

Assessing the Telecom Regulatory & Policy Environment in Sri Lanka & six other Emerging Asian Economies

For more information, please contact:
Helani Galpaya (helani@lirneasia.net)



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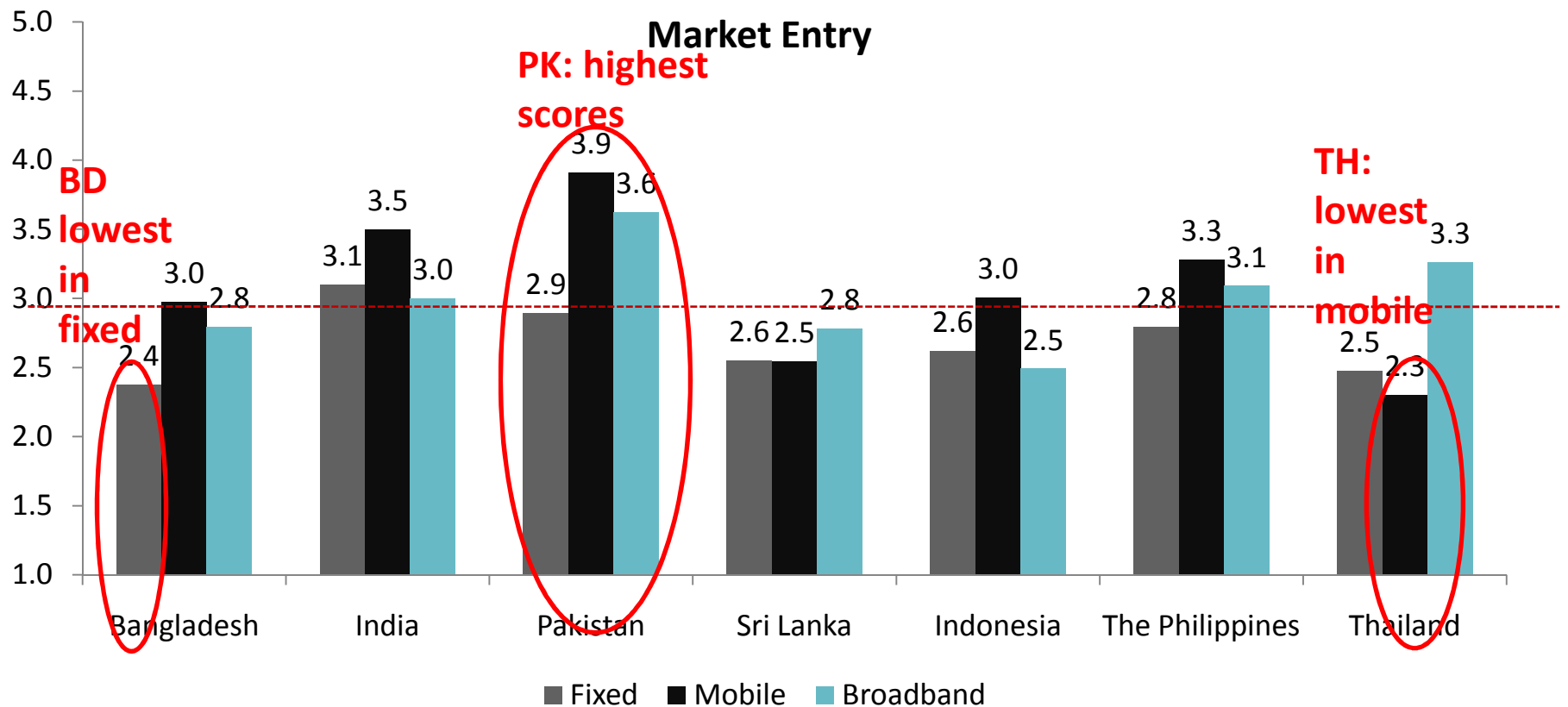


2010-11 inter-country results comparison

7 countries studied in 2011 (to evaluate sector performance in 2010)

- South Asia:
 - Bangladesh (BD)
 - India (IN)
 - Pakistan (PK)
 - Sri Lanka (LK)
- South East Asia
 - Philippines (PH)
 - Thailand (TH)
 - Indonesia (ID)

1. Market Entry: PK leads with clear (yet expensive) licensing conditions. TH low scores in mobile due to confusions in new policy



