

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

The Use of Benchmarks in Regulation

What Operators & Regulators Need to Think About

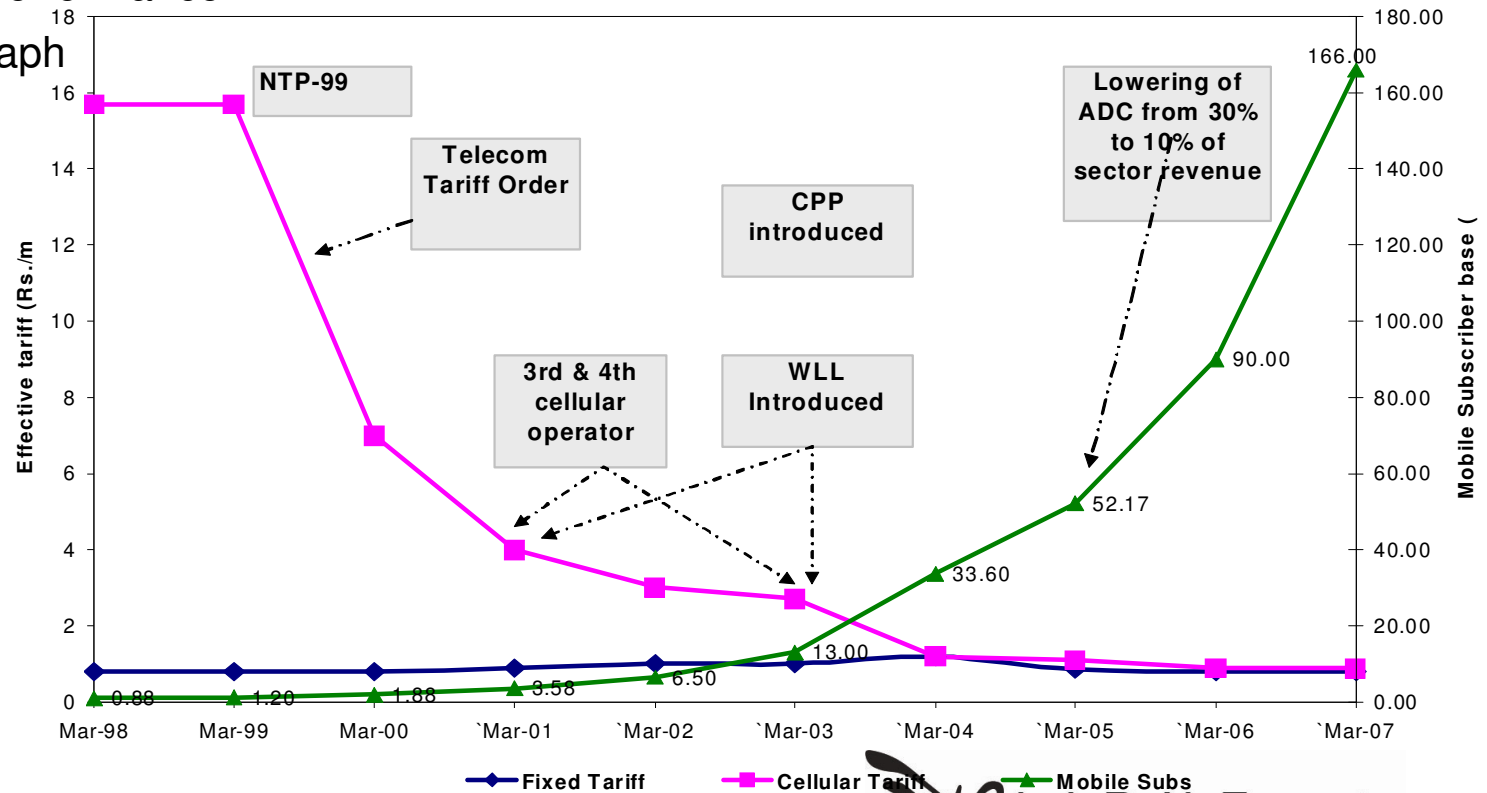
