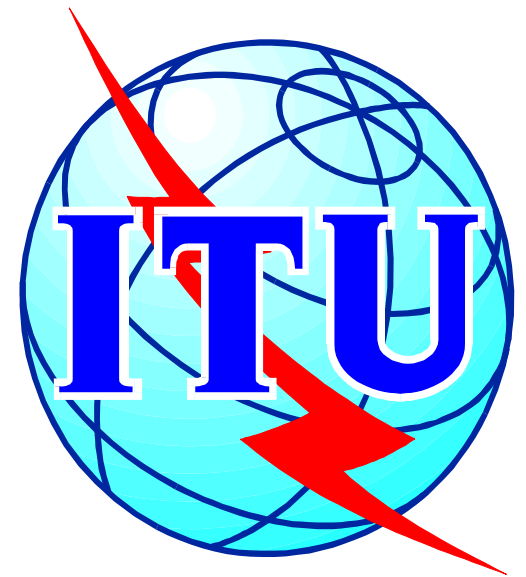


Regulatory environment for fixed-mobile interconnection

**Tim Kelly & Lara Srivastava,
Strategy & Policy Unit, ITU
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 be 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.

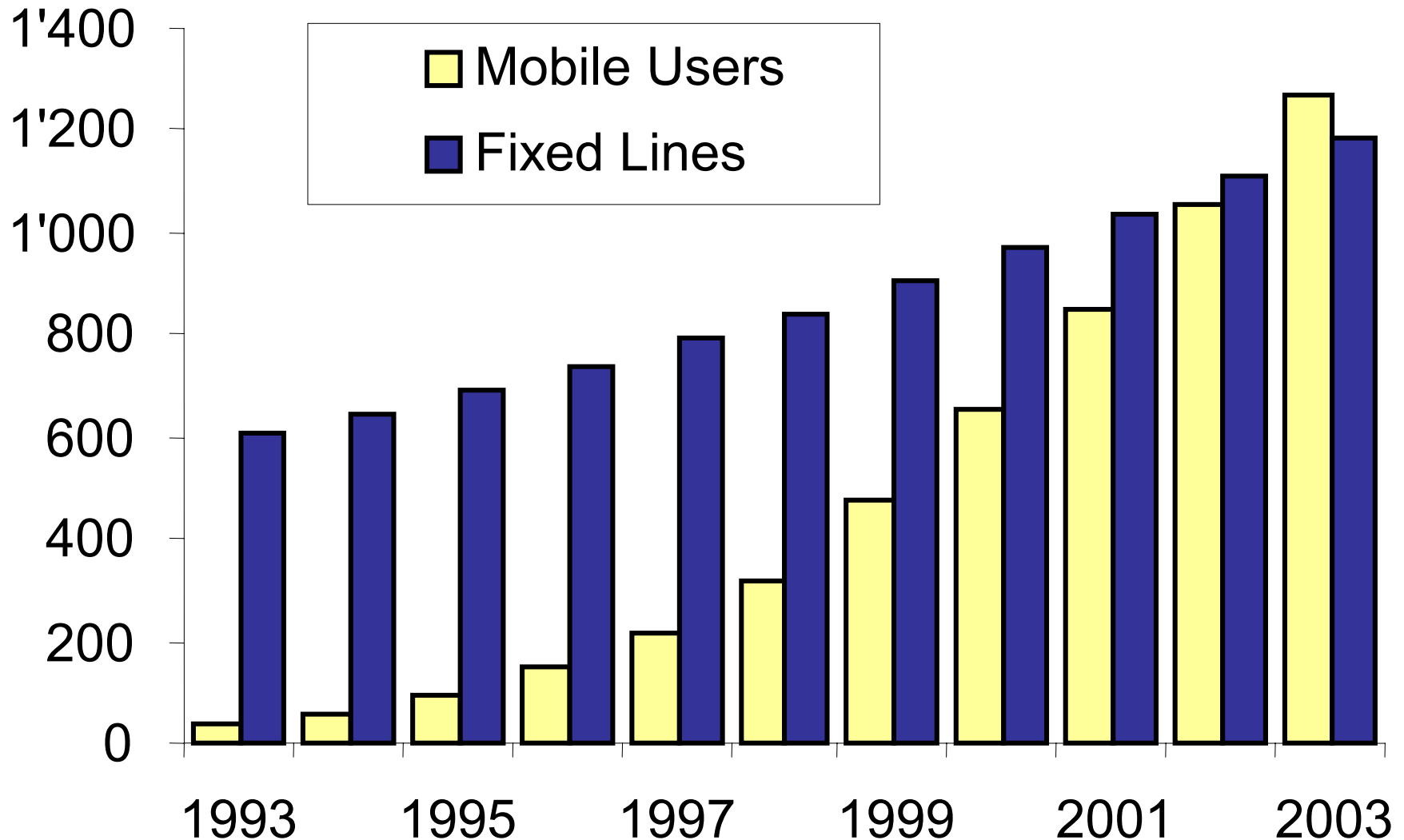


Agenda

- **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?**