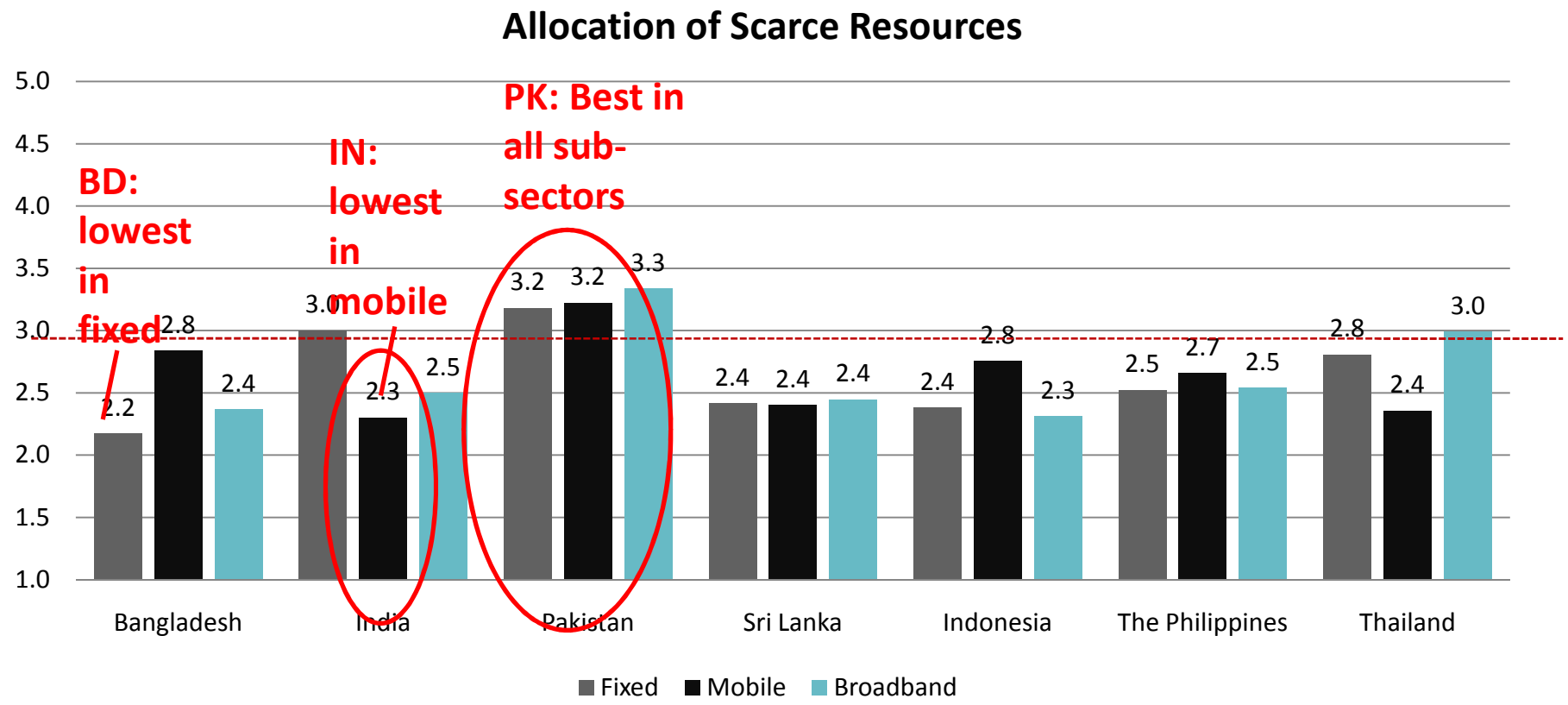
PK (top performer): Expensive but transparent licensing conditions give certainty; no restrictions on foreign ownership

- Clear rules: payment of fee guarantees license renewal
 - Even though very expensive @ USD 291 MM, price at least based on auction value
 - No uncertainty for operator
- Unbundled licensing for fixed
 - Investors can enter, offer services in area of their choice
- MNP since 2007
 - Even smaller new entrants have fighting chance for market share
- No limitations to foreign ownership, M&A activity
 - USD 374 million FDI in 2009-2010; accounts for 17% of Pakistan's FDI
- Anti-competitive behavior checked/regulated (more later)
- Result: 64 SIMs/100 people

