

**STRATEGIES to ACHIEVE CONNECTIVITY& CONVERGENCE : Executive  
Course on Telecom Reform**

# **The Use of Benchmarks in Regulation**

**What Operators & Regulators Need to Think About**

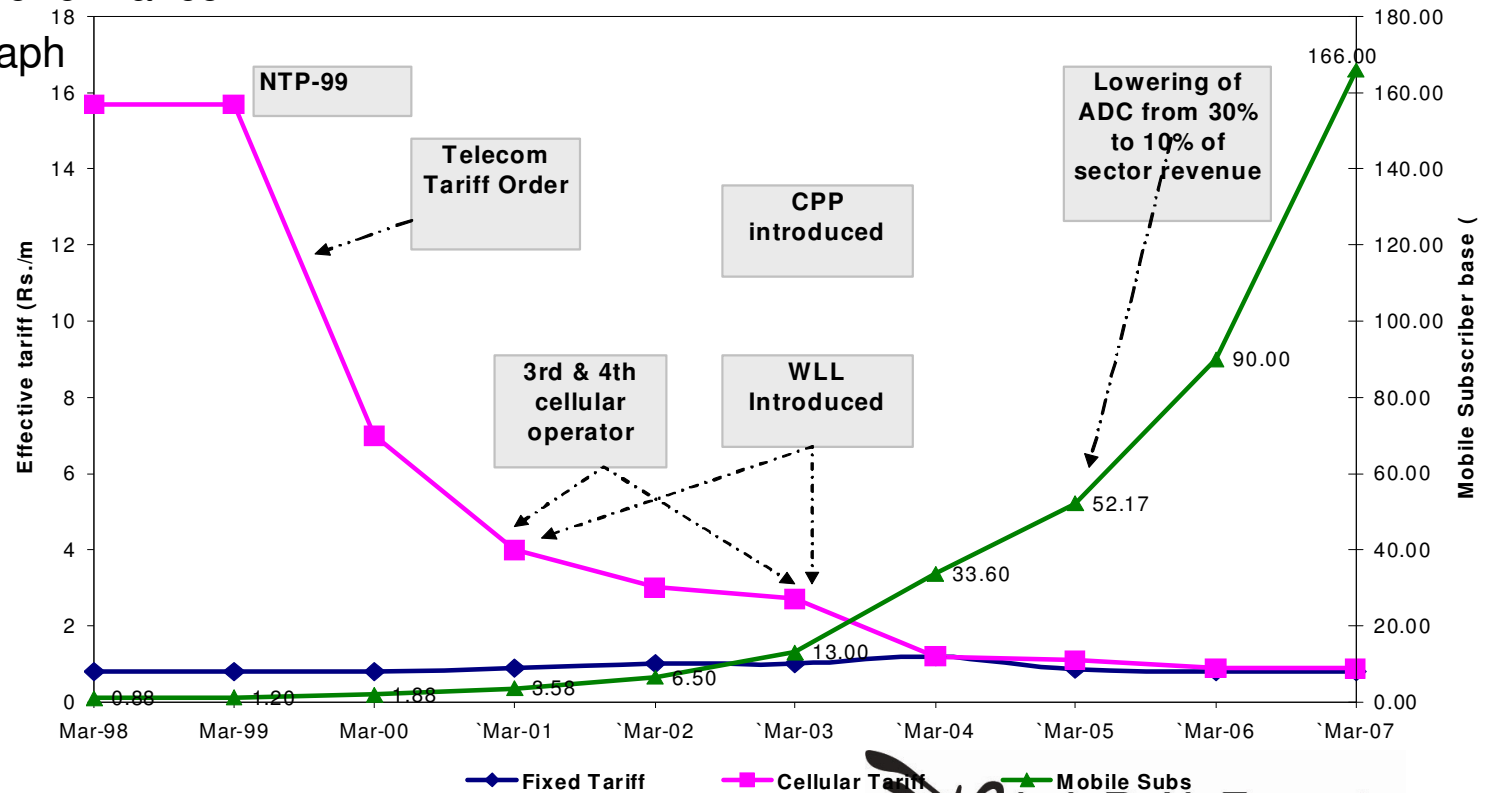
