Regulatory environment for fixed-mobile interconnection

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Euro CPR 2001,
Venice, 26 March 2001

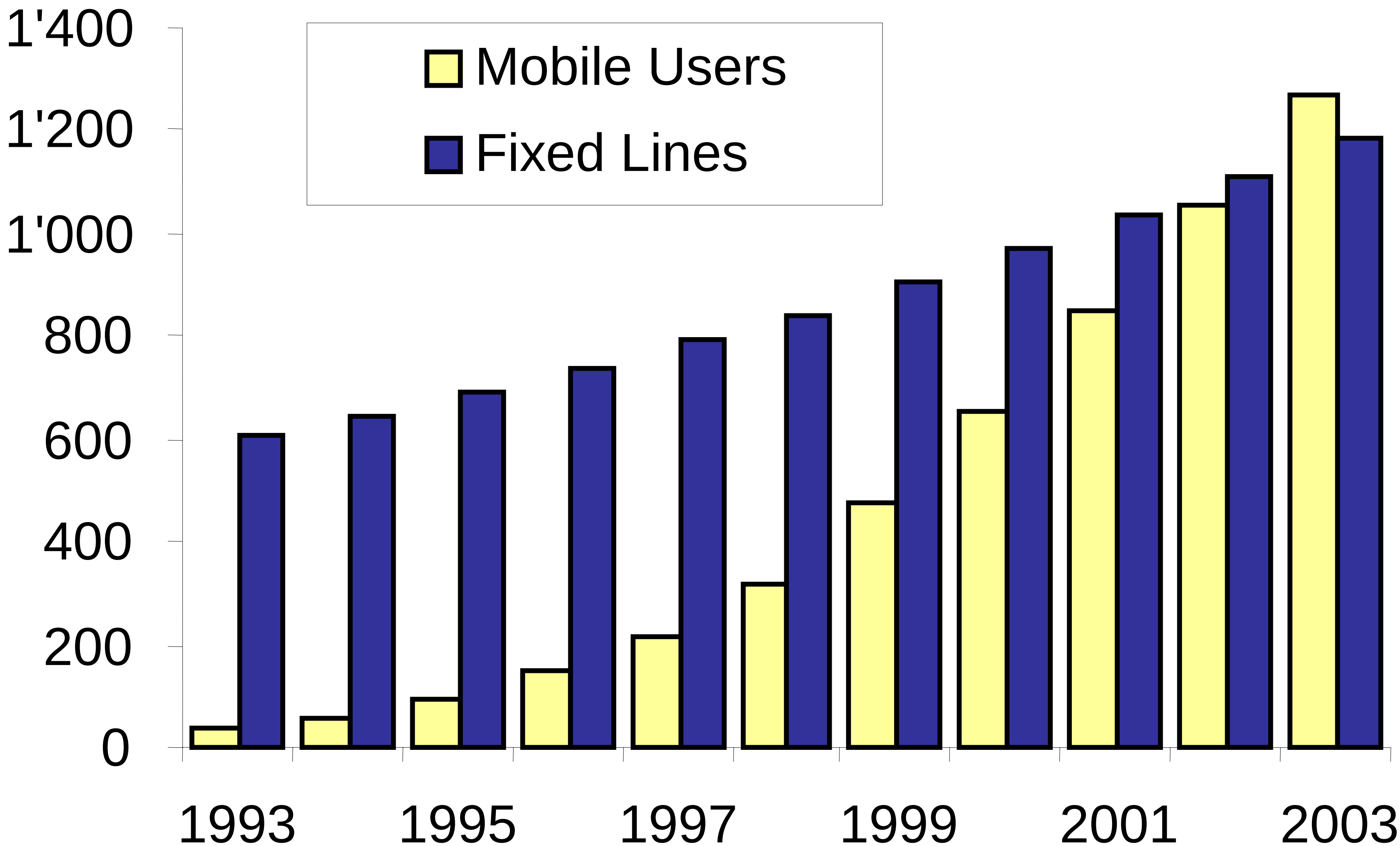
The views expressed in this paper are those of the authors and do not necessarily reflect the opinions of the ITU or its Membership. The authors can contacted by e-mail at Tim.Kelly@itu.int and Lara.Srivastava@itu.int. The research presented is based on the input documents and outputs of a workshop on fixed-mobile interconnection, held at the OECD, September 2000. That meeting was chaired by Prof. Rohan Samarajiva.

Agenda

- A mobile revolution
  - Worldwide
  - Europe
- Fixed-mobile interconnection
  - Calling Party Pays vs. Receiving Party Pays
  - The problem of the “market of one”
  - Interconnection rate comparisons
- Country case studies
  - India, Uganda
- Implications for public policy
  - Is this an example of market failure?