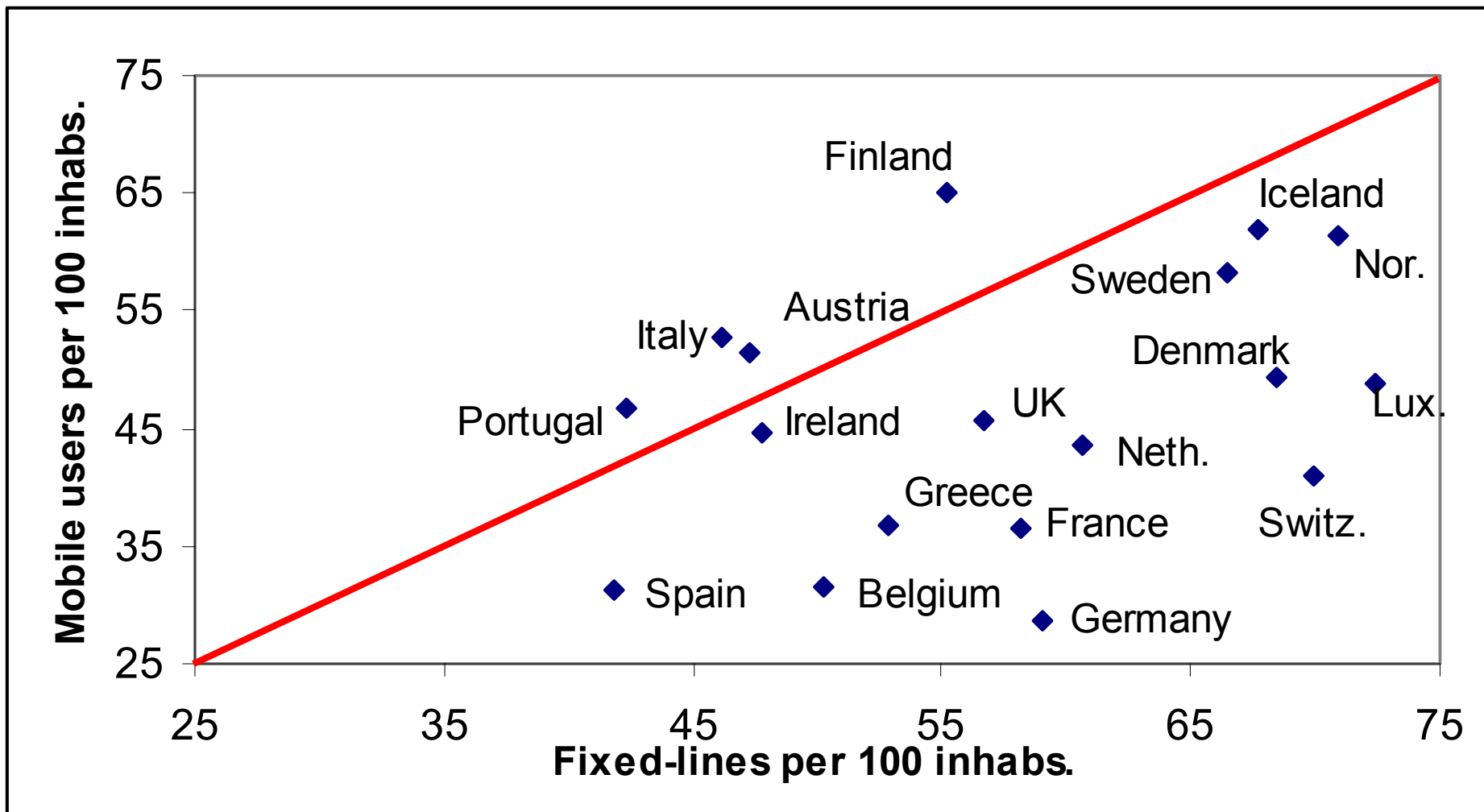
A Mobile Revolution

Fixed Lines vs. Mobile Users, worldwide, Million



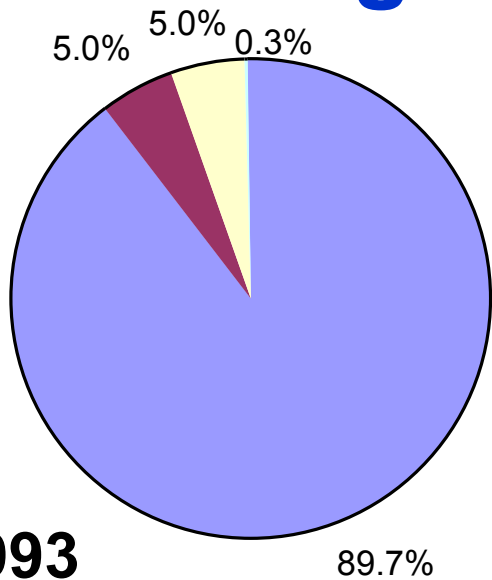


Relationship between teledensity and mobile density, Europe, 1/1/00

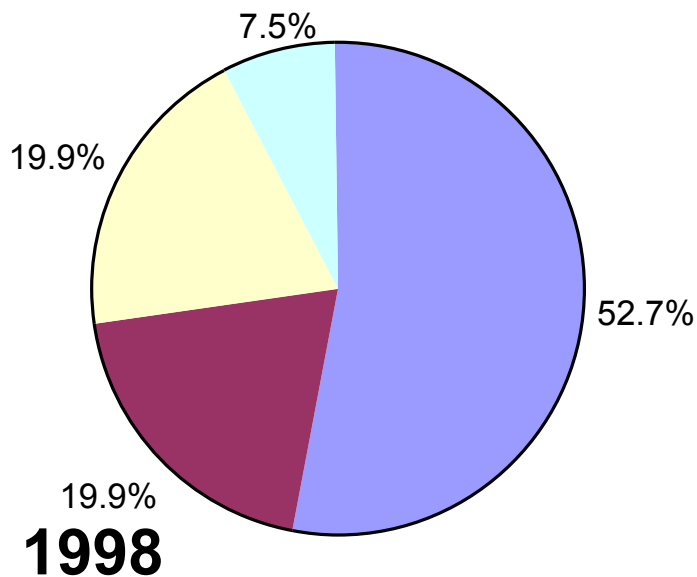




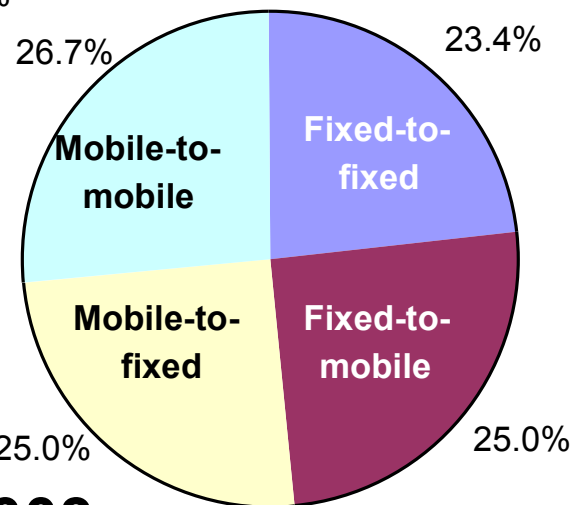
Calling opportunities worldwide



1993



1998



2003



