

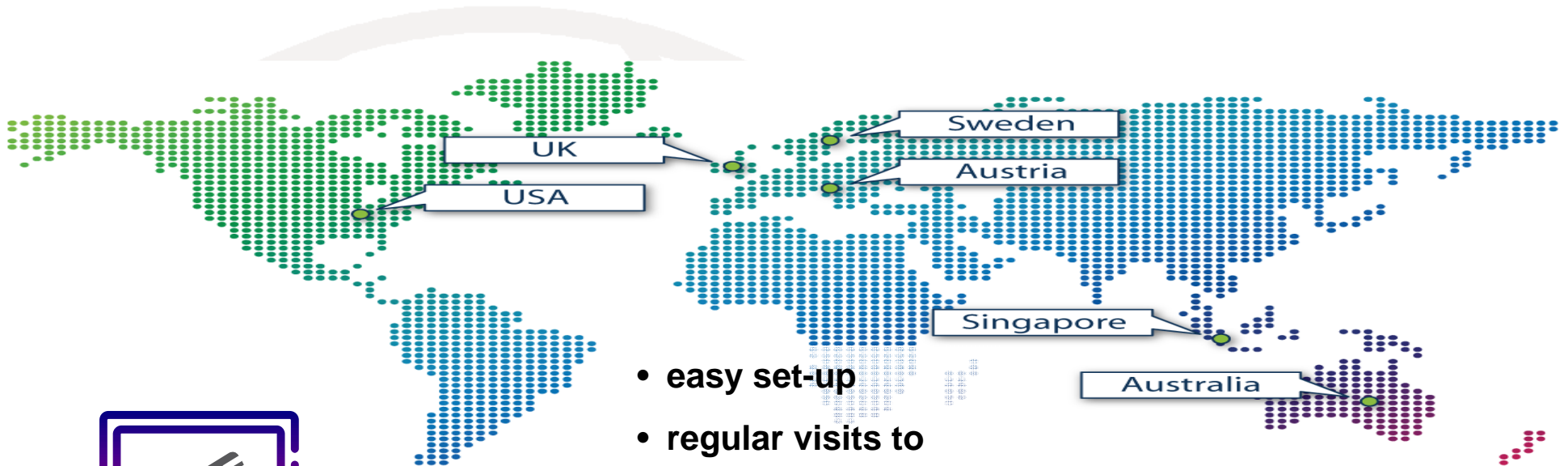
ITU Regional Workshop on IMT

Da Nang, Viet Nam; 7-8 June 2010

**Spectrum allocations for IMT and beyond,
and the need for spectrum efficiency**

**Lasse Wieweg
Hakan Ohlsen
Ericsson**

Why mobile broadband IMT ?



- easy set-up
- regular visits to places without fixed broadband
- improve professional performance
- life in transition
- tired of the in-house environment