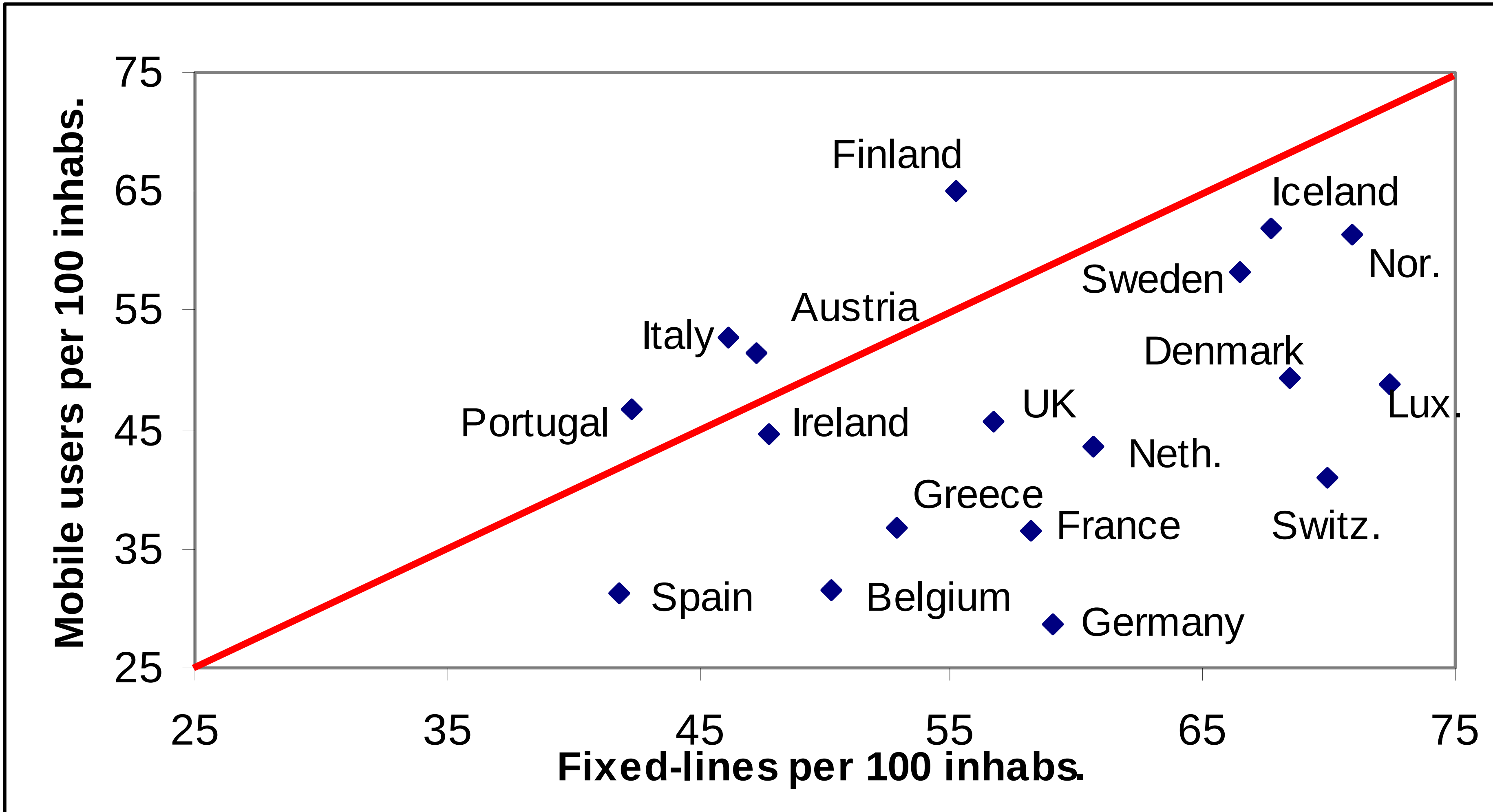
A Mobile Revolution

Fixed Lines vs. Mobile Users, worldwide, Million



Source: ITU World Telecommunication Indicators Database.

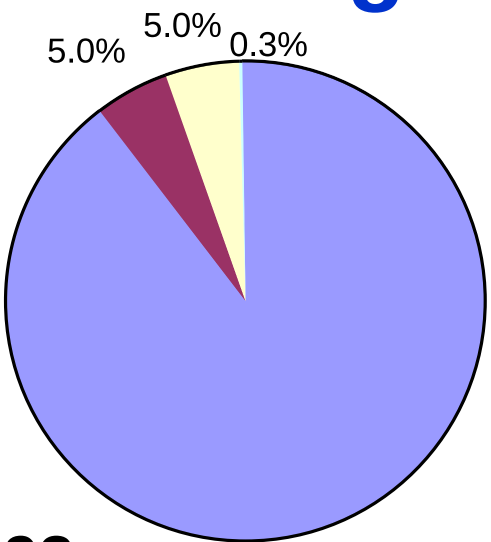
Relationship between teledensity and mobile density, Europe, 1/1/00



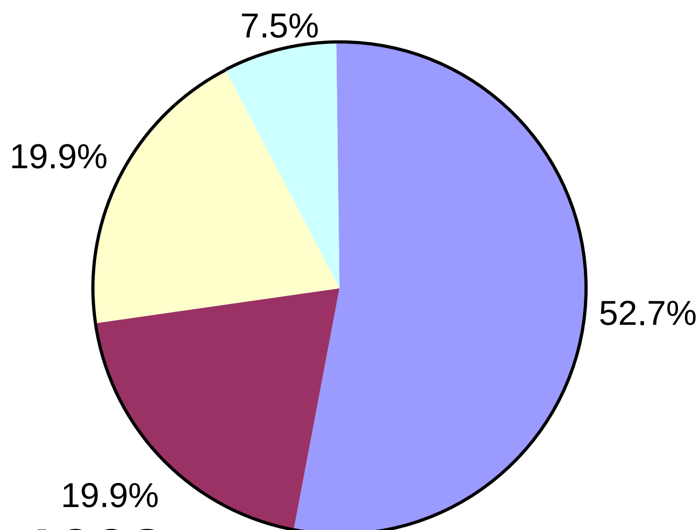
Source: ITU World Telecommunication Indicators Database.