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**



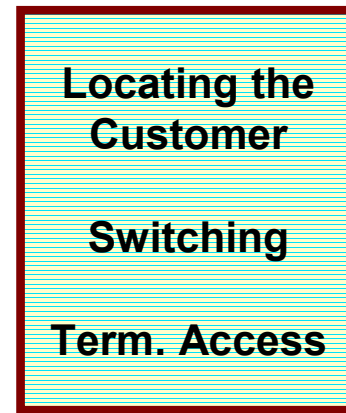
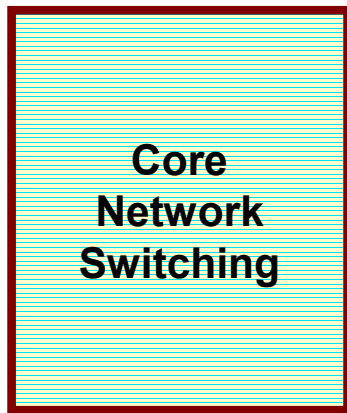
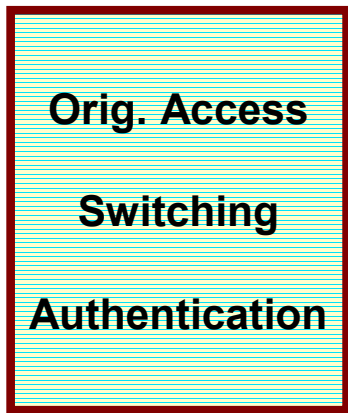
Elements of a Fixed to Mobile call



Calling Party
(FIXED)

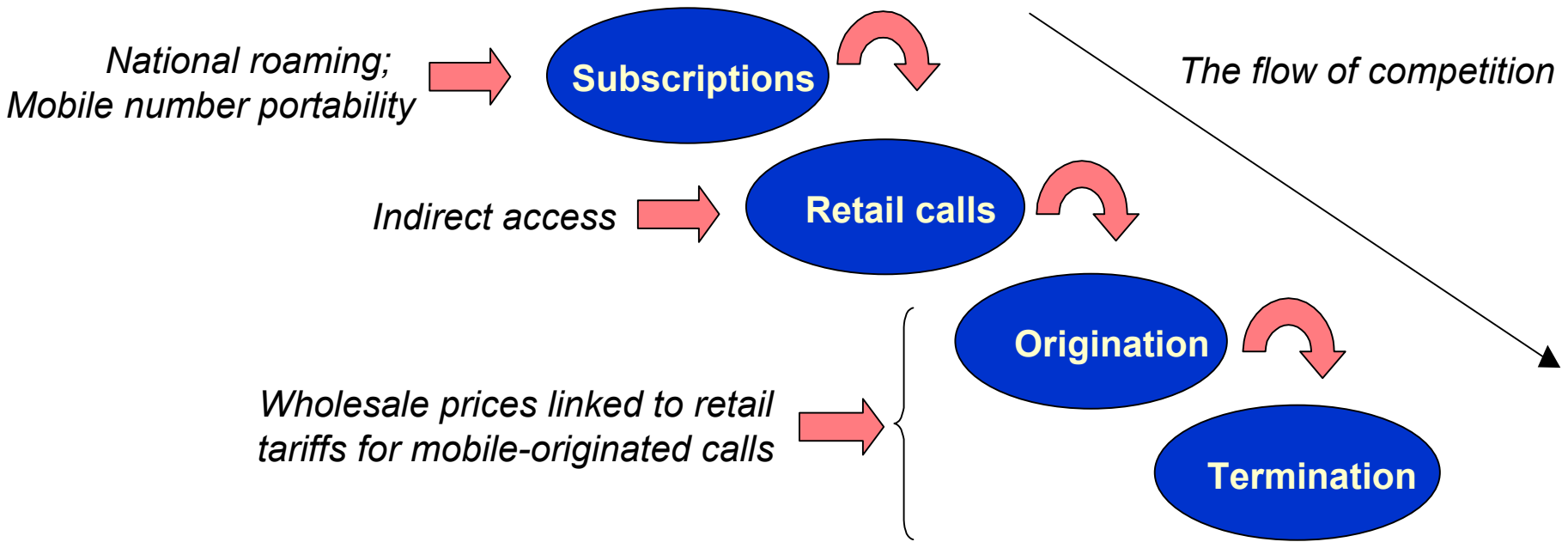


Called Party
(MOBILE)





The competitive cascade





RPP vs. CPP: What's the difference?