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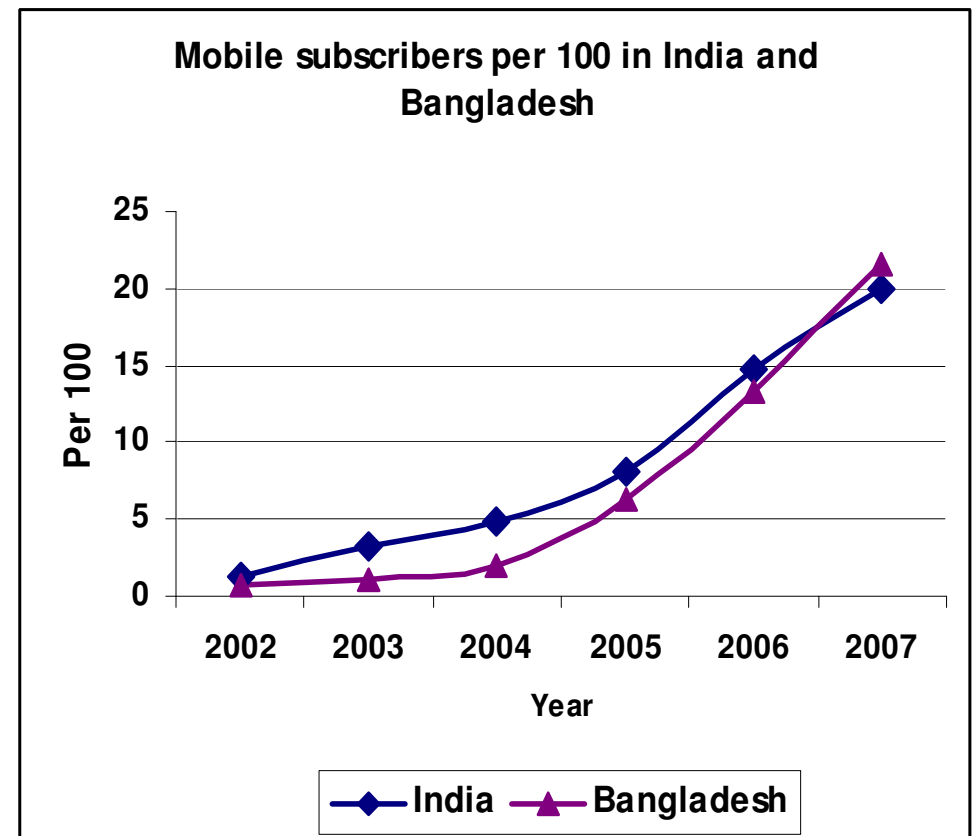
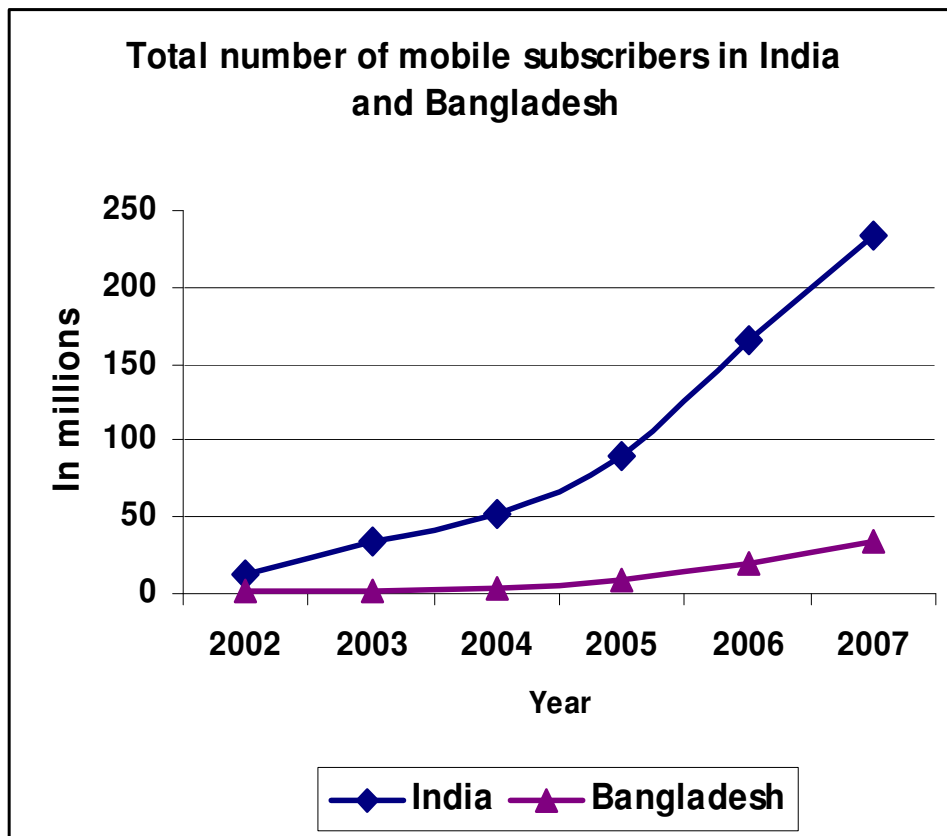
Indicators – useful. A lot available.