Regulatory environment for Fixed-Mobile Interconnect

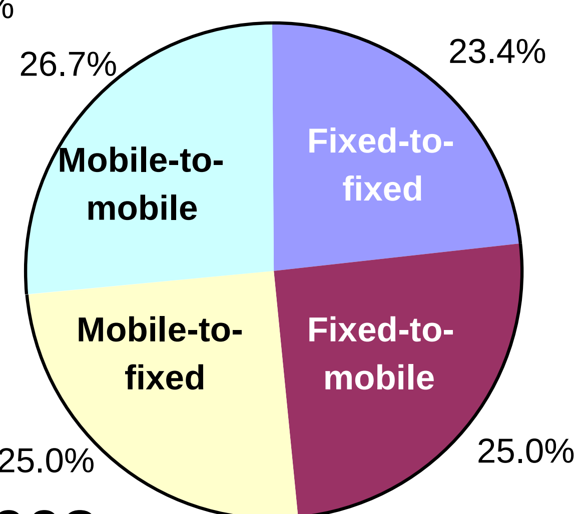
Calling opportunities worldwide



1993



1998



2003

Source: ITU Fixed-Mobile Interconnect website: http://www.itu.int/interconnect

Fixed-Mobile Interconnection

- Interconnect prices are a major determinant of retail prices
- Evidence of “market failure”
  - Interconnect prices are variable but generally very high, especially in Europe
  - In Calling Party-Pays environments, caller may not be aware of the charge they will be paying
  - Calling party does not have a choice of operator to terminate the call
- Fixed-to-mobile and mobile-to-fixed interconnect rates are highly asymmetric
- By 2003, 75% of all calls worldwide will involve a mobile

Elements of a Fixed to Mobile call

Calling Party *(FIXED)*

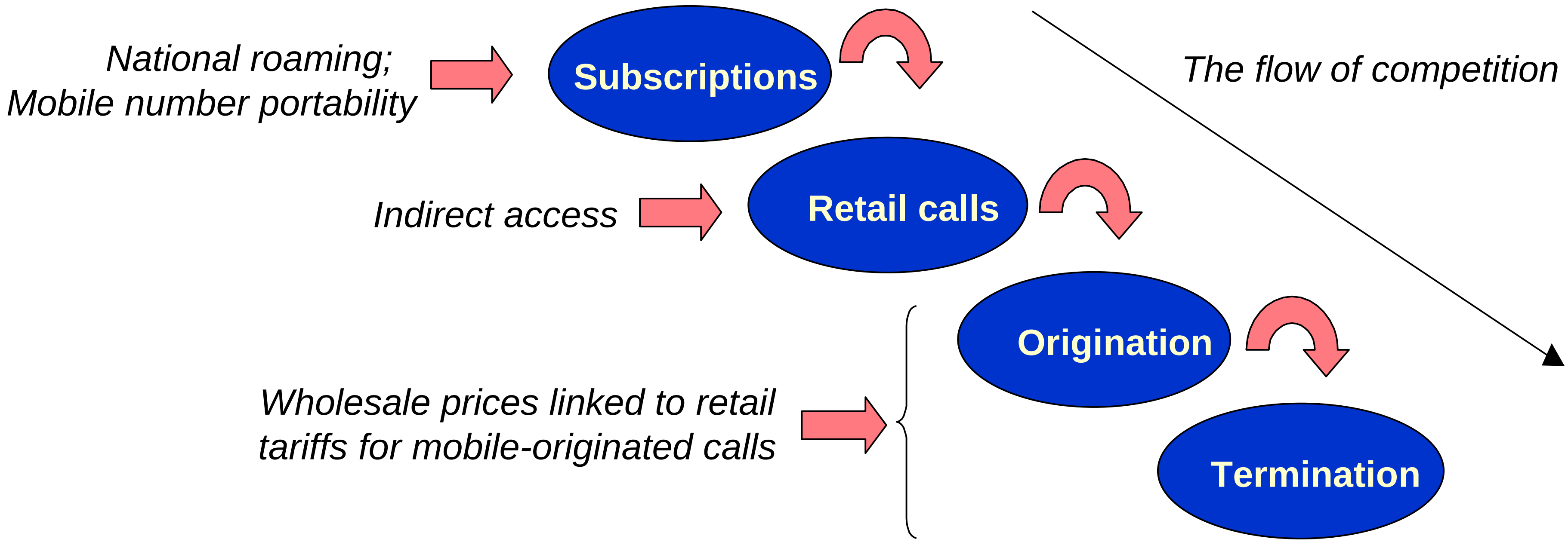
Call Origination → Transit service → Call Termination

Called Party *(MOBILE)*

Call Origination	Transit service	Call Termination
Orig. Access Switching Authentication	Core Network Switching	Locating the Customer Switching Term. Access

Source: Adapted from ECTA.

The competitive cascade



Source: Ovum.

RPP vs. CPP: What's the difference?