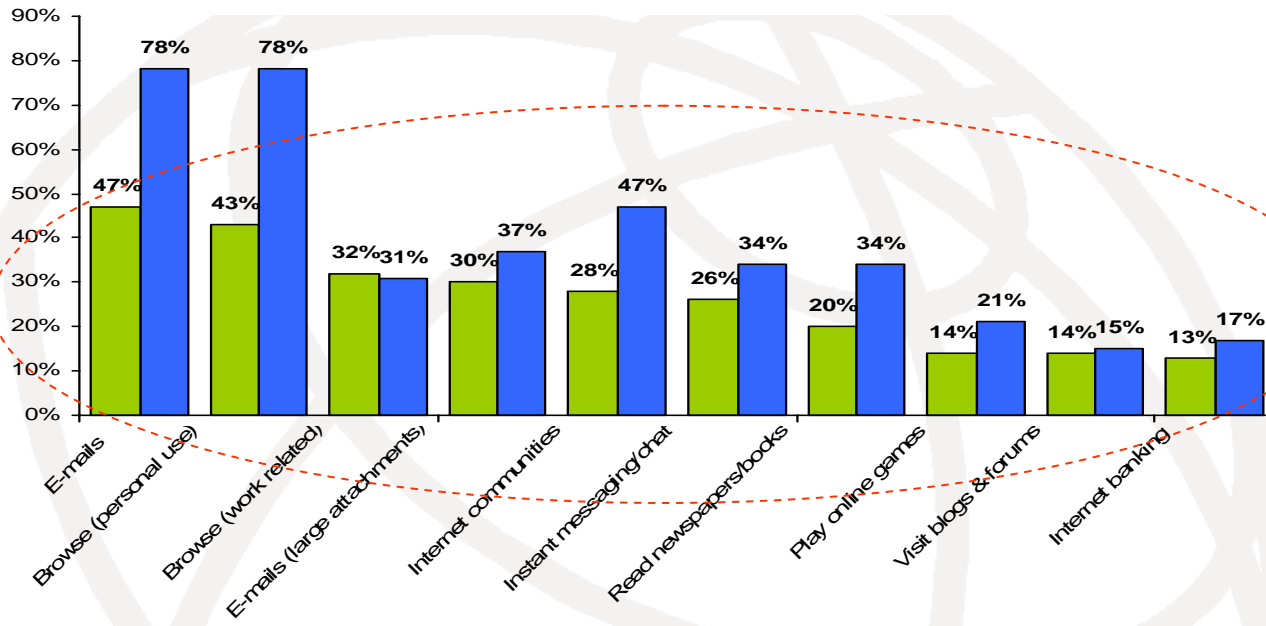
Mobility, the reason for Combined users



Internet connection, the reason for Mobile broadband only users

Two distinct groups of users having different reasons

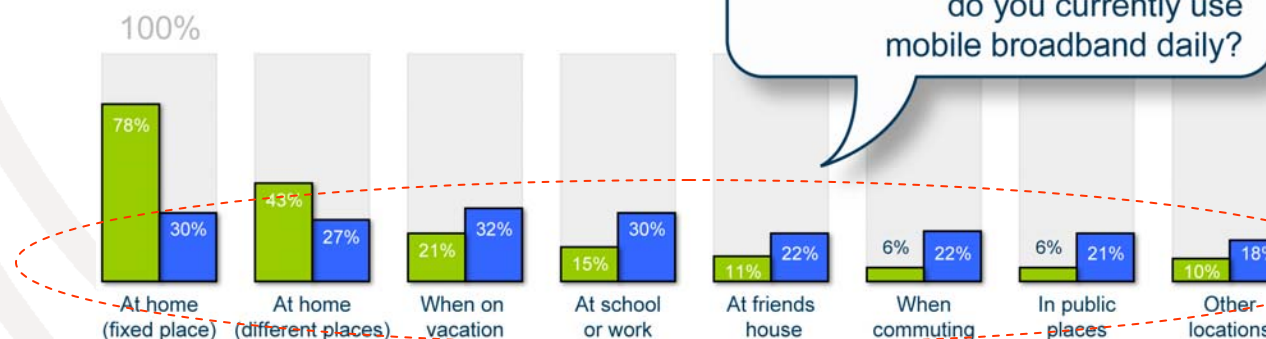
Mobile broadband daily usage



Internet is *the* killer application for the Mobile broadband only user group

Combined users value true mobility and the everywhere access even more

In what situation and/or places do you currently use mobile broadband daily?



Mobile broadband only users
 Combined users

Consumer insights



Consumers:

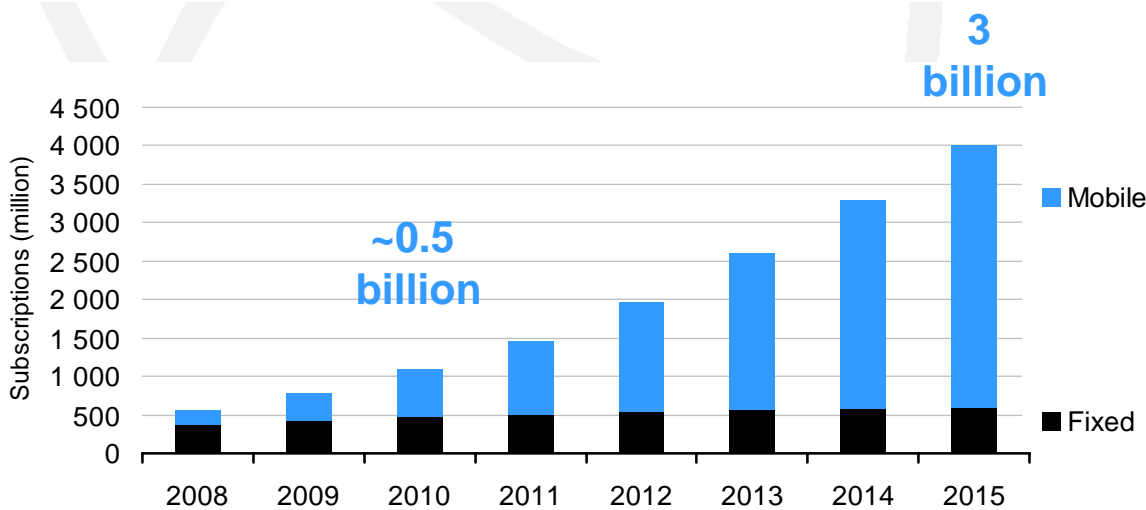
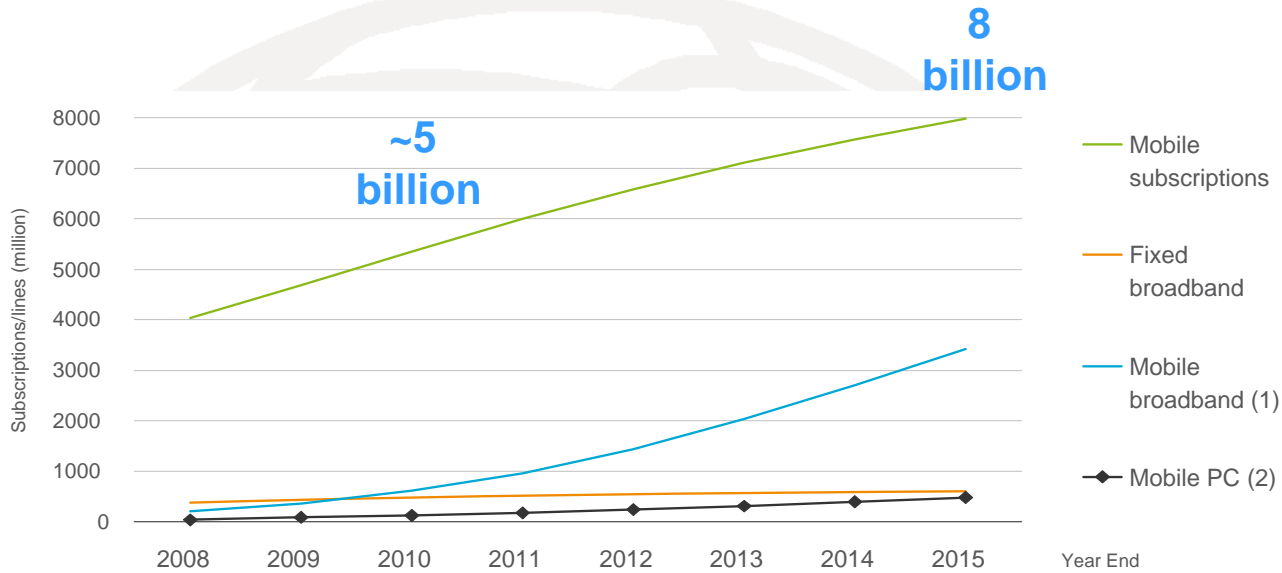
- connected devices and laptops are **very personal**
- **24 / 7** and **anywhere Internet** access
- using mobile broadband is a **natural part of the daily life**



Implications for Regulators and the industry:

- **End user perspective:** a **ubiquitous, secure** and **safe** service; as well as a **rich ecosystem** with a wide range of **interoperable** and **backward compatible** devices
- **Technology perspective:** important to **build out** mobile services with regard to **coverage** and **capacity**; introduce **new features** and **functionality** to providing for **different types of traffic** in the networks and **enhancements** on networks and services

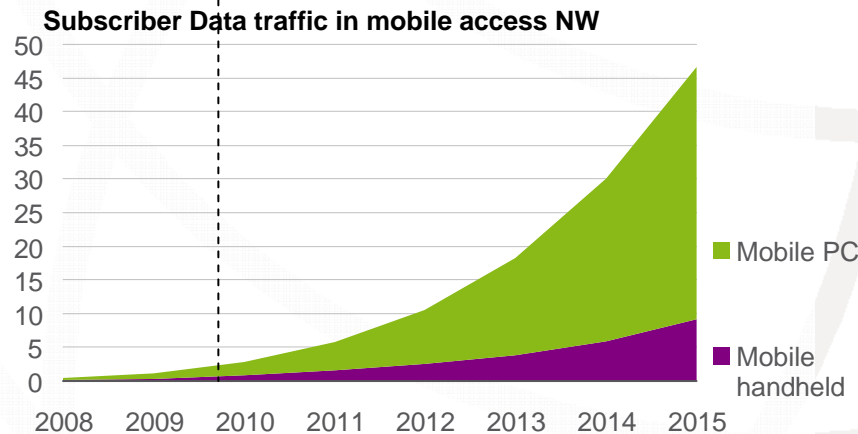
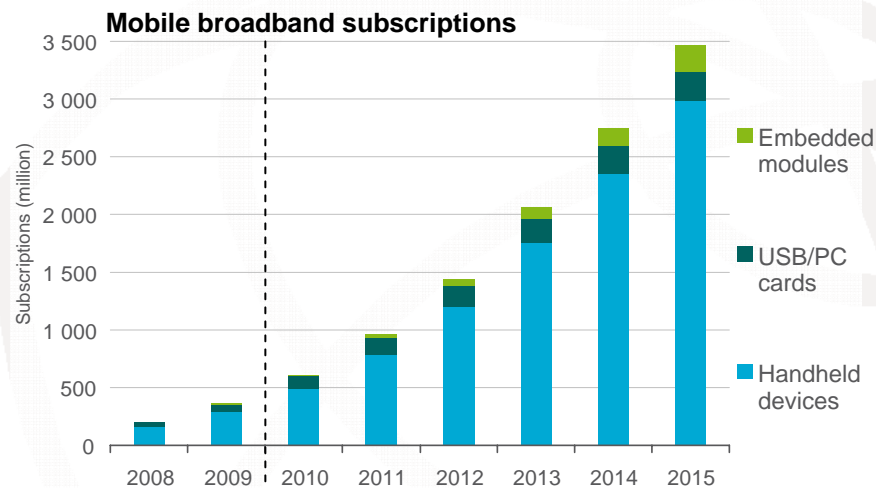
Market trends



In year 2015
 8 billion mobile subscriptions
 and
 3 billion mobile broadband subscriptions
 will redefine both the regulations and the market
 and
 the subsequent need for spectrum.

Source: Ericsson
 Mobile Broadband includes: CDMA2000 EV-DO, HSPA, LTE, Mobile WIMAX & TDSCDMA.
 It includes handsets, USB dongles, embedded modules etc. The vast majority is handsets.
 Please note that mobile broadband access could be used for fixed applications
 Fixed broadband includes DSL, Cable and Fiber
 This slide contains forward looking statements