TH (lowest mobile sector scores): confusion caused by new legislation

- New Telecom and Broadcasting Act of 2010
 - Merges National Telecommunications Commission and National Broadcasting Commission
 - Article 46 prohibits licensee from renting out all or parts of its spectrum to others to provide mobile services
 - Consequence: TOT delaying signing bids with winners of 3G expansion project
 - E.g., Worried its MVNO operation not in compliance
- Type 2 (network based services for corporate customers) licensees
 - Providing commercial services to the public
 - Abusing license fees and lower USO fee enjoyed by Type 2 licensees

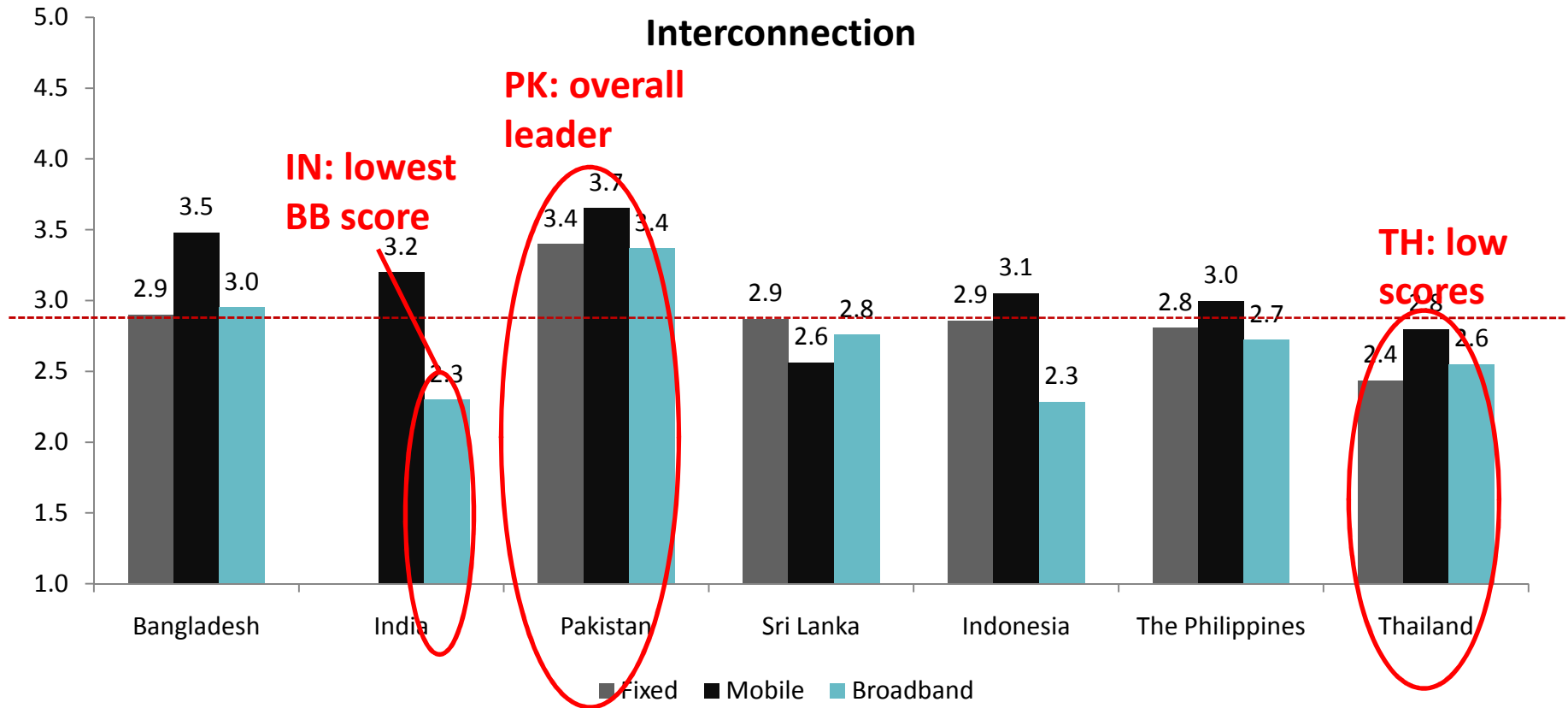
2. Allocation of Scarce Resources: PK fast response gives certainty. IN mobile scores due to 3G and 2G spectrum issues. BD lowest in fixed