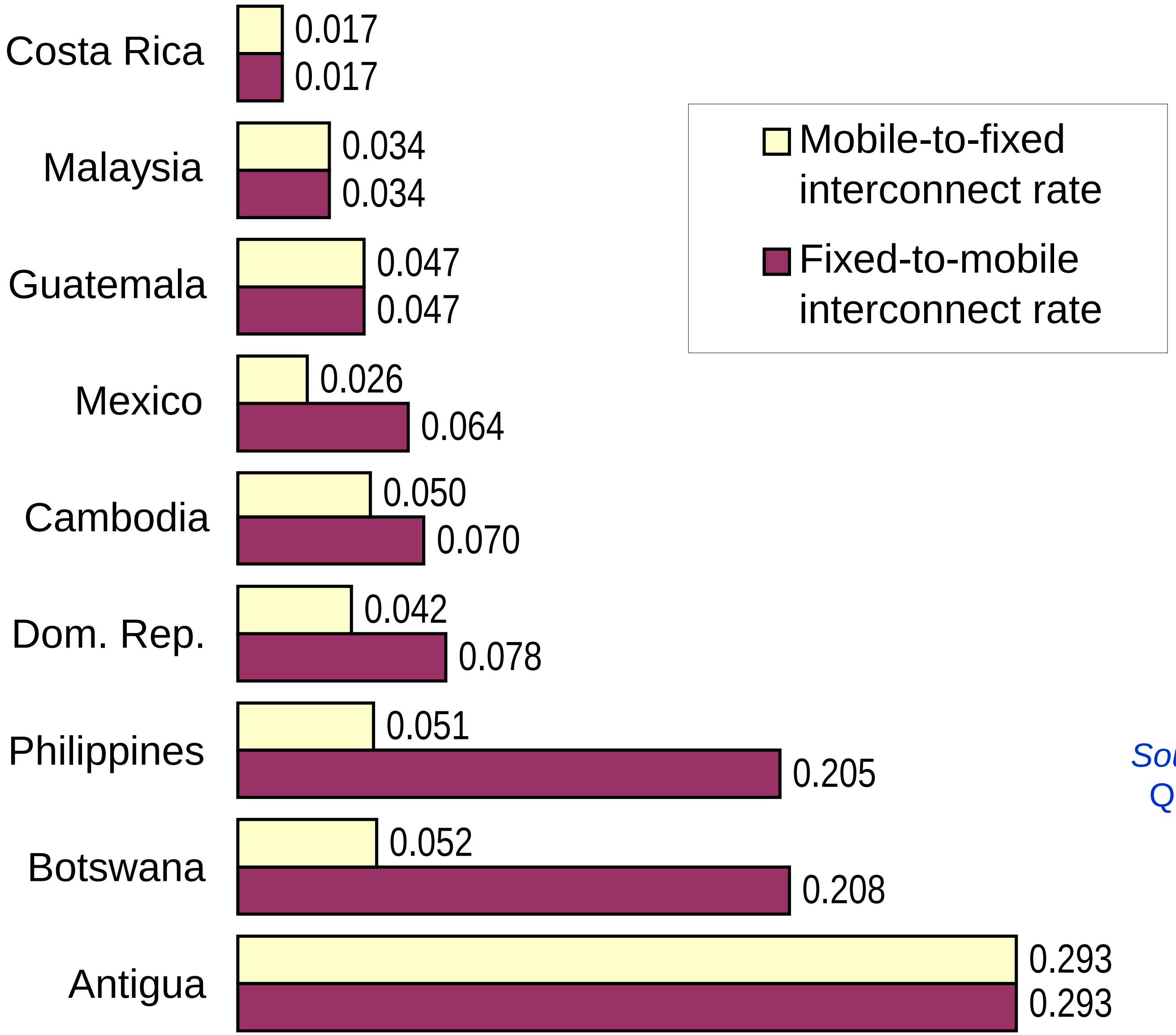
Receiving Party Pays

- Mobile party pays for incoming calls and fixed party pays only local tariff
- Often, no interconnect arrangement is negotiated with the fixed operator for F-M calls. Mobile operators bill mobile consumer directly for "airtime".

Calling Party Pays

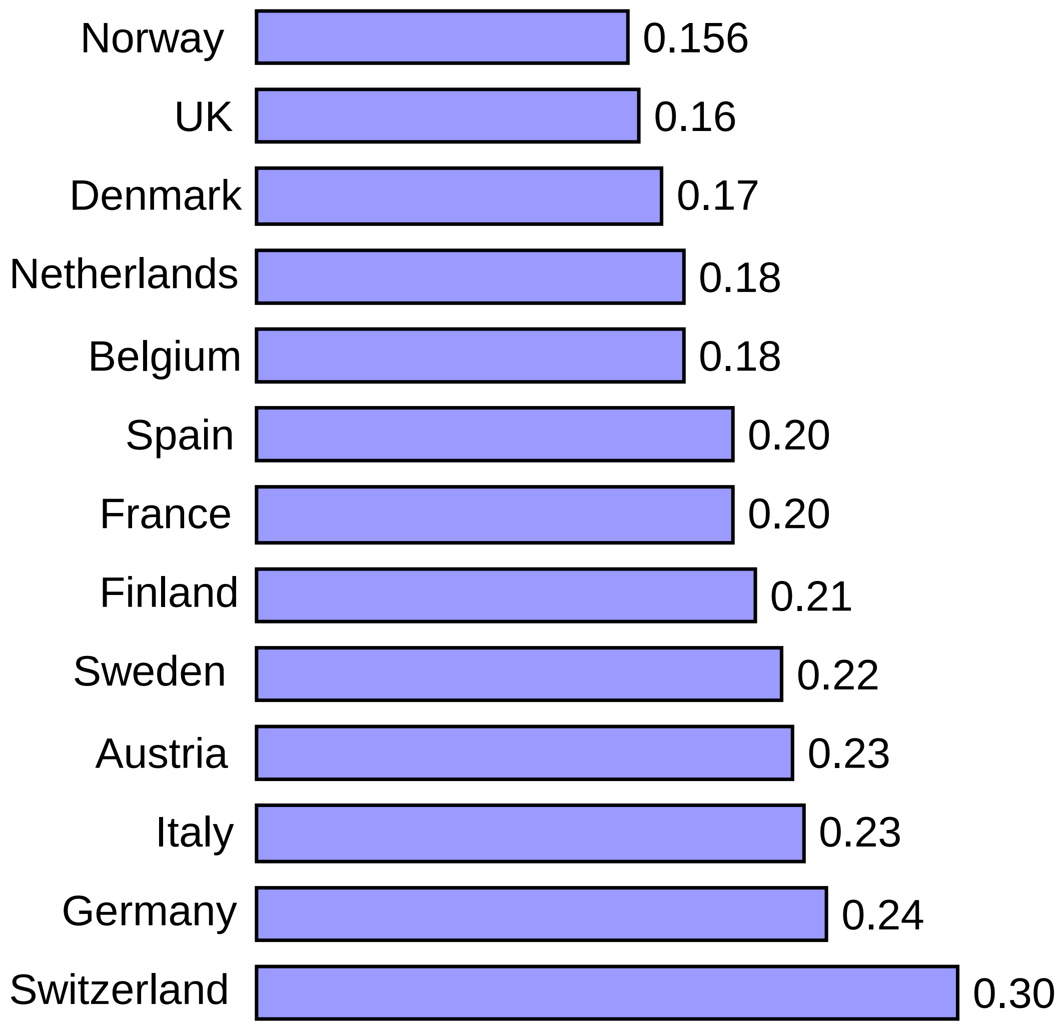
- Mobile party does not pay for incoming calls and fixed party pays a premium to call the mobile party
- Call termination paid by fixed operators is a significant part of mobile operator revenues