Singapore  
June 10 – 14 2008

*Helani Galpaya - galpaya@lirne.net*



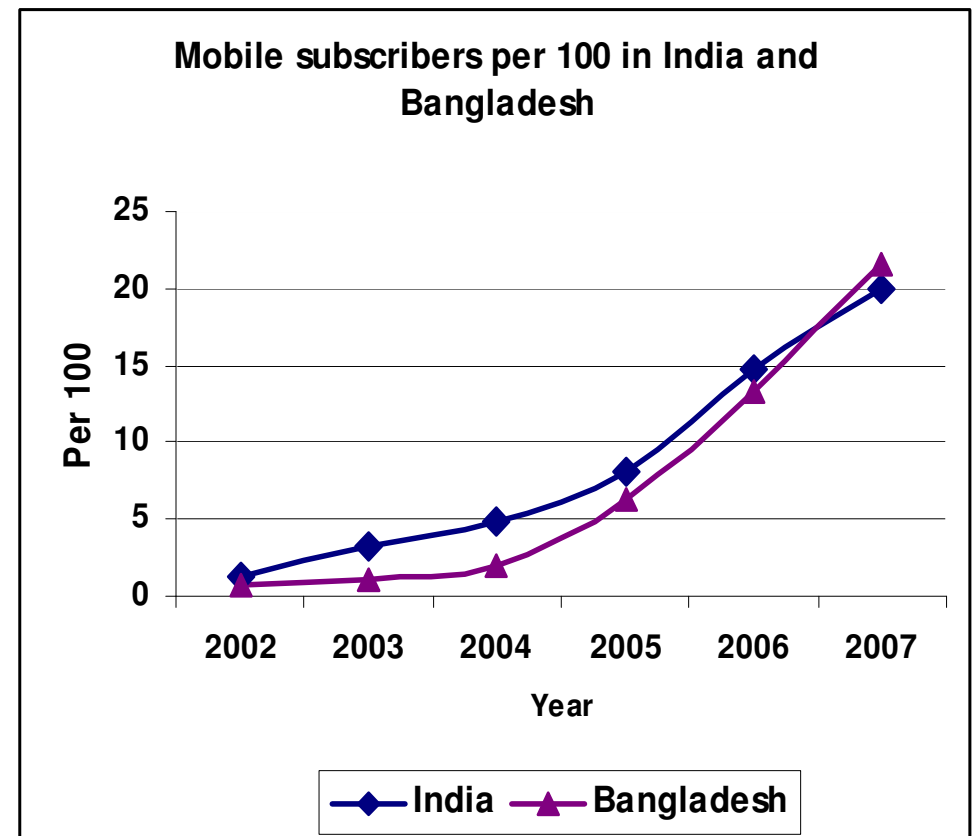
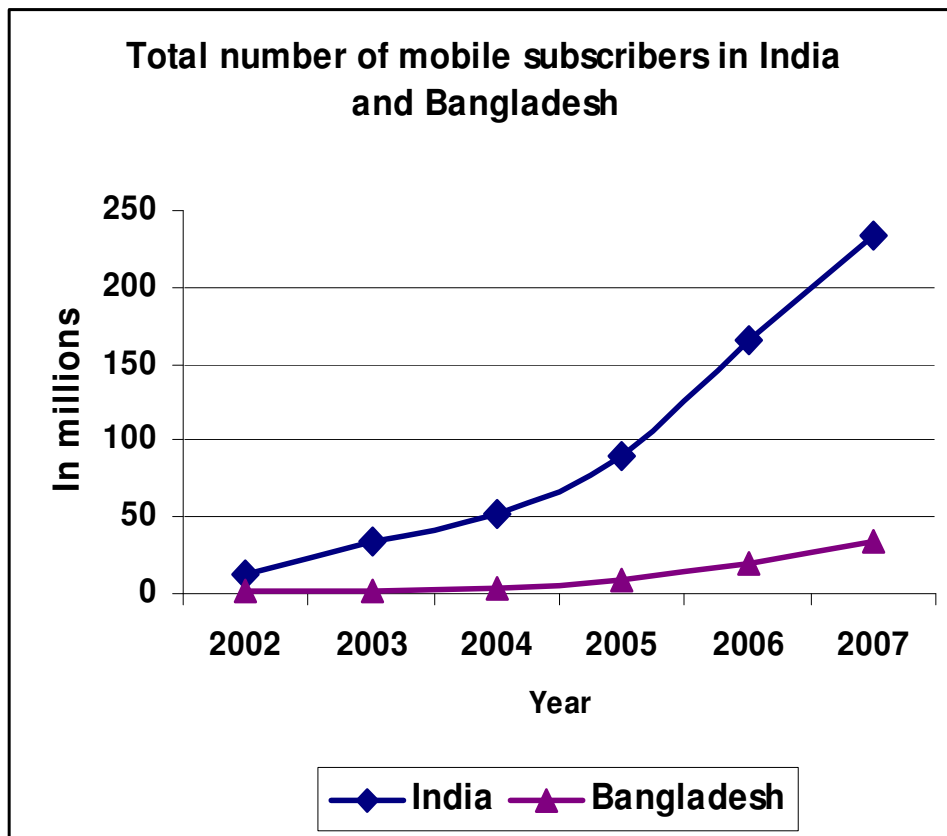
# Indicators – useful. A lot available.

