

WLL Impact on Licensing and Spectrum Policy

Ricardo Tavares
October 16th 2006
Singapore



Objective

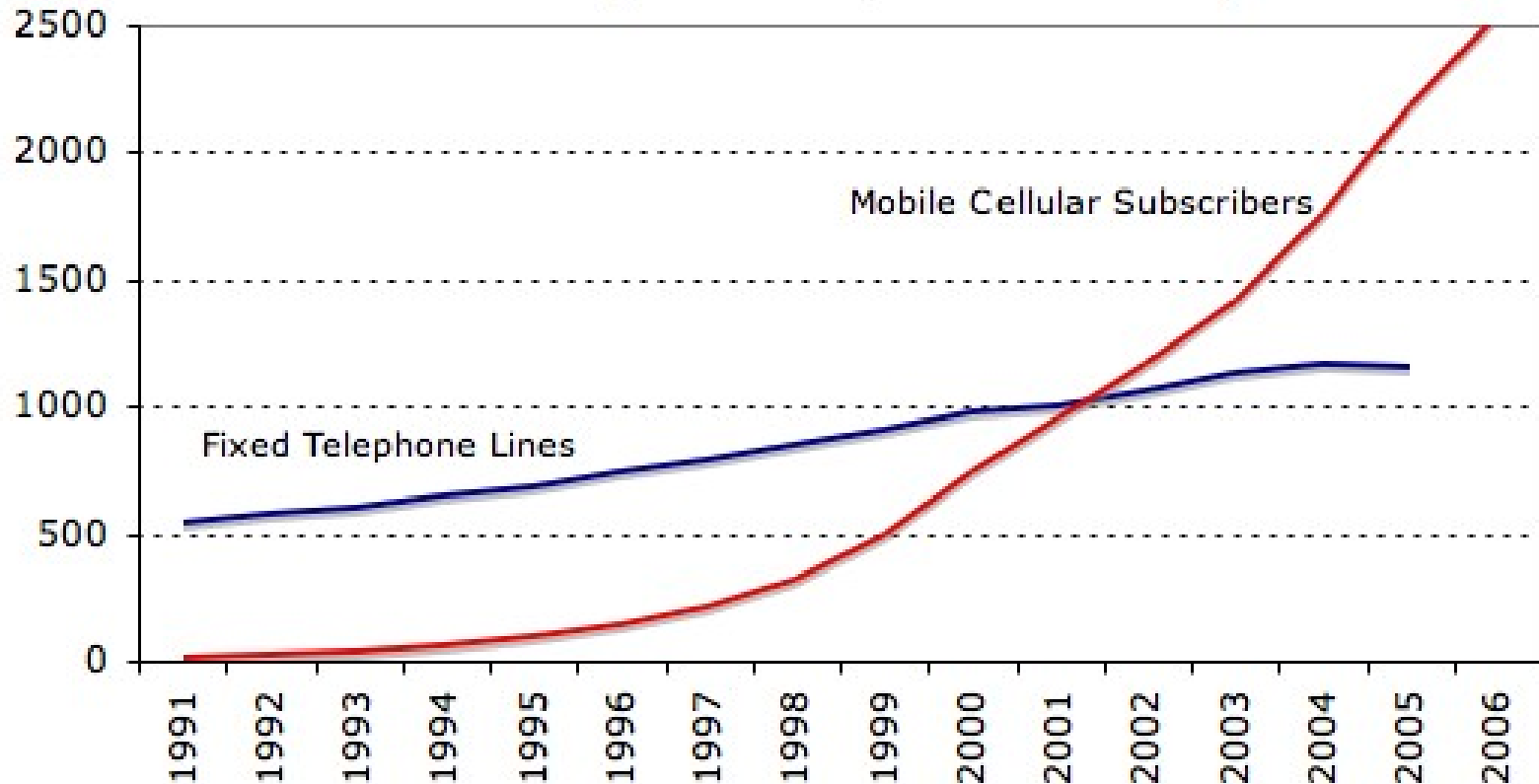
- To discuss two main aspects of WLL
 - Impact on licensing regime
 - Impact on spectrum policy

Two Misconceptions

1. WLL is necessary and helpful to create competition to fixed-line incumbents
2. WLL contributes to increase teledensity

Mobile Drives Teledensity

**World: Fixed Telephone Lines & Mobile Cellular
Subscribers (in millions, 1991 - 2006)**

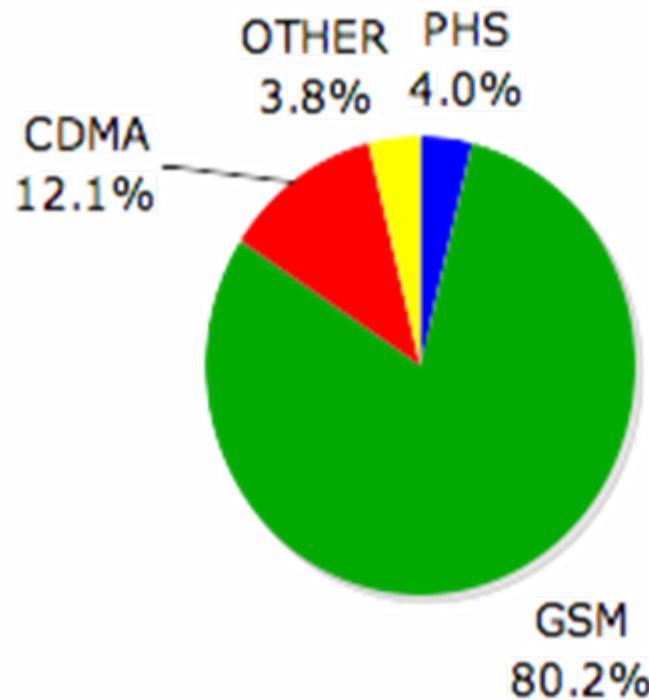


Source: ITU



Fixed License, Air Interface

Worldwide Cellular Technologies (June 2006, in millions)



Technology	Subscribers
PHS	97.5
GSM	1967.3
CDMA	296.5
OTHER	93.0
TOTAL	2454.3

Source: Wireless Intelligence & PHS MOU Group, 2006

- Historically, WLL operators have chosen mobile interfaces. Why, when other solutions are more cost effective for WLL?