Fixed/Mobile interconnect rates in selected calling-party-pays countries, US$ per minute



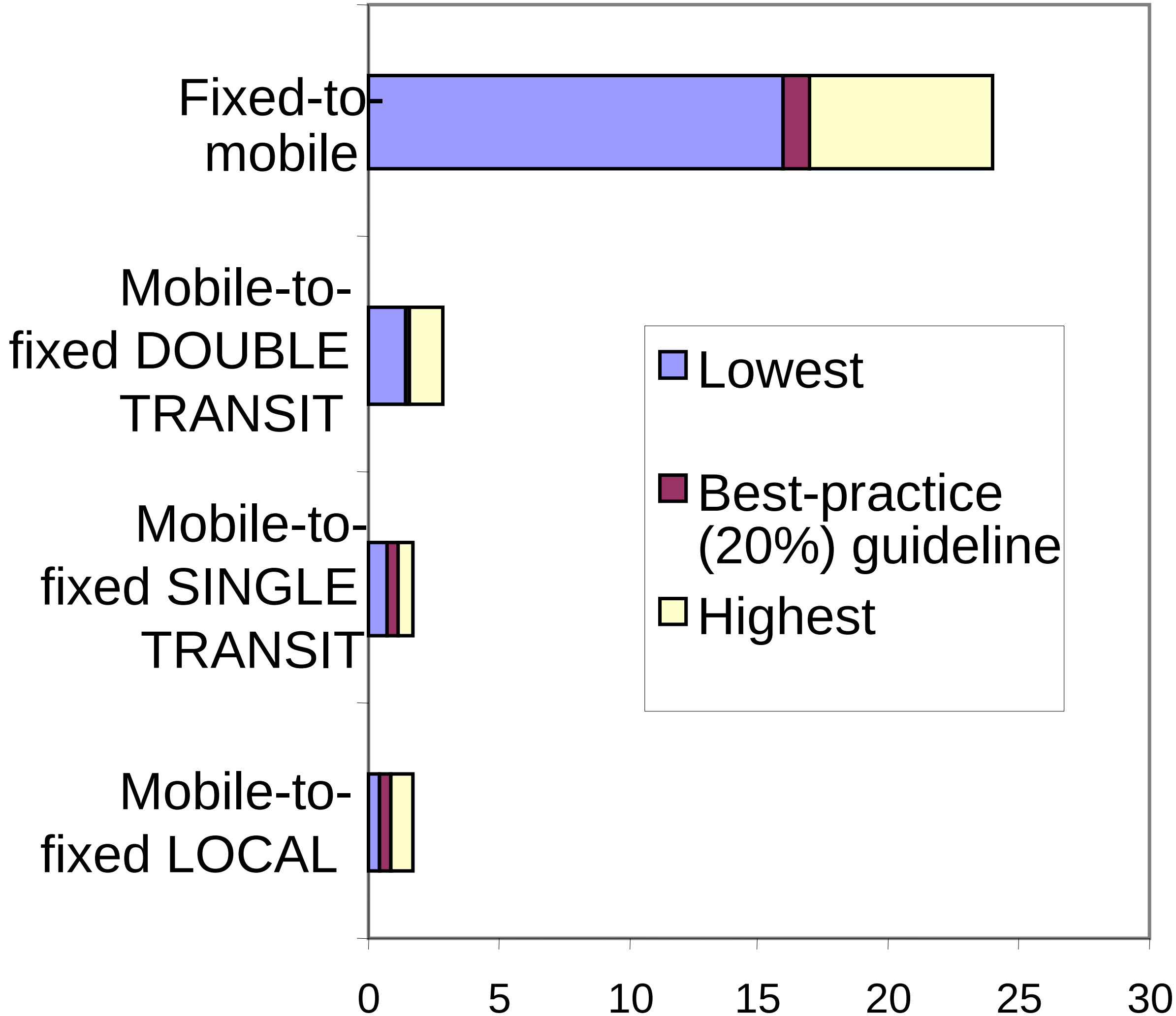
Source: ITU Regulatory Questionnaire Survey.

Fixed-to-mobile interconnection rates, Europe, US$ per minute



Source: ITU, compiled from ECTA/Analysys, EU Interconnection Tariffs in Member States, ITU Regulatory Survey 2000