- ▶ Telco sector has LOTS of indicators
- ▶ Indicators Used all the time
  - To analyze historical performance
  - E.g. India's famous graph



## But COMPARATIVE INDICATORS (= BENCHMARKS) are most useful

- ▶ You may think you are doing well until you compare yourself against others
- ▶ BENCHMARK: a comparison
  - The same indicator, compared across countries, organizations, regions, etc.



## But can we do more than “after-the-fact” benchmarking?

- ▶ 2 possible examples
  - Price
  - Quality

# 1. Price regulation – in the light of imperfect market conditions

## What the conditions for perfect/well functioning markets?

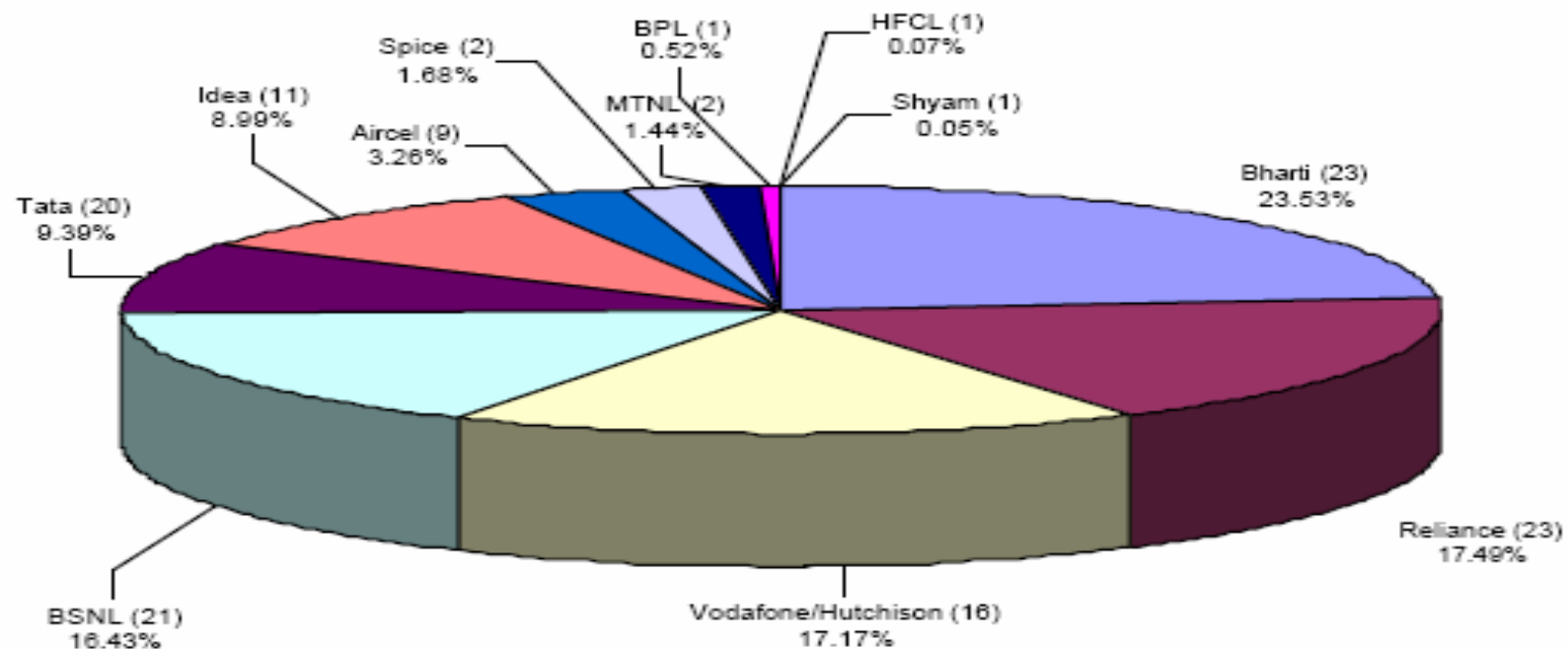
- ▶ Perfect Information
- ▶ No barriers to entry and exit
- ▶ No Market power
  - Multiple buyers and sellers
- ▶ Substitutable products
- ▶ Rational market players