IN's lowest score in mobile caused by 2G scandal. LK's low overall scores possibly because of infrastructure bottlenecks

- India:
 - Controversies over 2G renewals
 - No auction
 - Arbitrary pricing: 1651 crores
 - Corruption scandal
 - Delayed 3G spectrum allocation (first ever auction)
 - Spectrum overloading by GSM operators
 - Average amount of frequency per operator low: World average 17.18 MHz; India 6.2MHz
- Sri Lanka
 - International landing station a major bottleneck
 - Incumbent fiber not shared on regulated (cost-based) basis

3. Interconnection: Thai concessionaires subject to distortionary IC rules by state operators



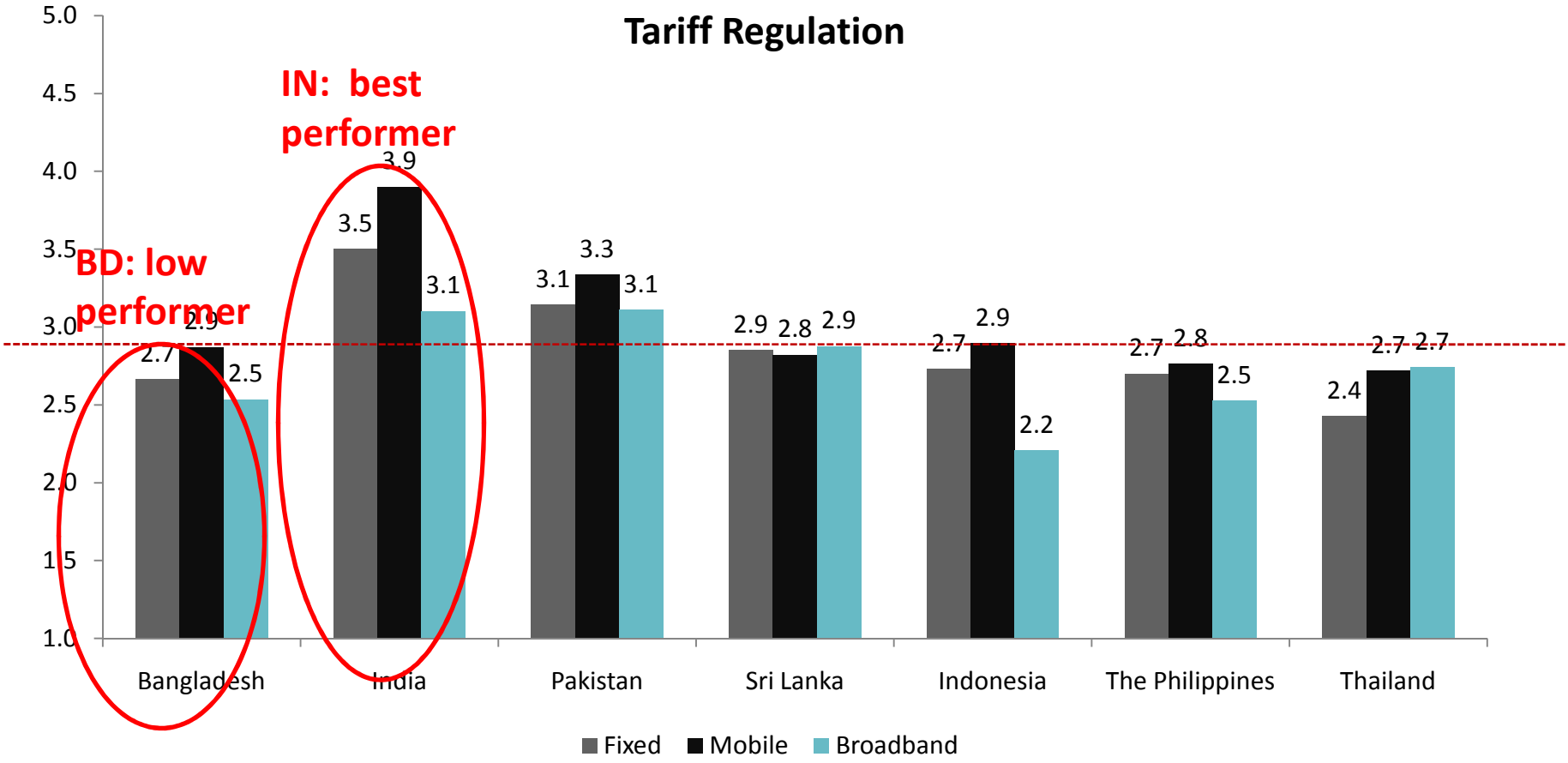
Thailand (poor performer): concession regime stacks the cards against non-state-sector operators