Mobile data traffic and user devices



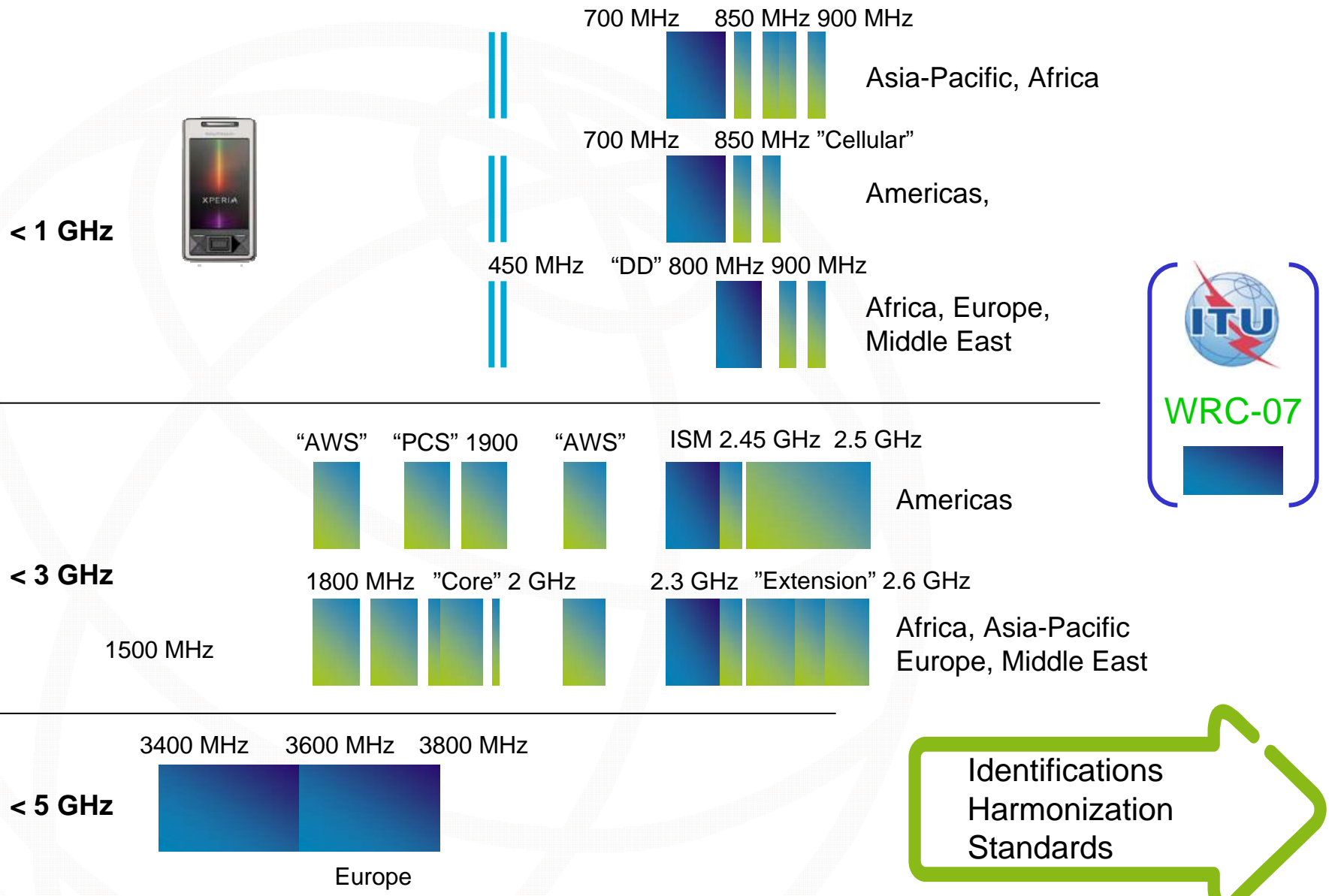
- shifting towards streaming, "real-time" download and uploading of audio visual content as major volume driving applications
- Smartphone devices users will grow 4 times to 2015 and the generated traffic will grow more than 30 times
- Mobile PC subscriptions will grow 6 times to 2015 and the generated traffic will grow more than 45 times

Source: Ericsson

1) Mobile Broadband: CDMA2000 EV-DO, HSPA, LTE, Mobile WiMAX & TDSCDMA. It includes handsets, USB dongles, embedded modules etc. The vast majority is handsets.

2) Mobile PC users: USB dongles/PC cards and embedded modules.