## **In such markets, prices set by interaction of supply and demand. Role of regulator could be minimal**

- ▶ If enough suppliers and buyers
  - Harder to collude
  - Suppliers set rational prices – i.e. prices that reflect costs
  - Price competition occurs
  - Usually prices drop
  
- ▶ Regulators can often step back
  
- ▶ E.g. [though not perfectly competitive] India has highest level of competition
  - Each region/circle (not just country) has seen increase competition
  - Widely perceived to have lowest prices in the region
  
- ▶ Indian Regulator (TRAI) has forborne from tariff regulation (for the most part)
  
- ▶ Rewarded with highest TRE scores

e.g. India has high competition with many players.

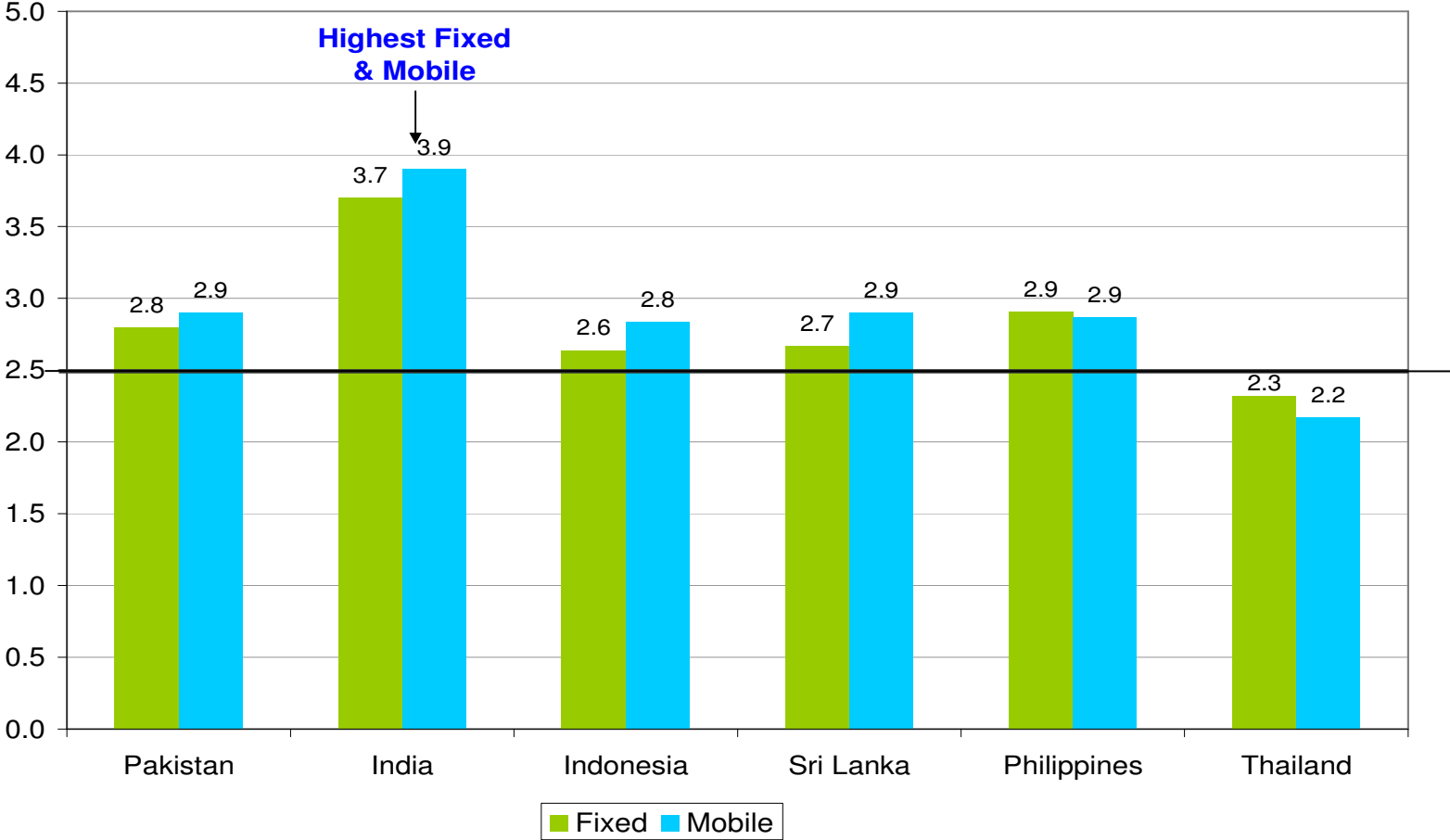
Figure 3: Market share of the mobile operators as of March 31, 2007<sup>42</sup>





# Forbearance in Tariff Regulation seen positively by stakeholders

## TRE for Tariff Regulation



## But telecom markets are NOT perfect markets.

- ▶ Significant Information Asymmetries
  - Certain players have more information than others.
- ▶ Access to scarce resources a barriers to entry
  - E.g. rights of way to cable, towers, spectrum
- ▶ Increasing returns
  - Large chunks of investment
  - Essential facilities
- ▶ Ability to extend market power from one market to another
  - E.g. fixed to mobile

## Therefore regulatory intervention in price setting through various tools/methods....e.g. Rate of Return Regulation

- ▶ Regulates (limits) the PROFITS