- Only two license holders (TOT & CAT)
 - Private operators mere contractors
 - Private concessionaires legally owned by two state operators
- All interconnection negotiated via TOT/CAT
- E.g. CATs concessionaires (DTAC, True Move) pay TOT...
 - flat fee of THB 200 (USD 6.6)/month per post-paid SIM
 - 18% of revenue per pre-paid SIM
 - But TOT concessionaire AIS does not have to pay TOT
- Concessionaires have refused to pay TOT since 2006
 - Settled in 2007 at rate deemed too high (1 baht per min)
 - Only in 2010 regulated to be at 50 satang for all parties

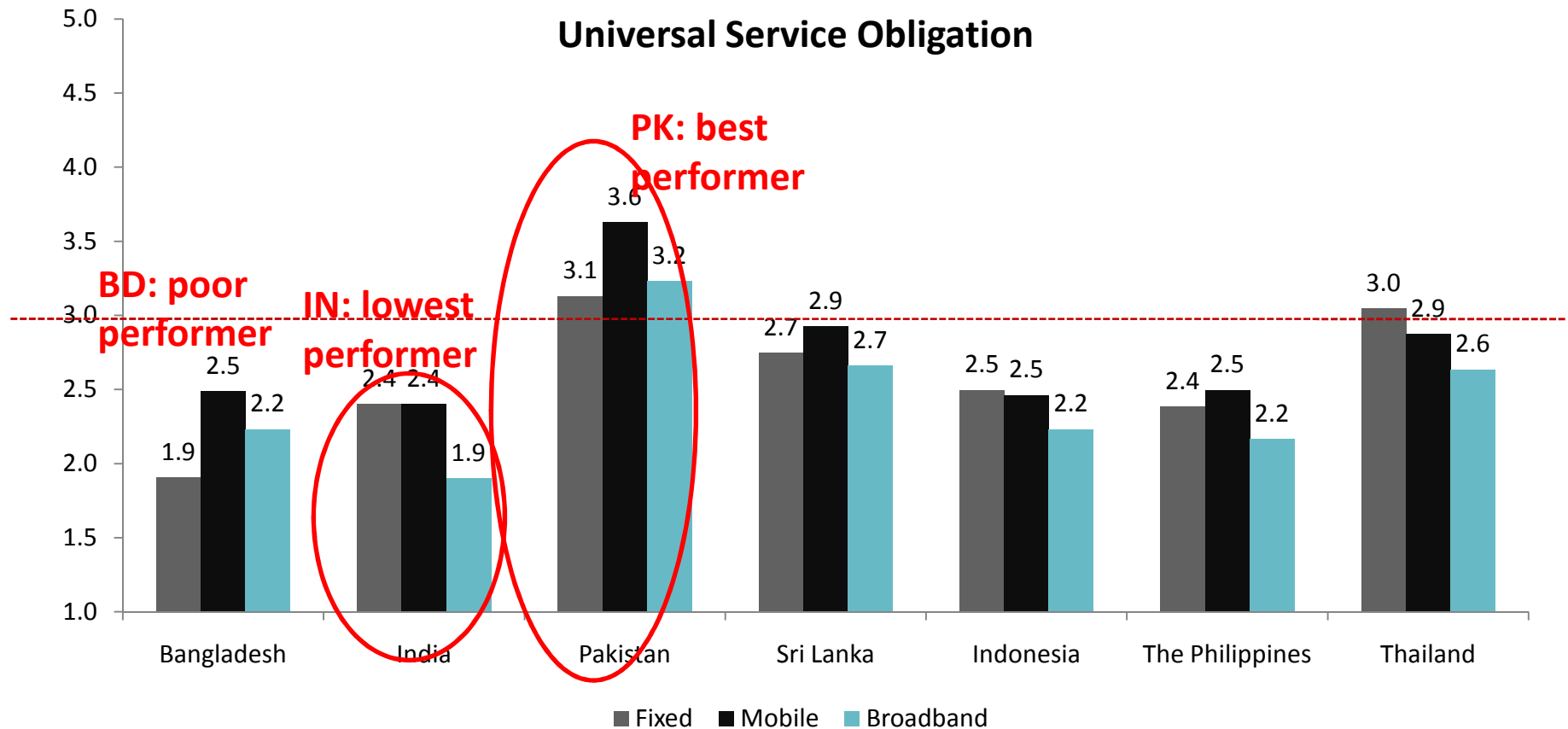
India (lowest BB score): Ineffective use of internet exchanges