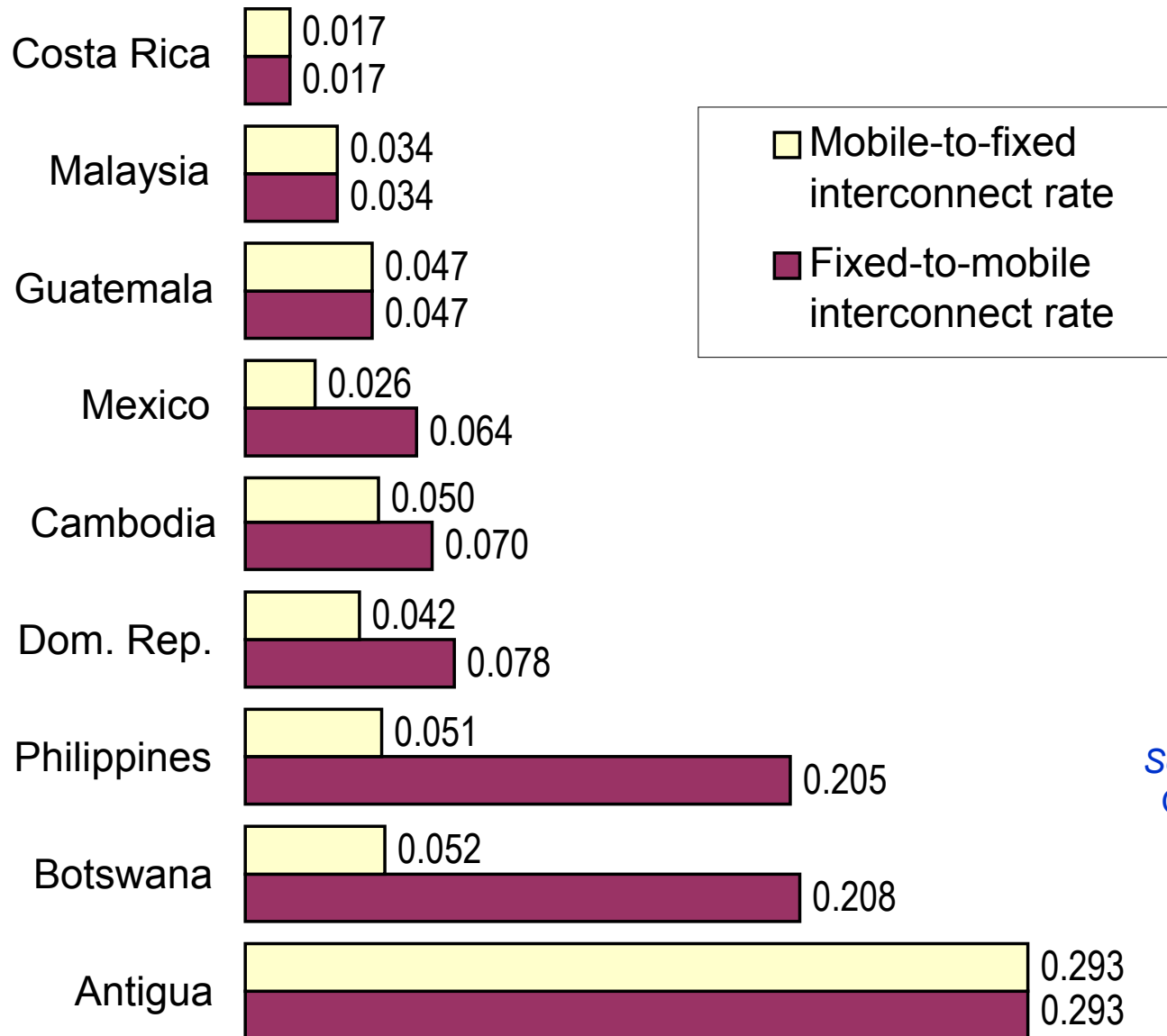
Receiving Party Pays

- ⇒ 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

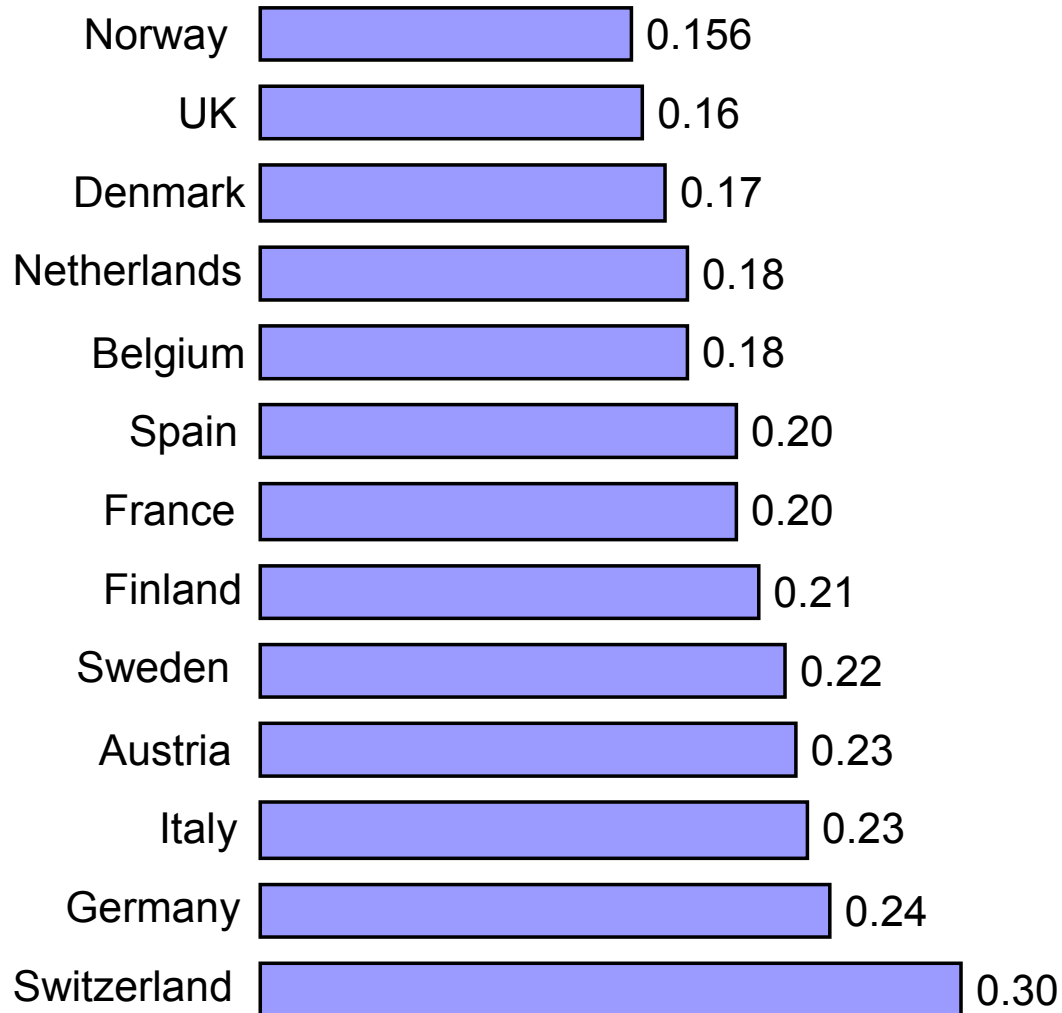
Fixed/Mobile interconnect rates in selected