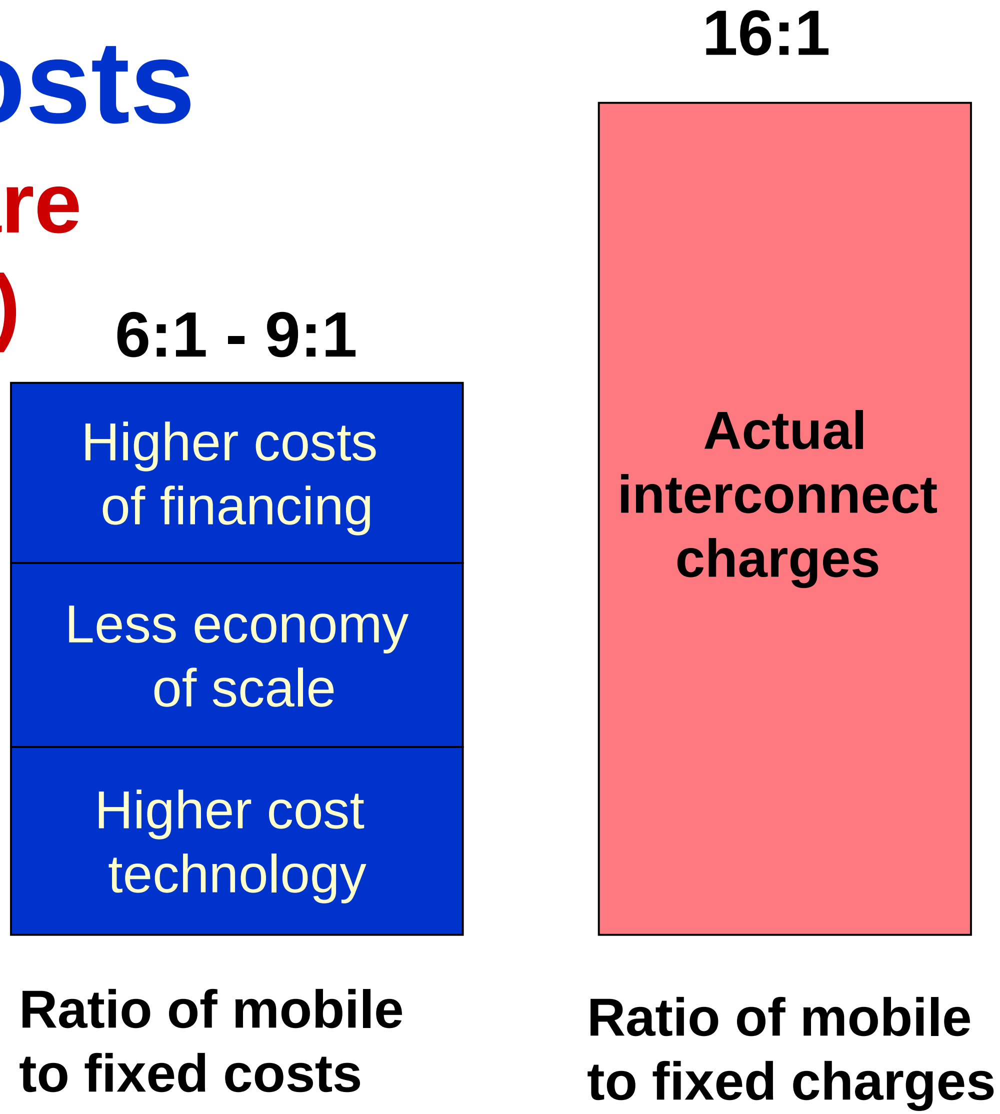
Asymmetries: Range of Interconnection rates in EU, US$ per minute



Source: ITU, compiled from ECTA/Analysys, EU Interconnection Tariffs in Member States, ITU Regulatory Survey 2000.

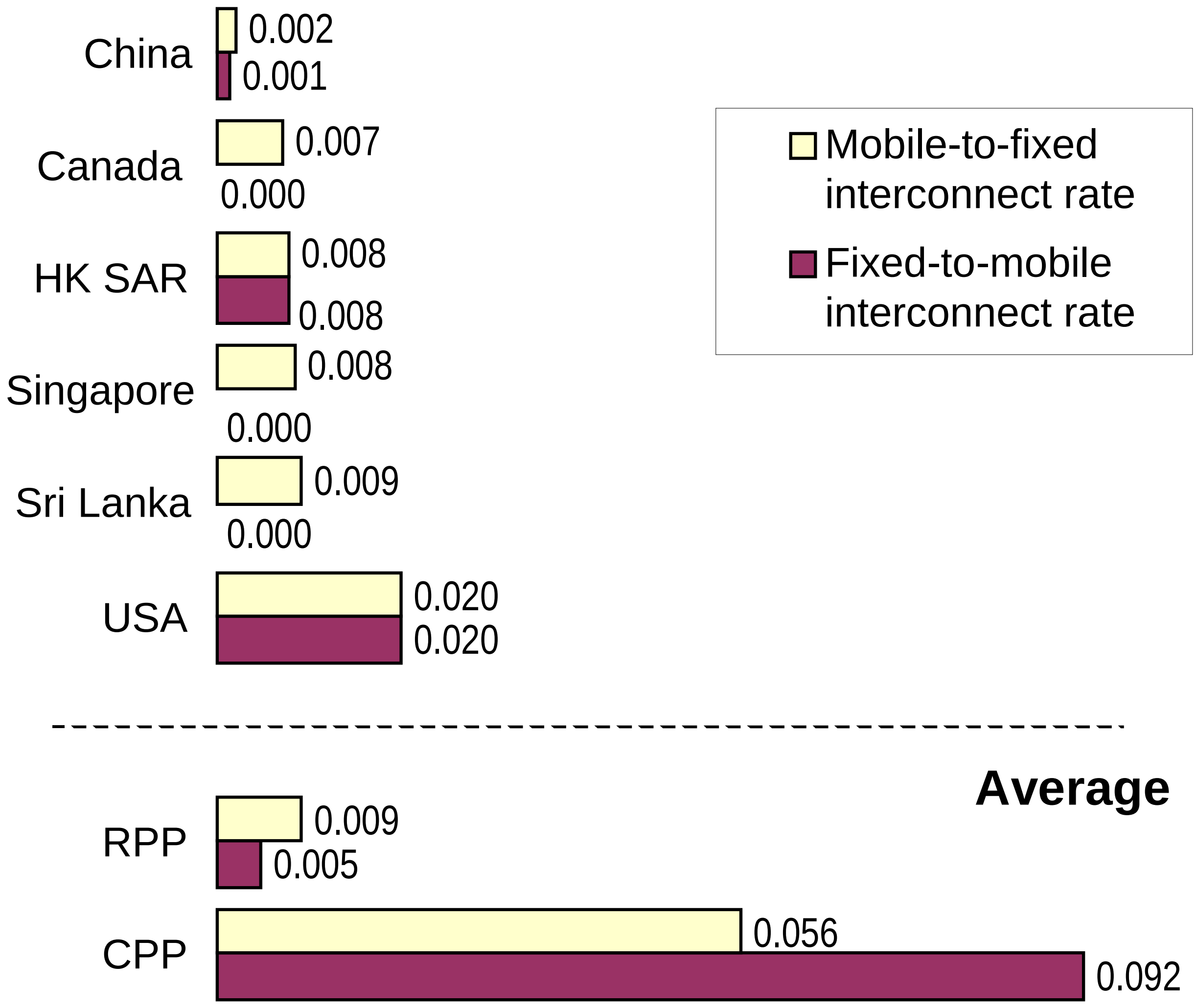
Mobile termination is out of line with costs