Current IMT spectrum map



AWS: Advanced Wireless Services; DD: Digital Dividend; ISM: Industrial, Scientific and Medical; WRC: World Radiocommunication Conference; PCS: Personal Communications Services

Requirements for future IMT operations



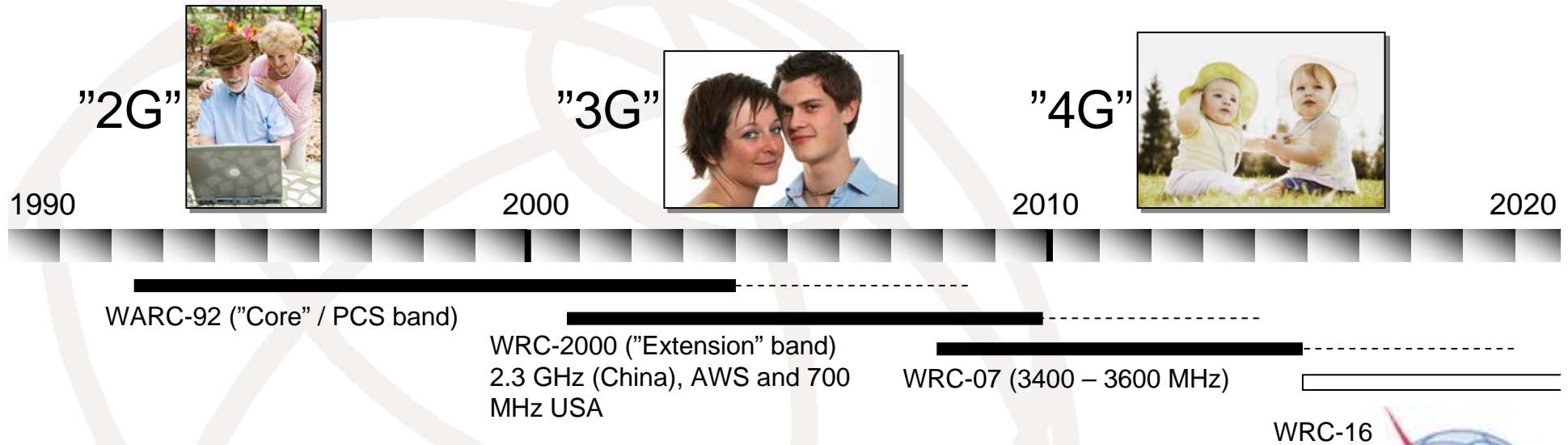
ITU-R WP 5D

has started to study existing and new operational requirements for current and future developments of terrestrial IMT networks

- ▶ take into account new behaviours, particularly while considering the usage of smart phones and personal computer devices, and
- ▶ take into account revised new estimations and market forecasts.

consumers expect to have similar user experience including the access to similar services and applications in the mobile environment as they have in wired office or home environments.

Mobile broadband spectrum for IMT; is a long term business



- **Spectrum is a key asset and decisions need to be forward looking:**
 - **WARC-92:** the "Core" band, 1920 – 1980 MHz / 2110 – 2170 MHz
 - WRC-97: no IMT spectrum identified
 - **WRC-2000:** "Extension" band 2500 – 2690 MHz, 2300 – 2400 MHz (China)
 - WRC-03: no IMT spectrum identified
 - **WRC-07:** 2300 – 2400 MHz, 3400 – 3600 MHz
 - WRC-12: no IMT spectrum will be identified; but AI 8.2 needs to be addressed
 - **WRC-16 : more mobile broadband spectrum for IMT will be needed**