- ▶ Find out costs
  - Prudently incurred expense.
  - Actual.
  - Not forward looking (past for accounting period)
- ▶ Add a reasonable/"fair" rate of return
  - based on weighted avg. cost of capital
- ▶ Determine Revenue Requirement
  - a function of operating expenses, depreciation, taxes,. Book value of capital assets, Rate of Return
- ▶ Set prices so that
  - Sum of expected revenue from all services  $\leq$  Revenue Requirement

## ...and Price Cap Regulation...and other variations on it

- ▶ Regulates (limits) PRICES
- ▶ Regulator determines formula
- ▶ Tells how much prices must change in each period (year)
- ▶ Typically, allowed revision =  $CPI - x$ 
  - CPI = Consumer Price Index/Inflation
  - $x$ =efficiency factor
- ▶ So allowed new price = previous price \*  $(1 + CPI - x)$
- ▶ Other variations on these

## These techniques often have perverse incentives and very resource intensive to implement

### ▶ E.g. ROR Regulation:

- ▶ Determining cost (e.g. used and useful) difficult
  - E.g. CEO's holiday bungalow vs. cost of new switching equipment
  - Who has better information about such cost? NOT the regulator
- ▶ Lack of uniform system of accounts
  - E.g. rules on depreciation of assets: unclear
- ▶ No incentive to lower costs/become efficient
  - Any increased profits would be taken away by regulator
- ▶ Requires rate-rebalancing regularly
  - Very resource heavy
  - Not useful for today's fast changing telecom environment