(even if costs are overestimated!)



Source: Ovum/EU.

Sample prices in RPP environments, in US$ per minute



Source: ITU Regulatory Questionnaire Survey.

Case Study India: The context

- Teledensity 2.2%
- Local market liberalized first
- Mobile Sector opened up in 1994
- The Dept. of Telecoms was both licensor and incumbent operator until late 1999
- Regulator TRAI created in 1995

2.4% World's Surface

1 billion people or 16.7% of World

34% Poverty

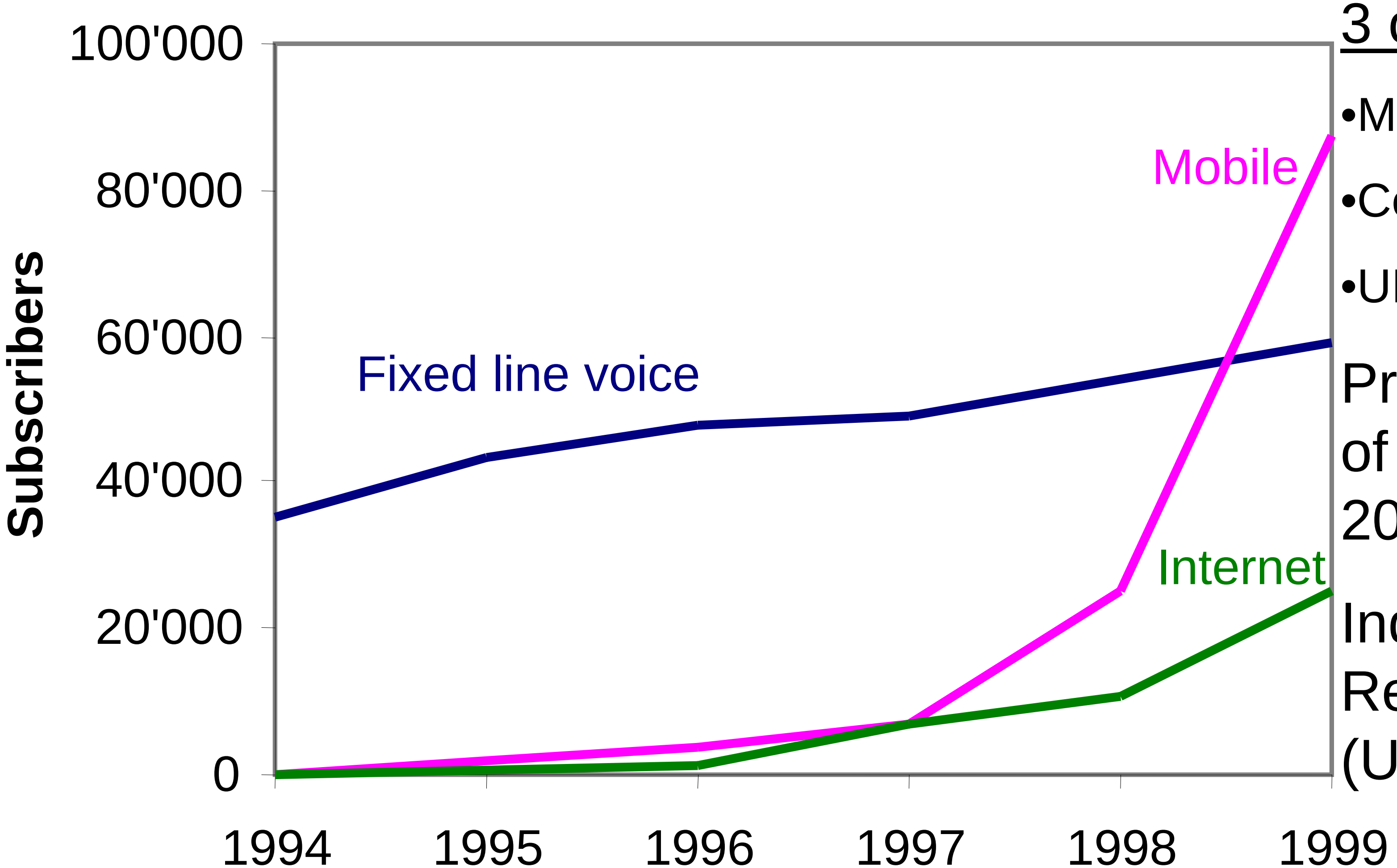
Case Study India: The Mobile Sector

- 34 mobile operators in circles (provinces) and 8 in metros
- Nearly 2 million subscribers in April 2000
  - ⇨ Growth of > 50% a year since March 1997
  - ⇨ 7.25% of total connections (F+M)
- In the circles, mobile network development is patchy
  - ⇨ Mobile operators rely on the incumbent (DoT/DTS) to carry much of their traffic
  - ⇨ …and incumbents planned to launch their own mobile services in Metros & Circles in 2000

