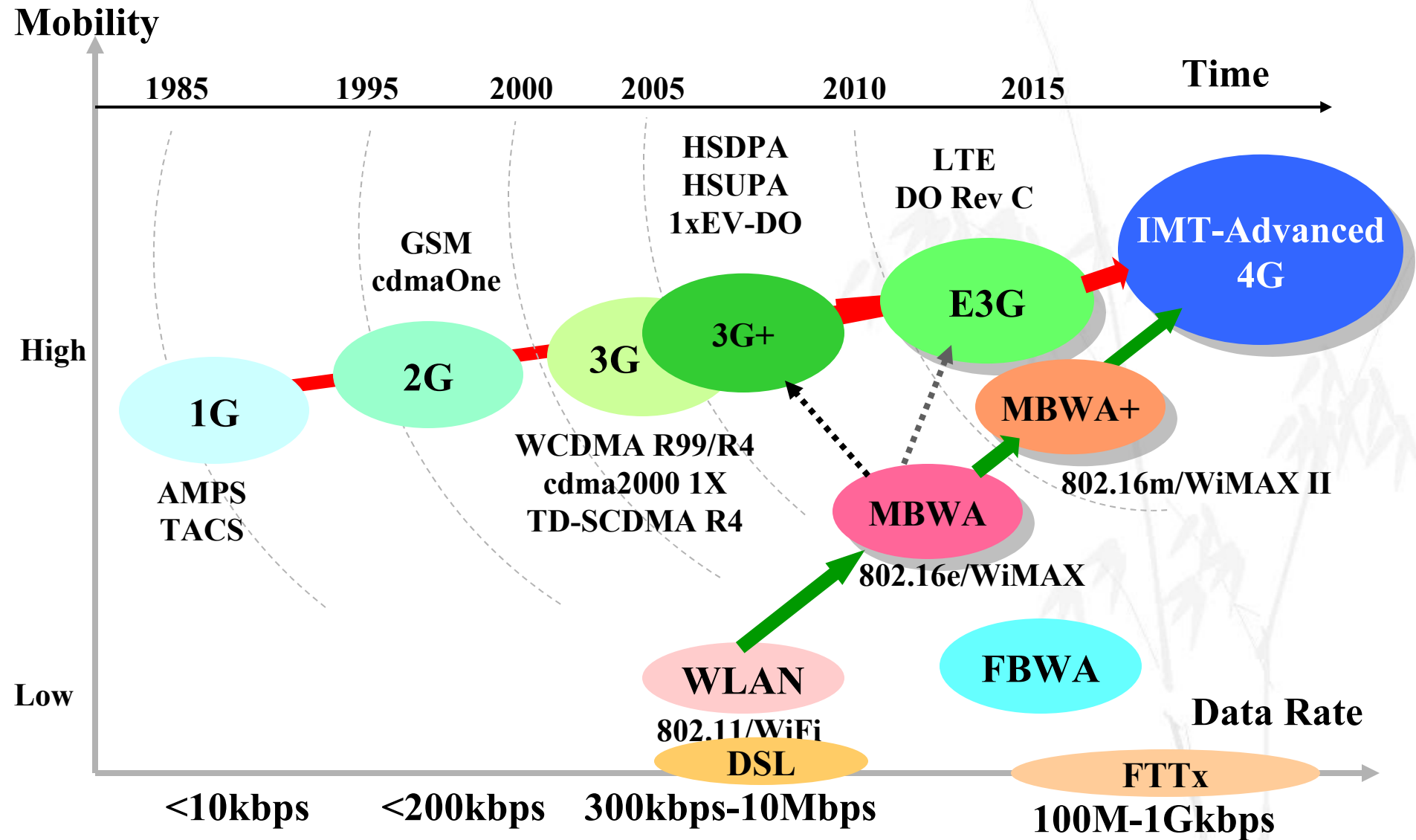
- 2+3 cities: (Beijing, Shanghai)+(Baoding, Qingdao, Xiamen)
- China Telecom, China Netcom and China Mobile constructed TD-SCDMA network in Baoding, Qingdao and Xiamen respectively;
 - ⊕ About 100 Node Bs and 5000 terminals in each city
- 4 infrastructure vendors, 4 chipset vendors and 19 terminal types.