- ▶ 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

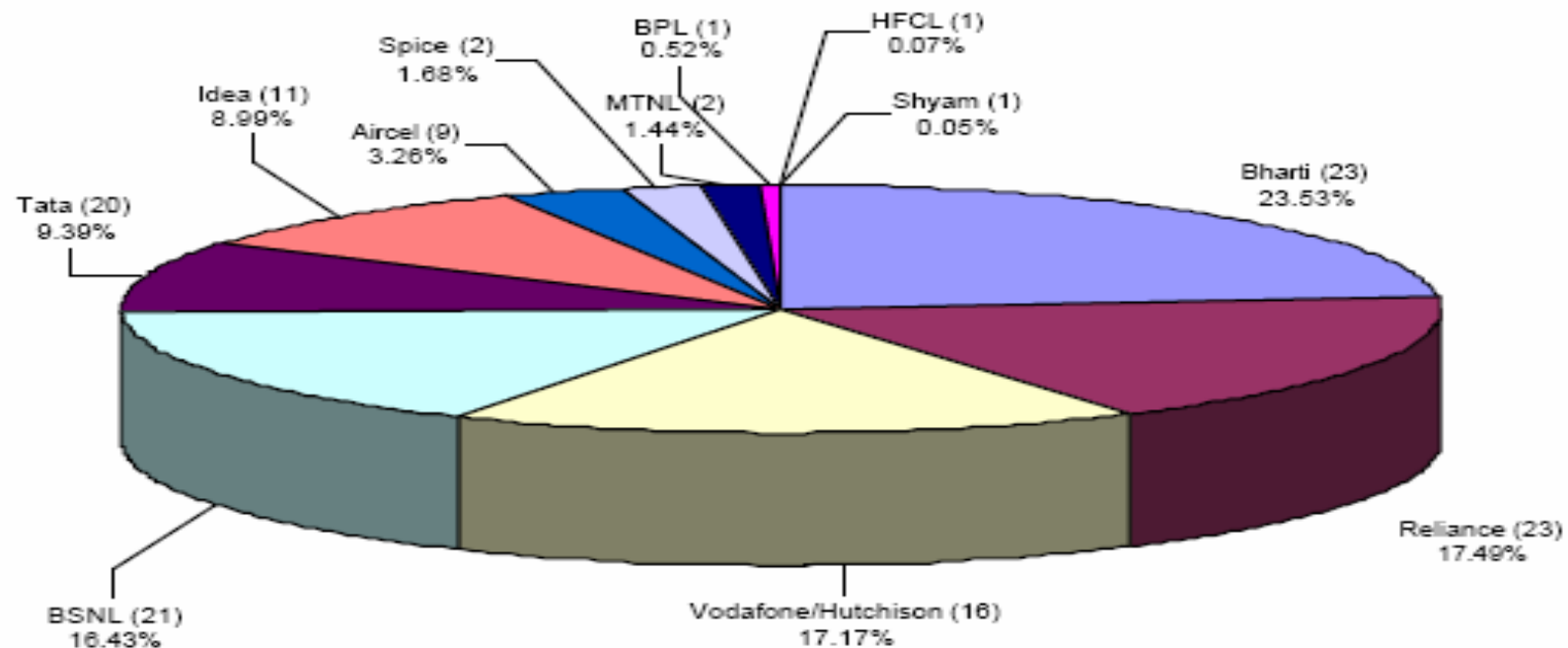
- ▶ E.g. [though not perfectly competitive] India has highest level of competition
 - Each region/circle (not just country) has seen increase competition
 - Widely perceived to have lowest prices in the region

