

# ISSUES ON BROADBAND

ITU Forum of the  
Regional Working Group (RWG)  
on Private Sector Issues  
- Asia and the Pacific Region -

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International Telecommunication Union

# Broadband: Different Views

- Various Definitions  
“... transmission capacity with sufficient bandwidth to permit combined provision of voice, data and video, with no lower limit.”
- Information Society  
“content-centric”
- Ubiquitous Network Society  
“application-centric”

BROADBAND IS A KEY



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# Promoting Broadband

- ITU Workshop done in Geneva, in 2003, <http://www.itu.int/broadband>
- Why promoting broadband?
  - Governments' perspective
  - Telcos' perspective
  - Consumers' perspective
  - Businesses' perspective
- Benefits of promoting broadband
  - To users
  - To the economy
  - Returns on investment (ROI)



# Promoting Broadband (cont.)

- Critical Success Factors (CSFs)
  - Promoting broadband demand
  - Promoting broadband supply
- Role of the ITU  
ITU-D Study Group 2, questions 12, 1/2 and 22



# Government's role in promoting broadband

- Creating the right policy
- Stimulating demand
- Formulating national, regional, and local programmes; “universal service policies”

EFFECTIVE REGULATION!!!



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# Policy and Regulatory Issues relating to wireline broadband

- Competition Policy
- Regulating the Broadband Market
- Maintaining Competition
- ..., etc.



# Broadband Delivery to Communities

- How can the community ensure the development of an area broadband network?
- How can a broadband deployment support the economic development goals of the community?
- How can low-and moderate income areas realistically be served with broadband access
- Utilize ubiquitous network presence to support broadband everywhere in the community
- Leveraging existing systems & assets to support the delivery of high-speed access everywhere
- Low cost broadband can be used to target desired areas for immediate attention



# Low Cost Broadband

- Can be deployed in Rural Area where;
  - Is low and moderate income area
  - Has difficult terrains, i.e. mountains, rivers, desert, etc.
  - Is prone to natural disasters i.e. cyclone, tsunami, etc.
- Issues on Technology Options
  - Transmission
    - Terrestrial access
    - Satellite access
    - Microwave systems
  - End user equipment

WIRELESS ACCESS - ALWAYS SELECTED CHOICE



# Fixed Wireless Broadband

- Key Technical Standards
  - IEEE 802.11b (Wi-Fi)
  - IEEE 802.11a
  - HIPERLAN/2, HIPERACCESS, HIPERMAN, HIPERLINK
  - IEEE 802.16 (WiMax)
- Advantages
  - Low cost
  - Flexibility/Scalability
  - Speed
  - WLL systems can be used in the mobile mode



# Fixed Wireless Broadband (cont.)

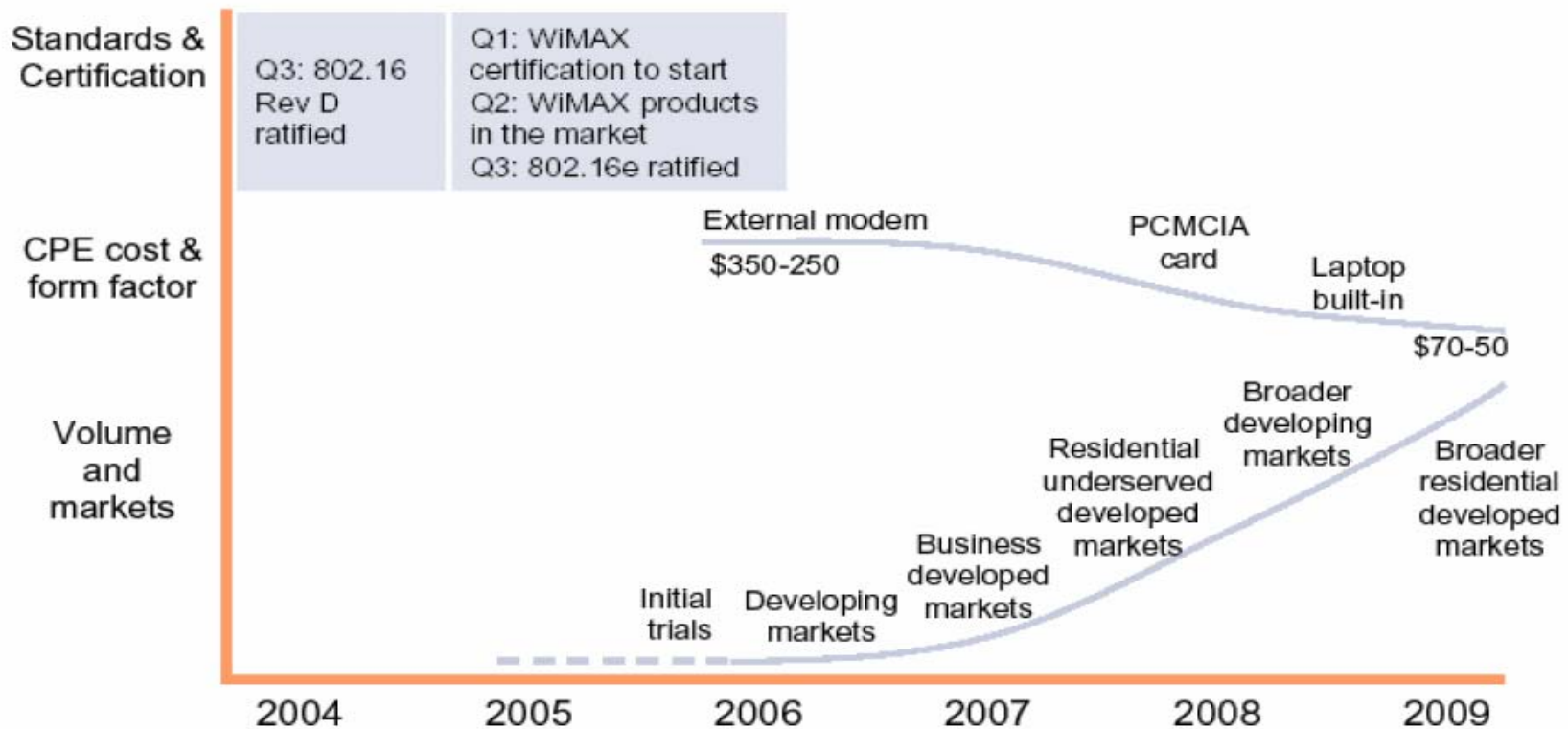
- Specific Areas Must be Addressed:
  - Network cost
  - Management
  - Administration
- Remaining Challenges
  - Standardization
  - Line-of-sight
  - Frequency
  - Interoperability
  - Roaming