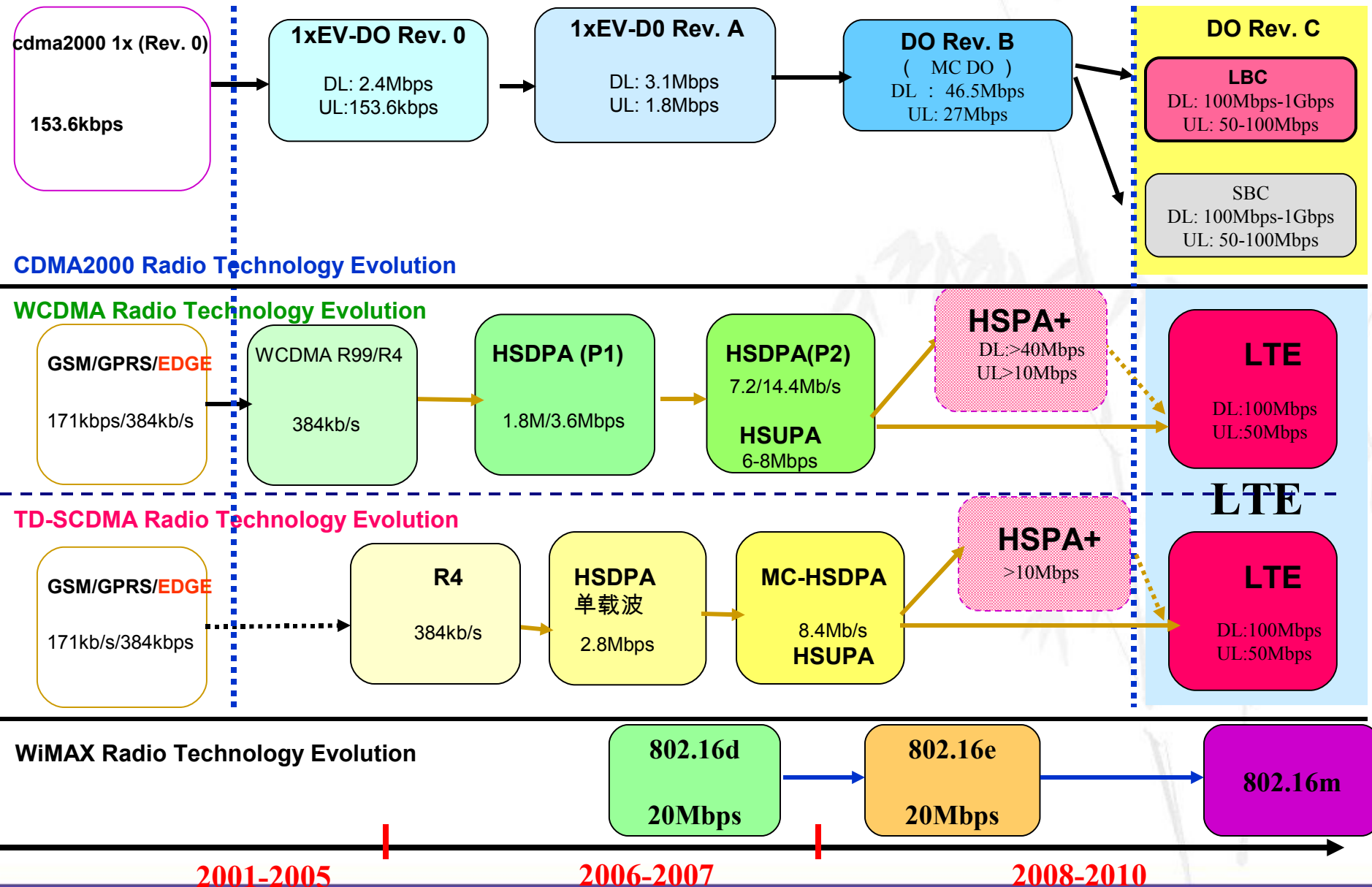
TD-SCDMA Product Roadmap



Mobile Broadband, Broadband Mobile - BWM



Wireless Mobile Technology Roadmap



Complementary in the market

■ 3G and its long term evolution

- ⊕ Seamless coverage, full mobility
- ⊕ Full service (voice and data), data rate for low to high
- ⊕ Full standardization
- ⊕ Device: Handset, PDA, Data card, Laptop
- ⊕ 3G core and additional bands
- ⊕ Commercial deployment for years
- ⊕ E3G(LTE and DO Rev.C) specifications is being developed in 3GPPs.

■ WiMAX and other broadband wireless access systems

- ⊕ Hot zone coverage, Nomadic or limited mobility
- ⊕ Data dominant service, high data rate
- ⊕ Less standardization
- ⊕ Device: Laptop, data card, PDA, handset
- ⊕ Candidate Bands: 3.5GHz, 2.5GHz, 2.3GHz
- ⊕ Initial deployment in Korea, Sprint-Nextel's nationwide deployment in 2007 and 2008
- ⊕ Challenges: Spectrum, Market position, Maturity

Wireless Technology Trends

- Multiple technologies competition
 - ⊕ Different market requirements, different development stage;
 - ⊕ Competition and convergence, between industry, operators and vendors
- Radio Access Technologies
 - ⊕ Complementary/Coexistent
- Core networks and services are moving towards the same/similar structure
- Common technologies
 - ⊕ OFDM, MIMO;
 - ⊕ IMS offers network convergence between Mobile and WiMAX, NGN and Mobile.

Wireless Mobile Development

■ Cellular Networks

- ⊕ Evolve from 2G to 3G and their enhancement systems;
- ⊕ 3G license will introduce new mobile operator;

■ Wireless Access Systems

- ⊕ Fixed Wireless Access in 3.5GHz bands;
- ⊕ WiMAX and broadband wireless access is under consideration;

■ Wireless Mobile Broadband research

- ⊕ National 863 FuTURE Project (2001-2006)
- ⊕ New Generation of Broadband Wireless Mobile Communication Network” Program (2006-2020)
- ⊕ Global Cooperation
 - CJK B3G WG:CCSA, ARIB/TTC, TTA
 - ITU , 3GPP, 3GPP2, IEEE and WWRF, mITF, NGMC, FuTURE Forum
 - Research Programs/Projects

Thanks !