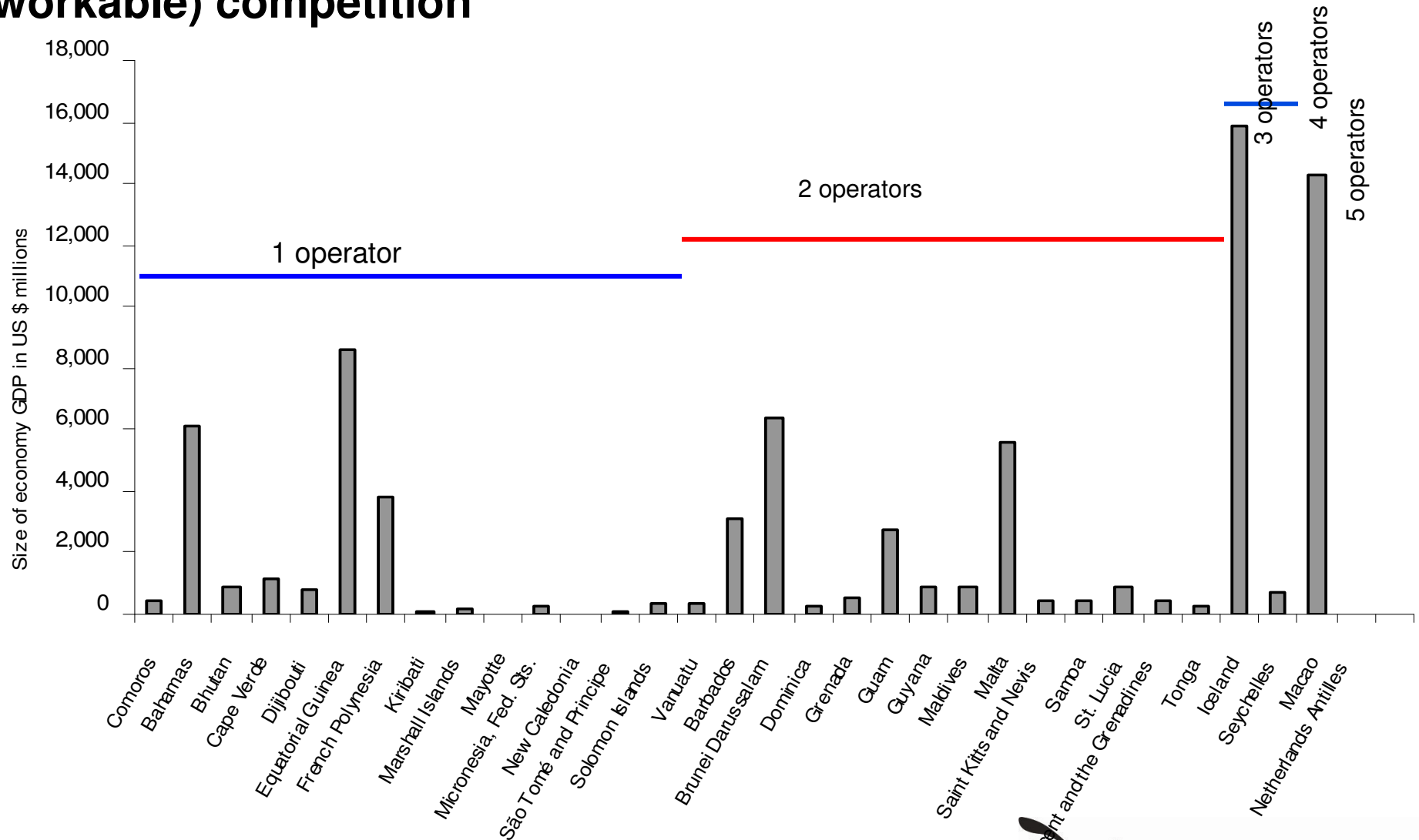
▶ **E.g. Price Cap Regulation**

- ▶ Incentive to lower costs
  - Get to keep any extra profit (since price capped, but profits are not)
  
- ▶ But calculating X difficult.
  - Doesn't work for high-inflation countries
  - e.g. LK CPI ~27%. Some licenses define  $x = 2\%$ .
  - Means prices may actually increase 25%!