# WiMax

Strong market potential for WiMax, however in order to reach the market promise, a number of steps will need to occur

## - WiMax Market Progression -



# WiMax (cont.)

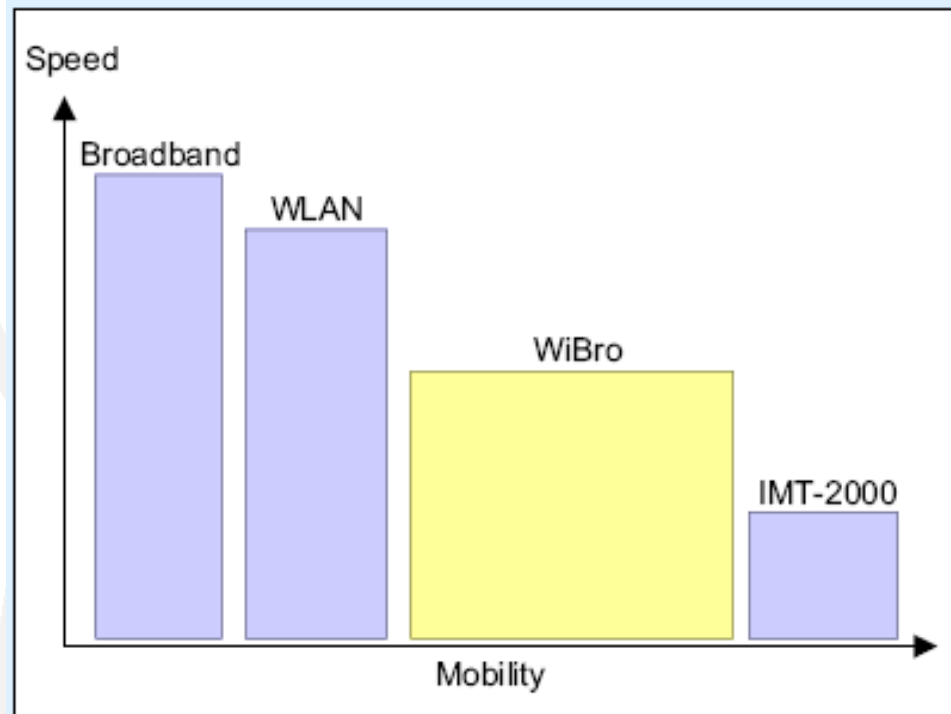
- Challenges
  - Cost of CPE
  - Slower market release of products
  - Standardization, current and future (w/h IMT-2000) – ITU role?
  - Technological challenges
  - Regulator challenges i.e. licensed band
- Case study: WiBro in South Korea



# WiBro

An alternative approach to IEEE 802.16e

## About WiBro



WiBro at a glance	
General	
Frequency:	2.3 GHz
Licenses:	Awarded by ministry
Bandwidth	
Per user:	512 - 1024 kbit/s
Total:	100 MHz
Maximum accessible speed for users:	
Practical:	60 km/hour
Theoretical:	250 km/hour
Pricing estimates	
Flat rate pricing:	15 USD/month, est.

Source: ITU case study: Republic of Korea at <http://www.itu.int/osg/spu/ni/futuremobile/general/casestudies/koreacase-rv4.pdf>

# 3G Wireless Broadband

- 3G Technologies
  - CDMA2000 1xEV-DO
  - Enhanced EV-DO
  - CDMA2000 1X
  - W-CDMA
- Challenges
  - Economic perspective
  - Service perspective i.e. service overlay network
  - Technology perspective i.e. standardization, interoperability, QoS, Security
  - Regulatory perspective



**Thank You**



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