- Internet traffic experience bottleneck with local peering
- Despite neutral internet exchange (NIXI) in India
- Only 36 of 167 ISPs connected to NIXI

4. Tariff Regulation: India has some of the lowest tariffs in the world. Regulator does not regulate most prices



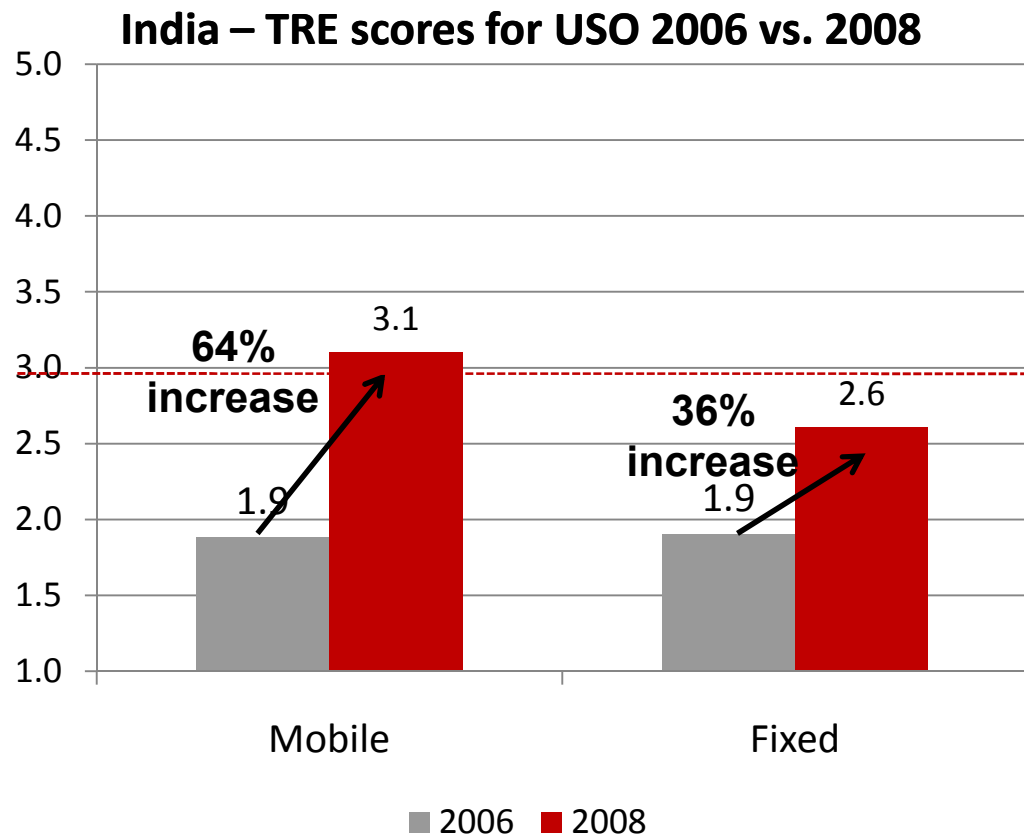
5. Universal Service Obligation: PK collects 1.75% but has already allocated and seeing results. IN still sits on large undisbursed USF (USD 4.2 billion +)



PK (best performer): USF decisions made by private sector and government, effective disbursement

- USF board consists of private sector operators as well as government
 - Practical decisions based on real market needs
- High disbursement rate
 - Compared to India which has nearly USD 5 Billion unspent
- Clear definition of which technologies included, and where funds can go
 - E.g. fiber backbone recently installed, PKR 4.5 billion

IN (lowest performer, with BD close): Still sitting on over USD 4 billion undisbursed USO funds, while collecting 5% from operators