The Scorpion & the Frog



Costs of WLL Licenses

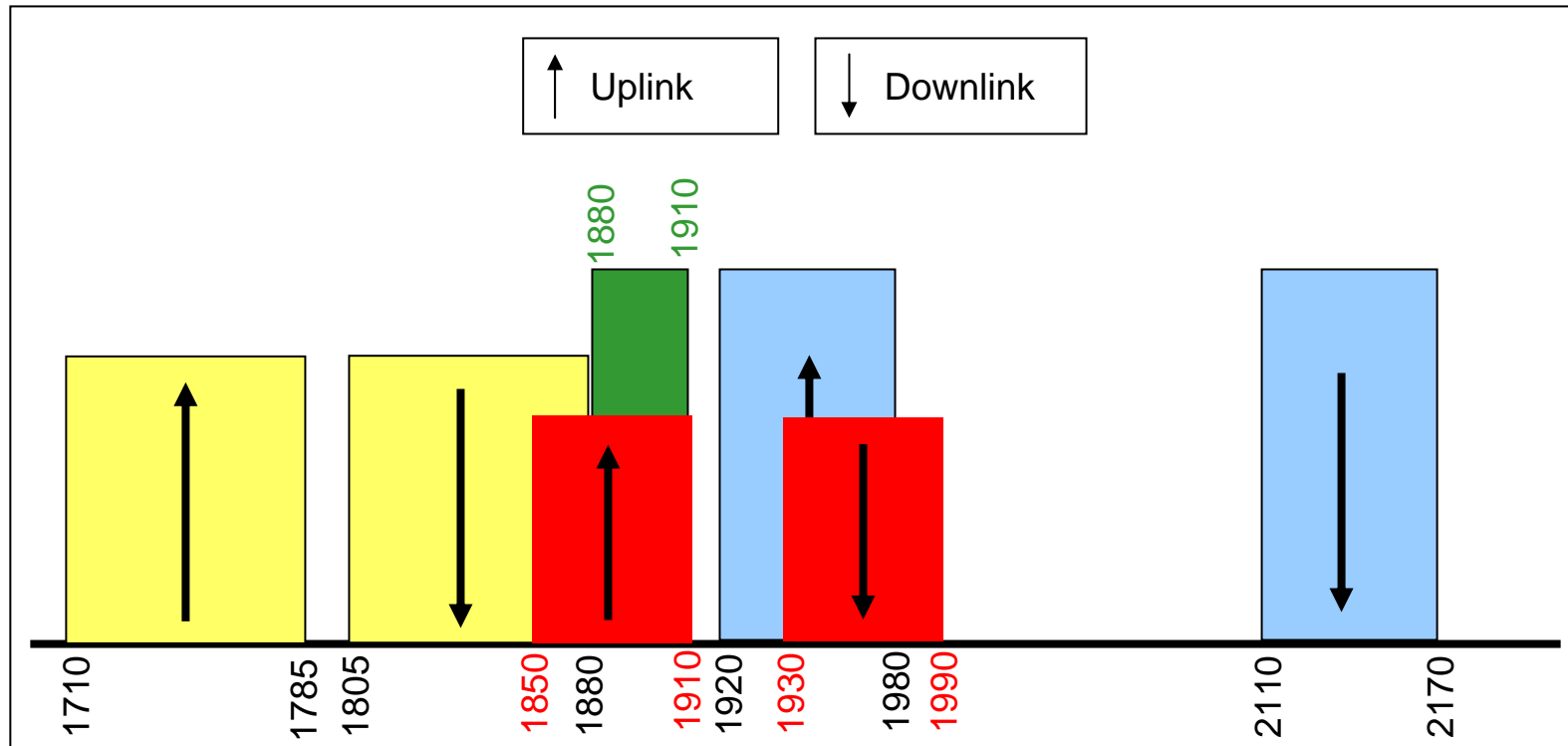
- WLL licenses risk to de-stabilize regulatory regimes
 - Licensing regime is contract between regulator and private investors
 - If stability is destroyed, investment slows or stops
- WLL frequently breaks national spectrum policies apart from global harmonization



WLL Impact on Spectrum

- 450MHz, 850MHz, 900MHz, 1800MHz, 1900MHz
- Spectrum planning for WLL conflicts with global harmonisation of spectrum
- Critical case is reversed duplex at 2GHz

"Mixed Band Plan"



DECT
1800 MHz

ITU IMT 2000 core 3G Band
Proposed PCS Band



The Indonesian Case



- 2004: Mixed PCS-Core Band assignments, GSM operators got 3G service license, no 3G spectrum plan
- 2005: Analysis of Interference issues, public Consultation, Decision to migrate WLL to 800MHz from 1900MHz
- 2006: 3G Core Band licensing via auction, incumbent GSM operators start 3G service



Conclusion

- 10 or even 5 years ago, WLL was considered an important tool to create competition in fixed-line and increase teledensity
- Today, mobile drives teledensity and competition
- WLL “back door entry” into mobile threatens the stability of license, spectrum and investment regimes