calling-party-pays countries, US\$ per minute



Source: ITU Regulatory Questionnaire Survey.



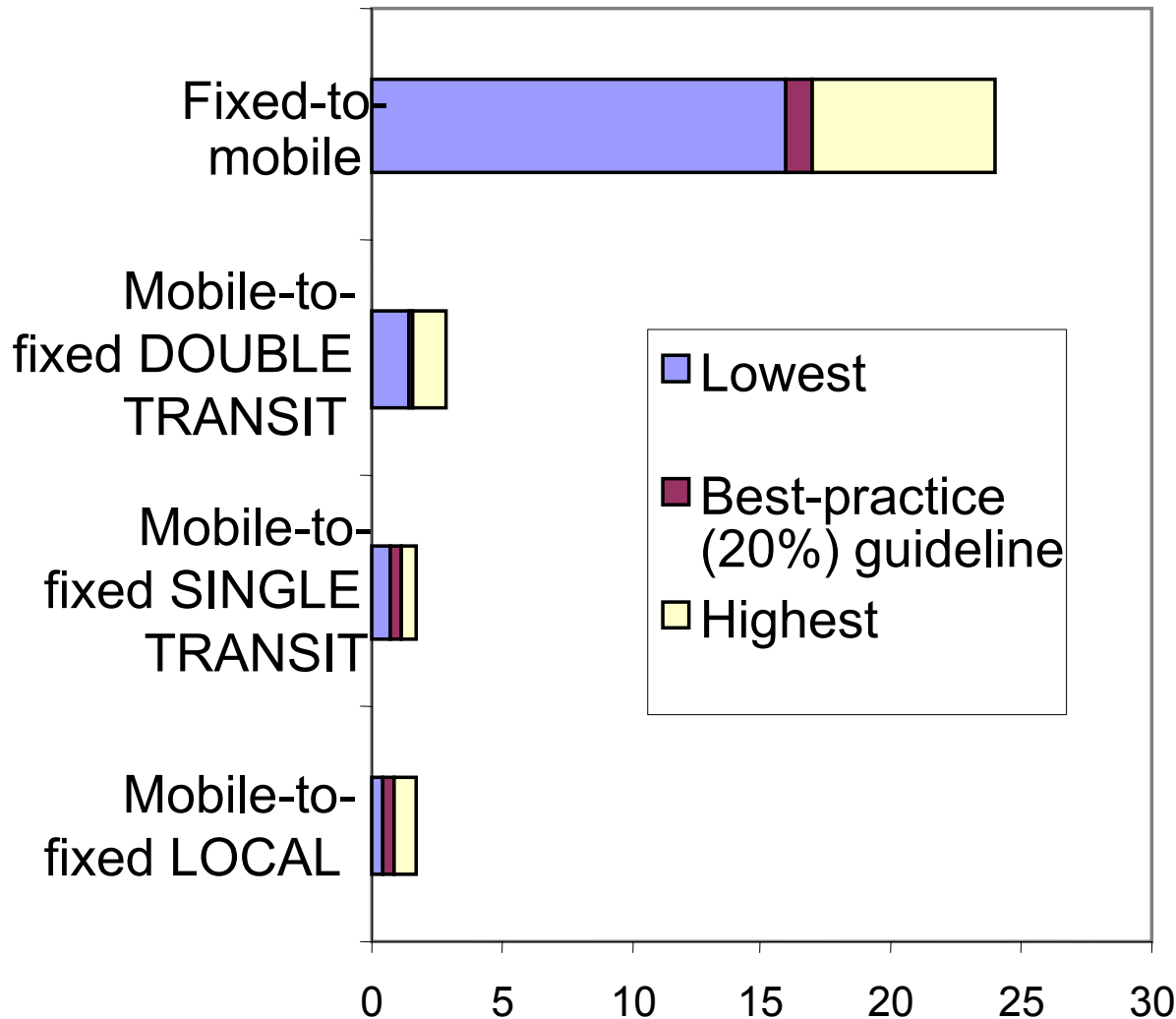
Fixed-to-mobile interconnection rates, Europe, US\$ per minute