## The resource problem might be solved by Asymmetric Regulation..but that too has problems

- ▶ Asymmetric Regulation regulates dominant operator (~ the one with SMP)
  - They have to file tariffs and obtain approvals
- ▶ But de-regulates all other players
  - They can do what they like
  - Their tariff's do not require approval/filing
- ▶ Solves the resource problem only partially
  - Dominant operator still has to be regulators
  - How? Same difficulties as before (resource heavy. perverse incentives).
- ▶ AND end up with a very unhappy Dominant Operator
- ▶ Needs a high level of competition to work
  - Not useful in oligopoly if the few competitors are shadows of the dominant operator

# Micro-states often unlikely to get conditions of perfect (or even workable) competition





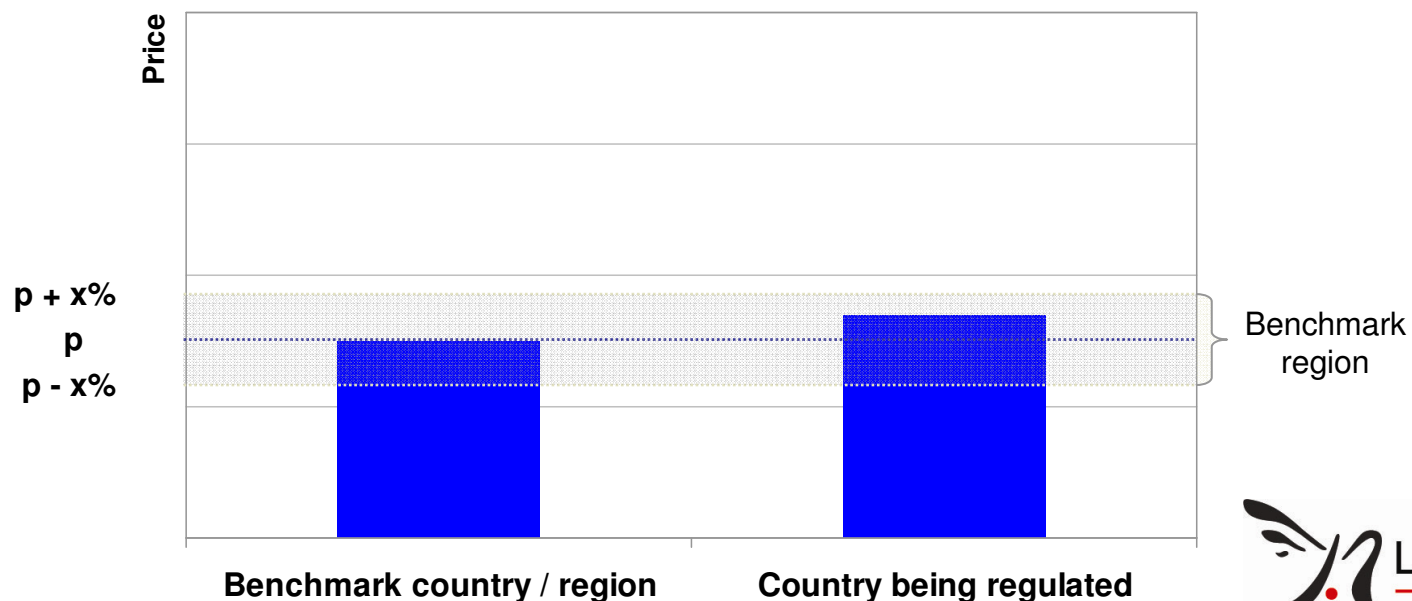
## **Fewer competitors and regulatory agencies with limited resources. Requires a new approach?**

- ▶ Unlikely to have conditions of workable competition
  - Smaller number of competitors supported by market
  - Even though no monopoly/duopoly
- ▶ Therefore even Asymmetric Regulation may not be feasible
- ▶ Smaller regulatory agencies
  - Can't do resource intensive regulation.
  - Need to allocate scarce resources to priorities
- ▶ E.g. ensure good Interconnection conditions vs. approve/regulate every tariff?