Case Study India: Attempt at CPP

- Interconnection - main stumbling block for development of mobile
- Only mobile operators pay to interconnect
  - DoT/DTS pays no access charges for F-M calls
  - Mobile operators obliged to use DoT/DTS network, but have only limited access to it (via PoIs)
- TRAI attempted to introduce CPP Interconnect or "revenue-sharing" scheme, but failed
  - Delhi High Court found that TRAI lacked jurisdiction
  - January 2000: Authority was disbanded & the TRAI Act amended

Case Study Uganda: Mobile rapidly overtaking fixed



3 operators:

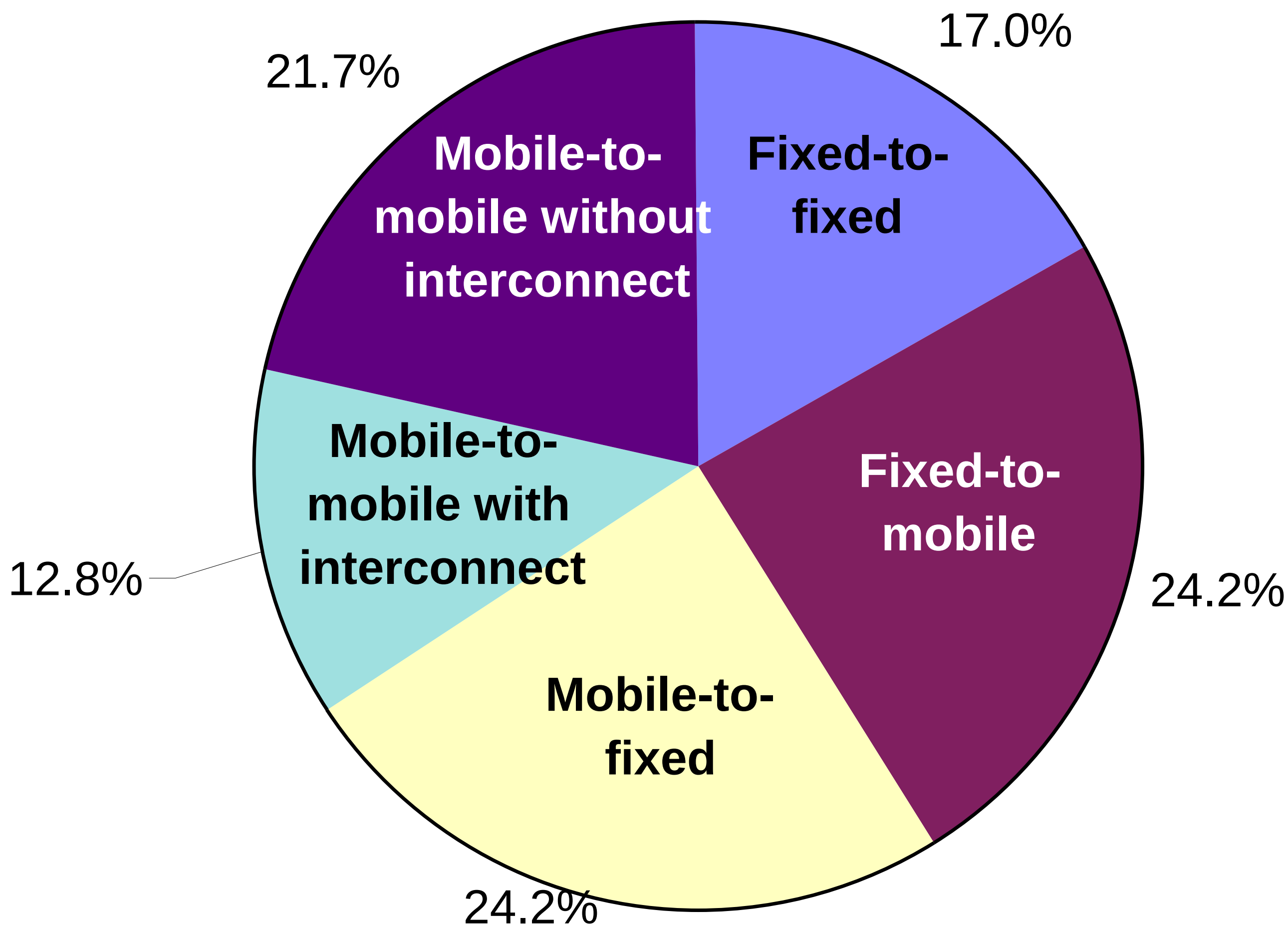
- MTN Uganda
- Celtel
- UPTL

Privatisation of UPTL in 2000

Independent Regulator (UCC)

Source: ITU Internet diffusion case study of Uganda, www.itu.int/ti/casestudies

Uganda: Changing balance of power in calling opportunities, Dec. 1999



Source: ITU Internet diffusion case study of Uganda, www.itu.int/ti/casestudies

Implications for public policy

- **Operators can always blame high prices on someone else:**
  - **Mobile service providers blame other operators for high roaming charges**
  - **Fixed-line service providers blame mobile operators for high termination charges**
- **Regulators are cautious to act:**
  - **Mobile service <u>is</u> competitive, isn’t it?**
  - **Don’t rock the boat when mobile operators are recycling profits in high prices for 3G spectrum**
- **Users are confused:**
  - **Telephone prices are falling but not telephone bills**
  - **To whom to we complain?**

For more information ... ITU Website at www.itu.int/interconnect

Case studies

- **Finland**
- **India**
- **Mexico**
- **China/HK**

Trends in Telecom Reform, 2001 edition: Interconnection