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



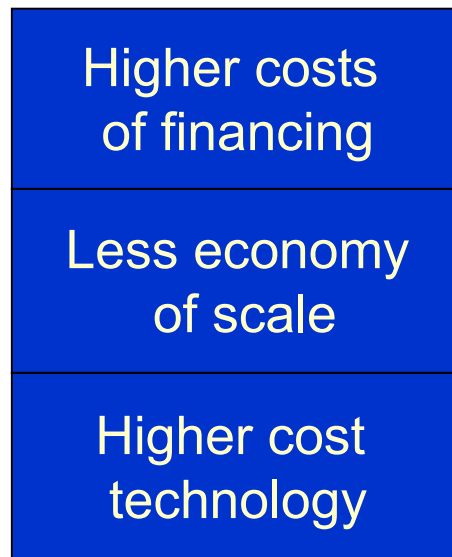
Source: ITU, compiled from ECTA/Analysys, EU Interconnection Tariffs in Member States, ITU Regulatory Survey 2000.



Mobile termination is out of line with costs

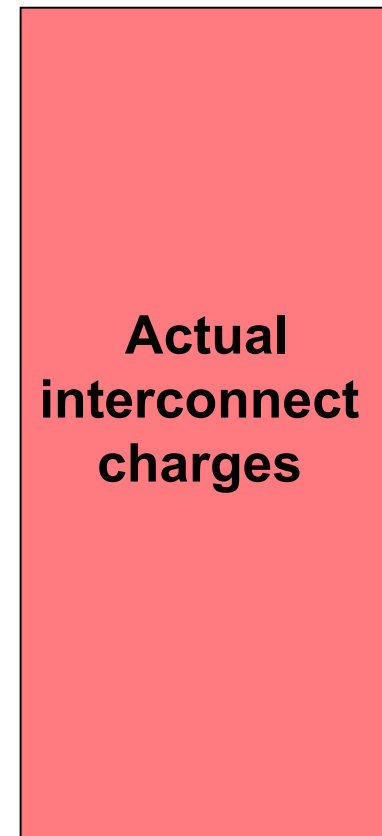
(even if costs are overestimated!)