# LIRNEasia's proposal: Banded Forbearance. Based on using BENCHMARKS for regulation

- ▶ General principle of Benchmark regulation
  - make regulatory decisions based on comparison with others
  
- ▶ 1. Pick the indicator
  - Fixed/Mobile: A “modified” OECD price basket
  - Internet: Monthly price of selected service plan
  
- ▶ 2. Identify the peer group
  - Regional: often culturally similar, belong to same regional organizations
  - Economic: similar ability to pay, similar levels of development
  - Demographic: similar population numbers (particularly relevant for microstates?)
  - Geographic: island nations; land-locked countries
  - Other
  
- ▶ 3...contd.

- ▶ 3. Define benchmark period
  - Every quarter/every year etc
  
- ▶ 4. Define the Band (upper and lower limit)
  - Peer average  $\pm x\%$
  - Lower limit = lowest peer; Upper limit = highest peer
  - Other variations



## After these things are defined:

- ▶ Anything goes within the band
  - Simply inform the regulator
  - But don't require approval
- ▶ All new tariff plans **MUST** fall within
  - Else not approved; plan cannot be introduced to market
- ▶ If plans go outside band:
  - Investigated by regulators
  - Lower than band: possible anti-competitive practices ?
  - Higher than band: problems with cost structure?

## Advantages of Banded Forbearance

- ▶ Less resource intensive
  - If band is defined well, most players stay within band most of the time
  - Fewer investigations, faster (automatic) approvals
- ▶ Operators have certainty
  - Rules known before hand
  - Able to check themselves if price within band
  - Easier planning. Less unknowns
- ▶ Can be applied to ALL operators, including SMP
  - Essentially de-regulates incumbent/dominant player
  - But provides safeguards

## 2. Another possible regulatory tool using Benchmarking: Broadband QoS

## The traditional way of Regulating Quality of Service (if at all)

- ▶ Issue guidelines (the regulators)
- ▶ Wait for operators to measure and report to regulators
  - In PSTN: “average wait time for a connection”, “% of faults fixed within X hours”
  - In Broadband, historically not much QoS regulation. But lately some “truth in advertising” or minimum upload/download speed specifications
- ▶ Reported to regulator annually, quarterly etc
- ▶ Any penalty for not meeting specified standards well after offense
  - By this time problem may have been rectified
- ▶ No incentive for operator to improve performance immediately
- ▶ Little/no visibility on QoS indicators to consumers – even if regulator releases the data

## Is there another way? Using benchmarks?

- ▶ An application downloaded to computers/servers of a LARGE number of users
- ▶ Sample measures on QoS automatically measured
  - Several times a day
  - For multiple measures (upload speed, download speed, jitter, round-trip-time, etc ....)
  - For different types of access (local, international etc)
  - Data adjusted for various factors
- ▶ Measures uploaded (automatically) to a popular website
- ▶ Various analysis done on it. Various types of benchmarks displayed
  - E.g. all ADSL operators in a country, running 30/60/120 days upload speeds
  - E.g. all BB operators (ADSL, HSDPA, other) in a country.....
  - All of Brazil's providers against ALL Honduras's providers of BB, past 30 days upload



## A different model

- ▶ For the user...
  - Choices based on real performance vs. marketing
  - Opportunity to diagnose problems (just my connection? Or is everyone suffering?)
- ▶ For Operators...
  - “how am I doing in comparison to others”: benchmarking
  - Use this data in advertising “the fastest HSDPA provider for the past 6 months”
  - Offer differentiated products (different prices for different QoS levels)
  - Long term planning: increase capacity in the right place (int’l vs. domestic capacity)
- ▶ For regulator...
  - Real time data for regulation
  - No opportunity for operators “doctor” the data

## **Benchmarking can be a useful tool...not just in the traditional way**

- ▶ Not just analysis, but tool for decision making.
- ▶ Not just after the fact analysis, but forward looking decision making