- ▶ Indian Regulator (TRAI) has forborne from tariff regulation (for the most part)

- ▶ Rewarded with highest TRE scores

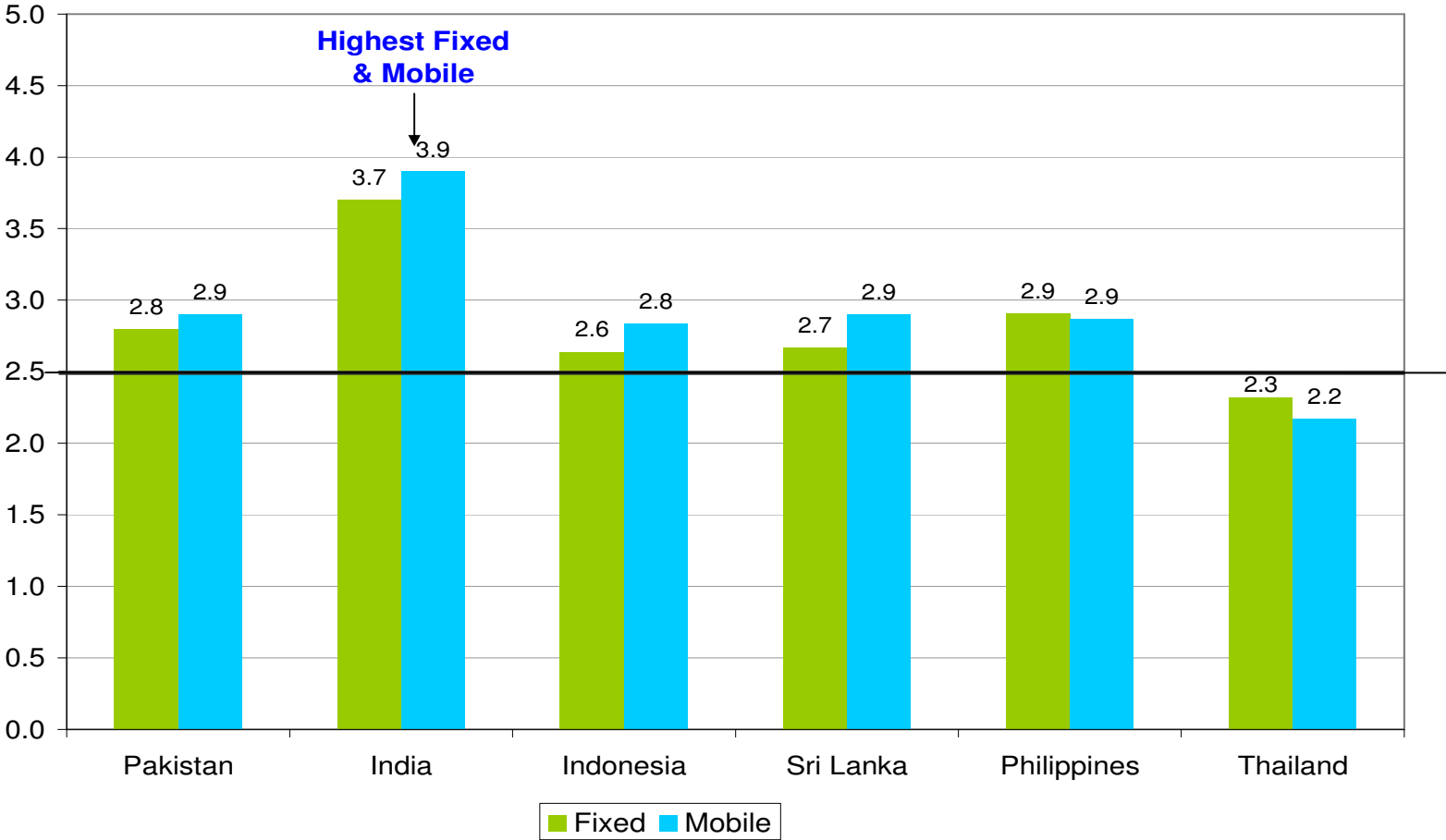
e.g. India has high competition with many players.