6:1 - 9:1



Ratio of mobile to fixed costs

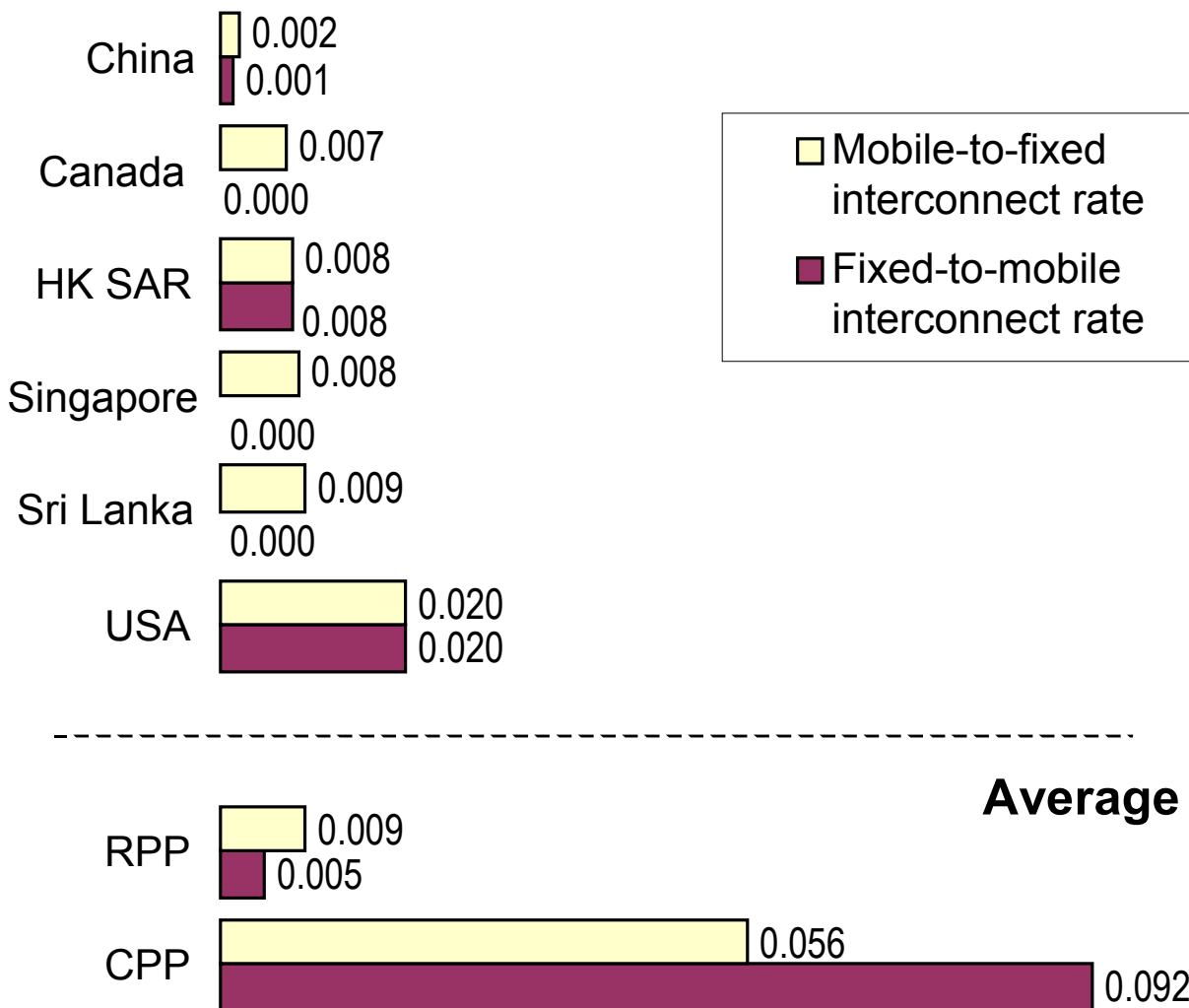
16:1



Ratio of mobile to fixed charges



Sample prices in RPP environments, in US\$ per minute



Case Study India: The context

- Teledensity 2.4%
- Local market liberalized first, then long distance
- 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**
- **More than 3 million subscribers in Dec 2000**
 - ⇒ **Growth of > 50% a year since March 1997**
 - ⇒ **Mobile density around 0.3%**
- **In the circles, mobile network development is patchy**
 - ⇒ **Mobile operators rely on the incumbent (DoT/DTS) to carry much of their traffic**
 - ⇒ **...and incumbents launched their own mobile services in Metros & Circles in 2000**

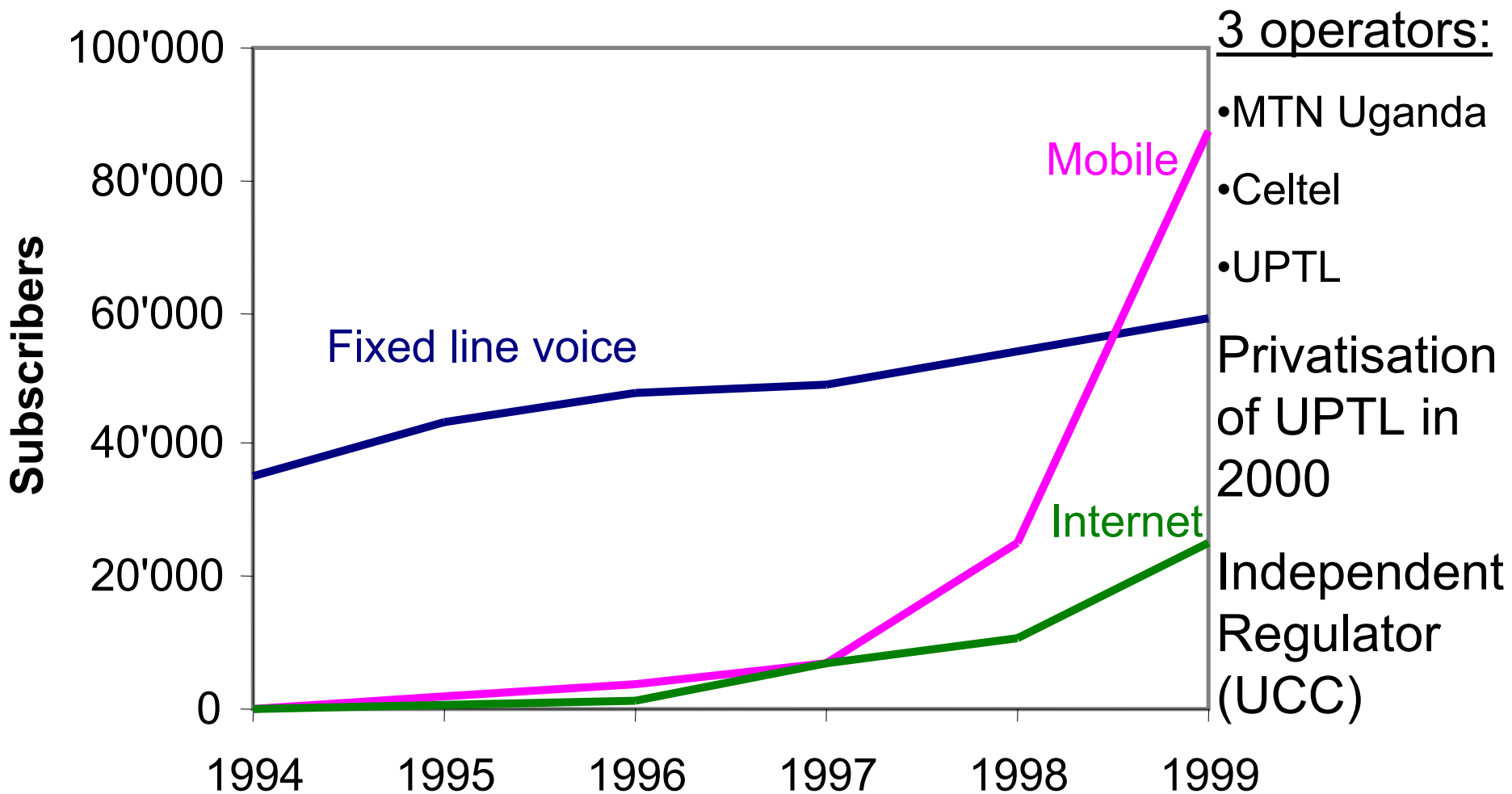


Case Study India: Attempt at CPP

- **Interconnection - main stumbling block for development of mobile in India**
- **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 Pops)**
 - **Compromise proposed over WLL access**
- **TRAI attempted to introduce CPP “revenue-sharing” scheme, but failed. Now trying again**
 - **Delhi High Court found that TRAI lacked jurisdiction**
 - **January 2000: TRAI Act amended**