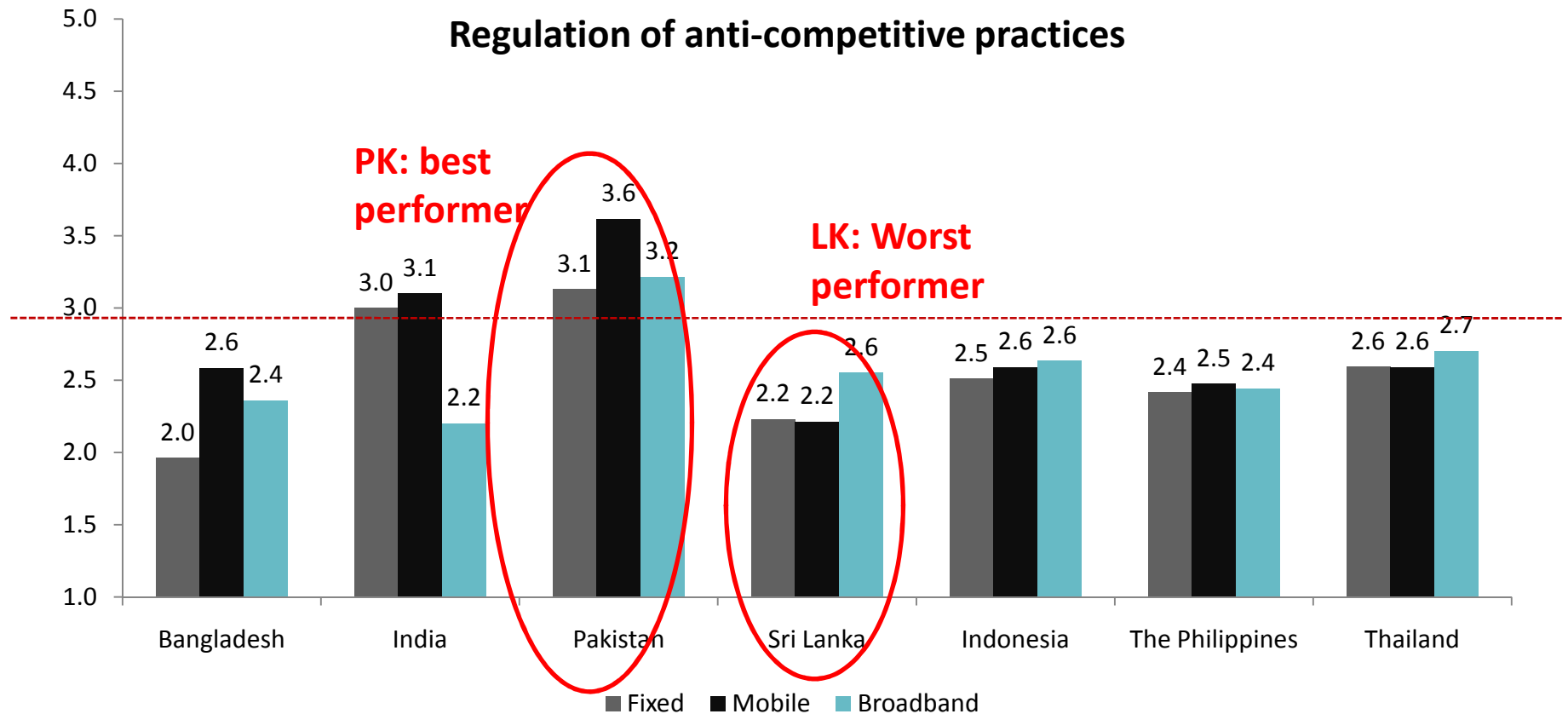


- Still rural-urban access gap
- Rural/poor access gap being filled by operators
 - WITHOUT USO funds
- We know USO scores can improve
 - 2006 vs. 2008 jump, when mobile was allowed to receive USF
- Next step: Get rid of USF to improve scores?
 - Operators requesting lowering 5% → 2.5% (Ministry rejecting)

ID (still low performer): Current USO scheme another step in a line of failed policies

- Initially: Force incumbent to invest 20% of revenues in rural connectivity
 - Order not followed by incumbent
- Then: government funds to set up telephone units in ~ 3000 villages using satellite connectivity
 - Only contribute towards achieving 15% of universal service targets
- ...etc...
- Then: operators changed 0.75% of revenues
 - Collected funds undisbursed (cancelled and halted tenders)
 - Low penetration: 6.5 (fixed) and 35 (mobile) phones per 100 people.
- Now: rate increased from 0.75% → 1.25
- USD 1.254 million collected, mostly undisbursed
 - Despite new ICT Institute established