Figure 3: Market share of the mobile operators as of March 31, 2007⁴²



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**

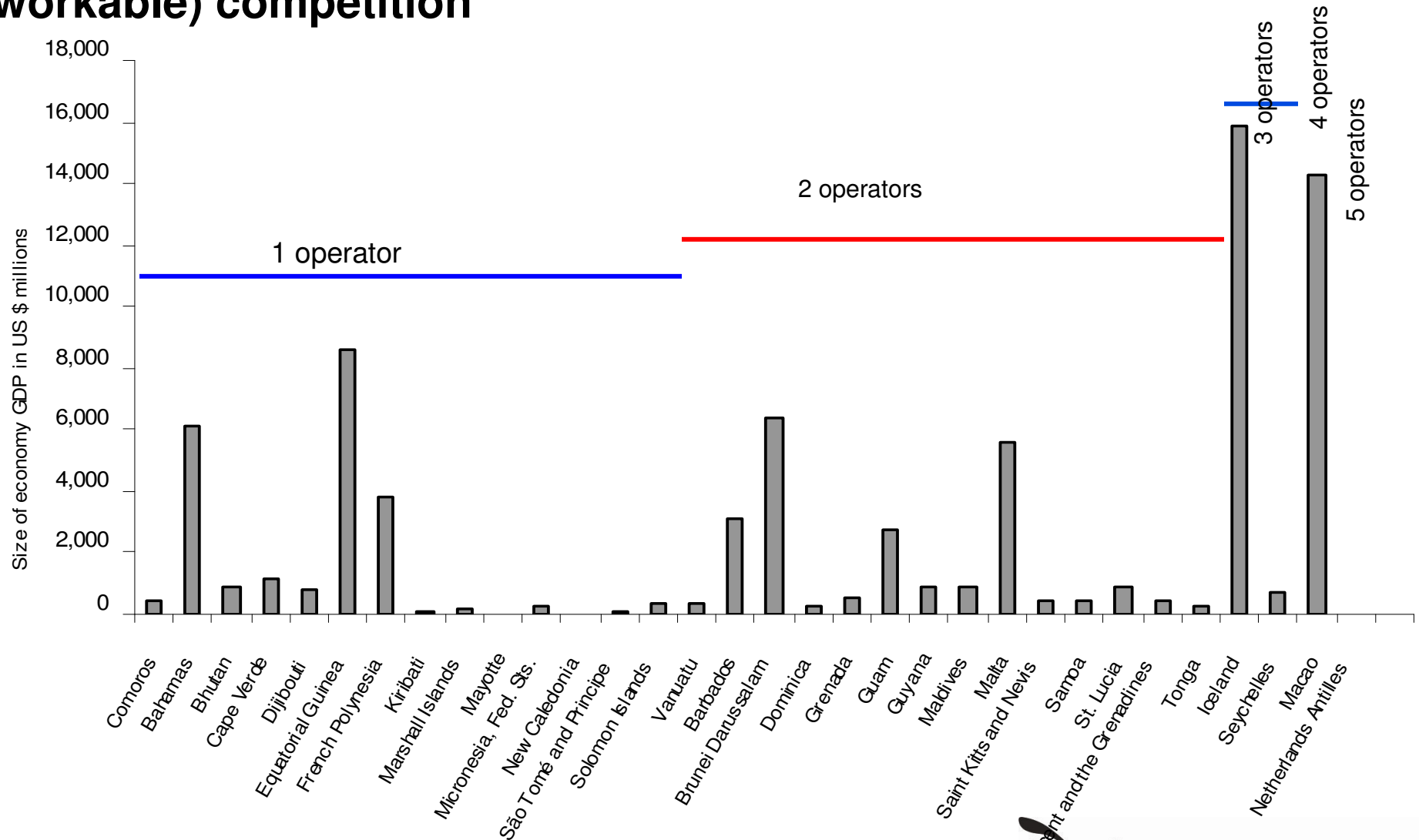
- ▶ Incentive to lower costs
 - Get to keep any extra profit (since price capped, but profits are not)