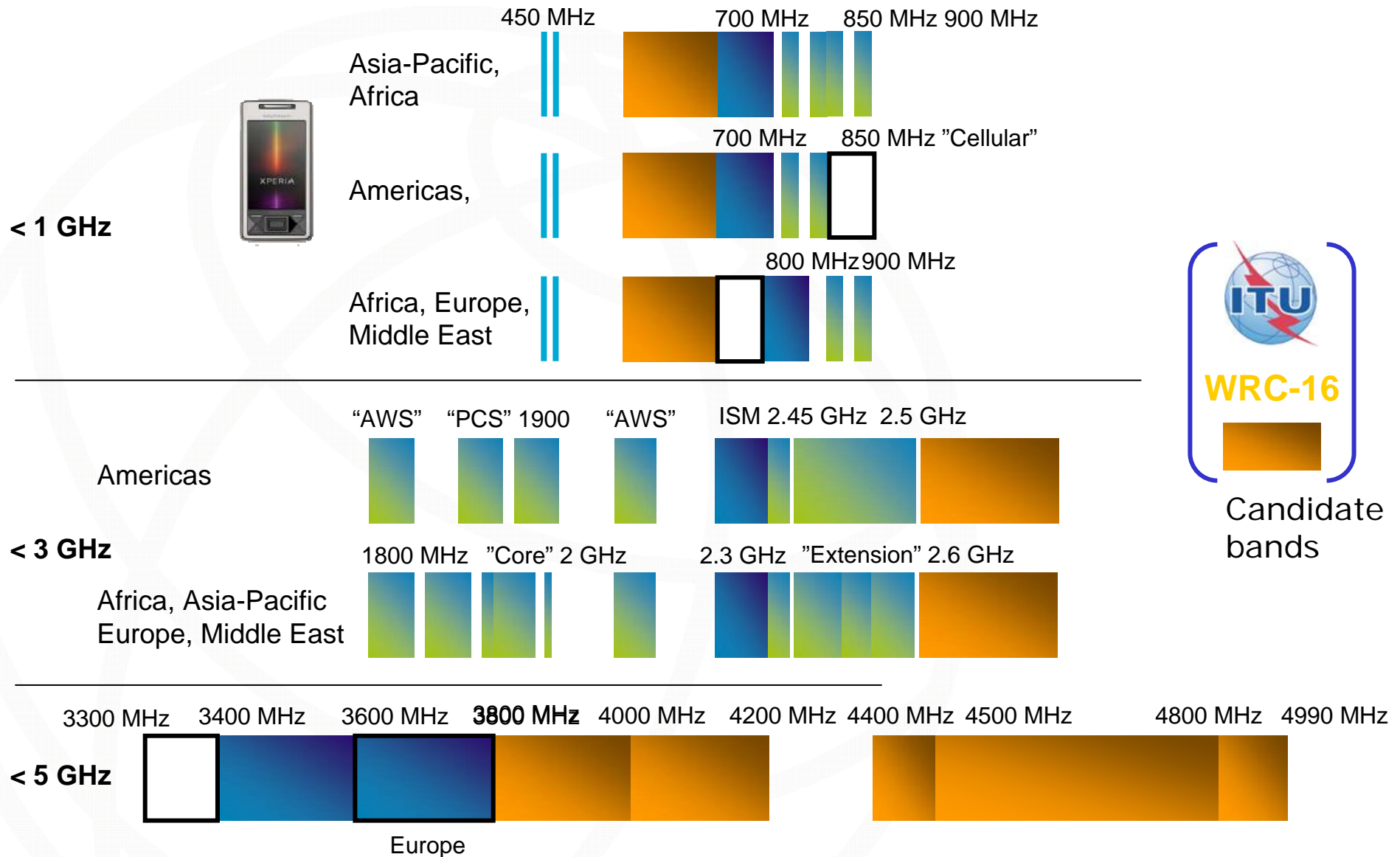


More use of spectrum; is more efficient use of spectrum

- 470 – 698 MHz sharing with BS, coordinated downlink only in the “white spaces”
- 2700 – 2900 MHz sharing with ARNS
- 3300 – 3400 MHz sharing with RLS
- 3600 – 3800 MHz (MOBILE) sharing with FS and FSS
- 3800 – 4200 MHz (MOBILE) sharing with FS and FSS
- 4400 – 4990 MHz (MOBILE) sharing with FS and FSS



A possible future IMT spectrum map ?



AWS: Advanced Wireless Services; DD: Digital Dividend; ISM: Industrial, Scientific and Medical; WRC: World Radiocommunication Conference; PCS: Personal Communications Services



Thank you for listening !