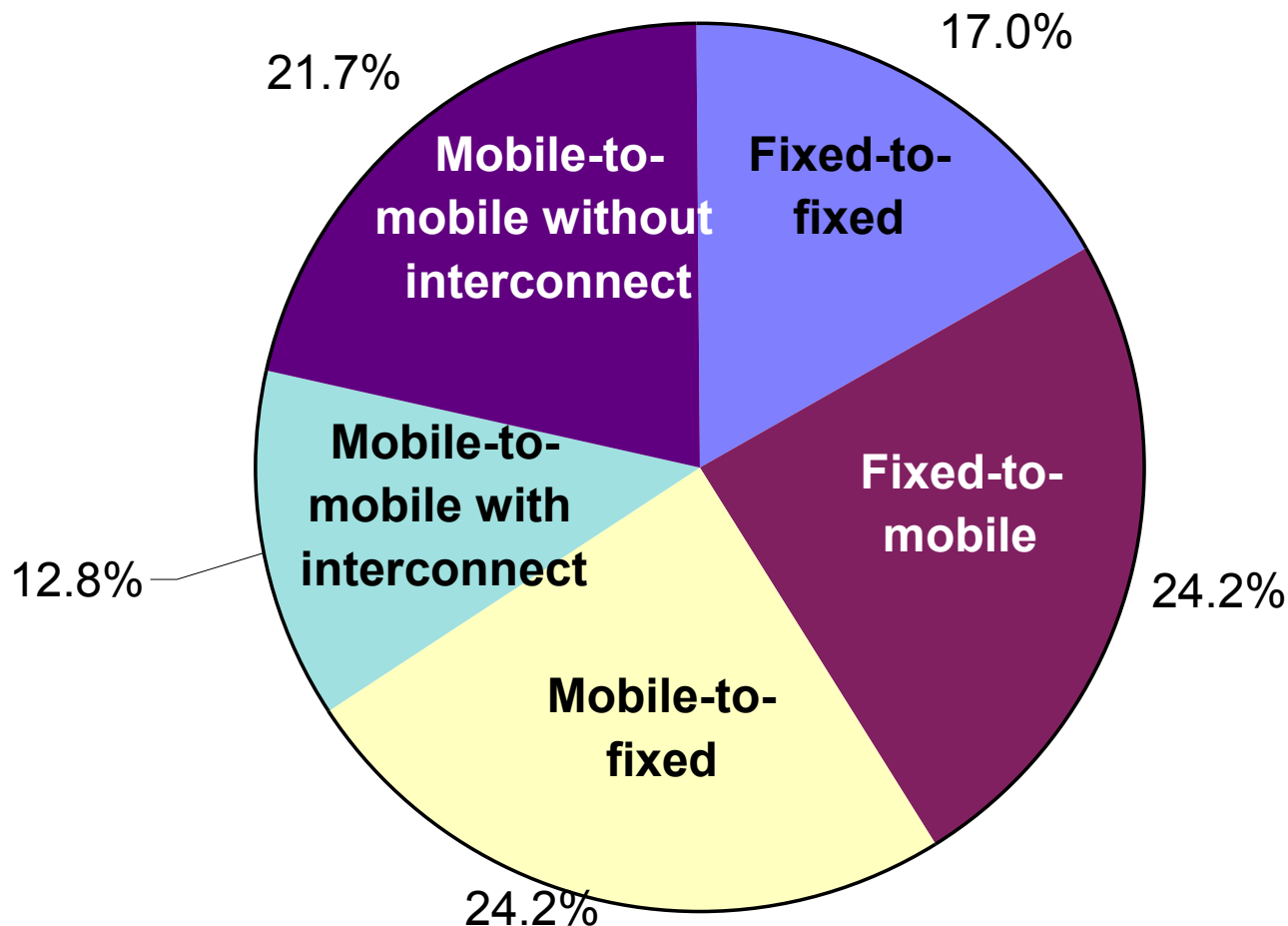


Case Study Uganda: Mobile rapidly overtaking fixed





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





Implications for public policy

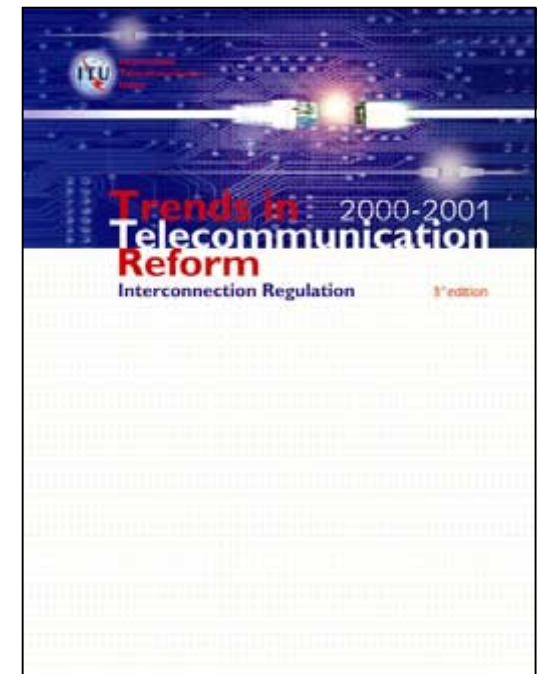
- **Operators can always blame high prices on someone else:**
 - **Mobile service providers blame other operators for high roaming charges**
 - **Fixed-line service providers blame mobile operators for high termination charges**
- **Regulators are cautious to act:**
 - **Mobile service is competitive, 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 do 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**