- ▶ 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

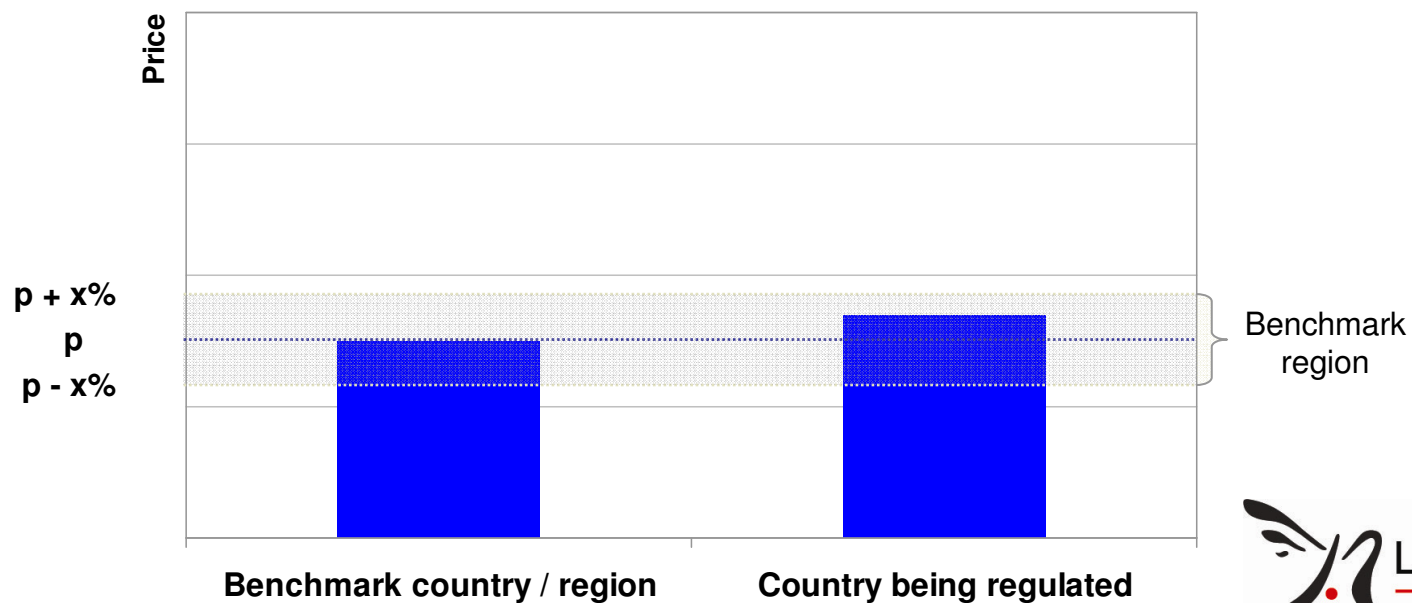
- ▶ 1. Pick the indicator
 - Fixed/Mobile: A “modified” OECD price basket
 - Internet: Monthly price of selected service plan

- ▶ 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