6. Anti-competitive Practices: PK actively monitoring and taking action to promote competition



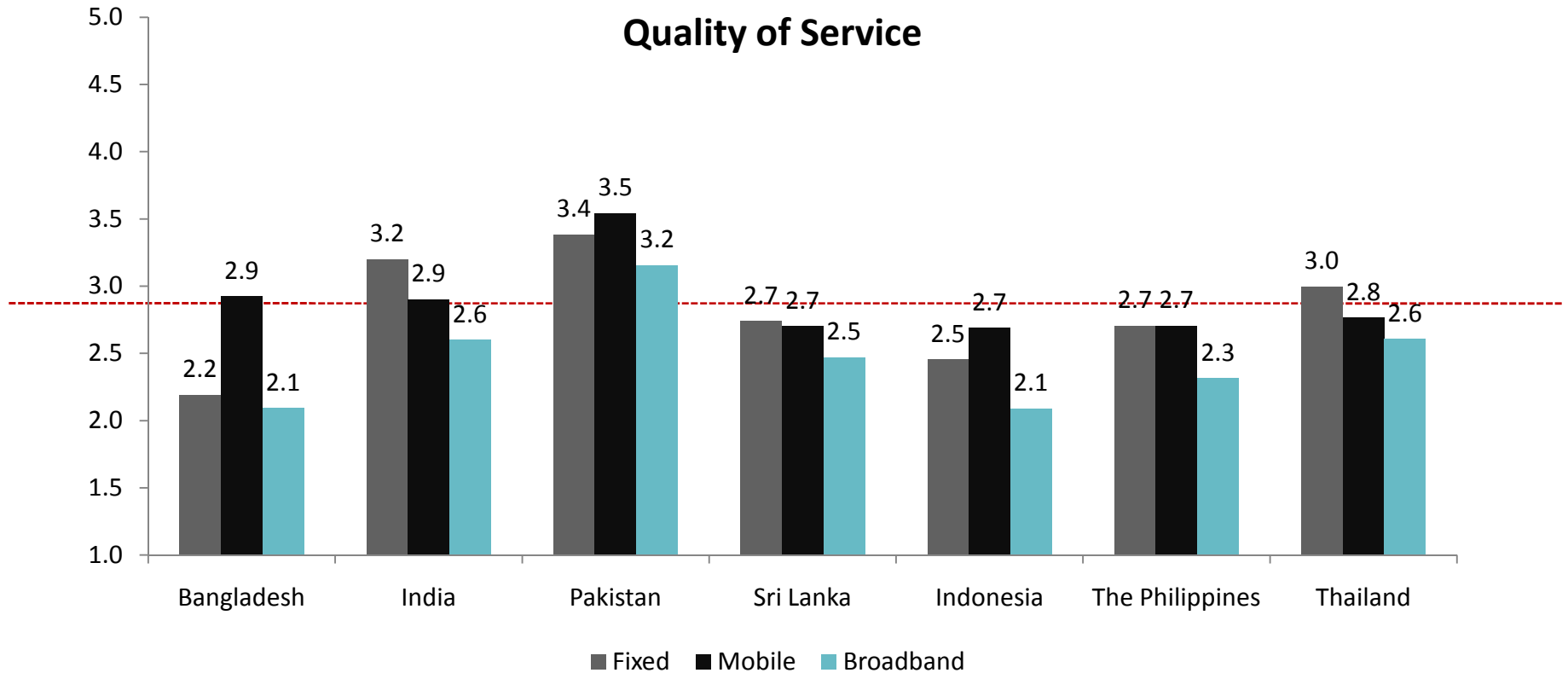
Pakistan (best performer): actively regulates market with the view of promoting competition and leveling the playing field

- Action against China Mobile PK Ltd
 - Advertising “World’s cheapest call”
 - Not mentioning rate is for 30 seconds, not 1 minute
- Approval of cross border mergers
 - Acquisition of Wind Telecom by Vimplecom Ltd
 - No Objection Certification issued
- Action against Wateen Telecom and Defense Housing Authority
 - Against entering into agreement that would have limited competition in relevant market.

Sri Lanka (worst performer): advantages of incumbent not investigated/stopped

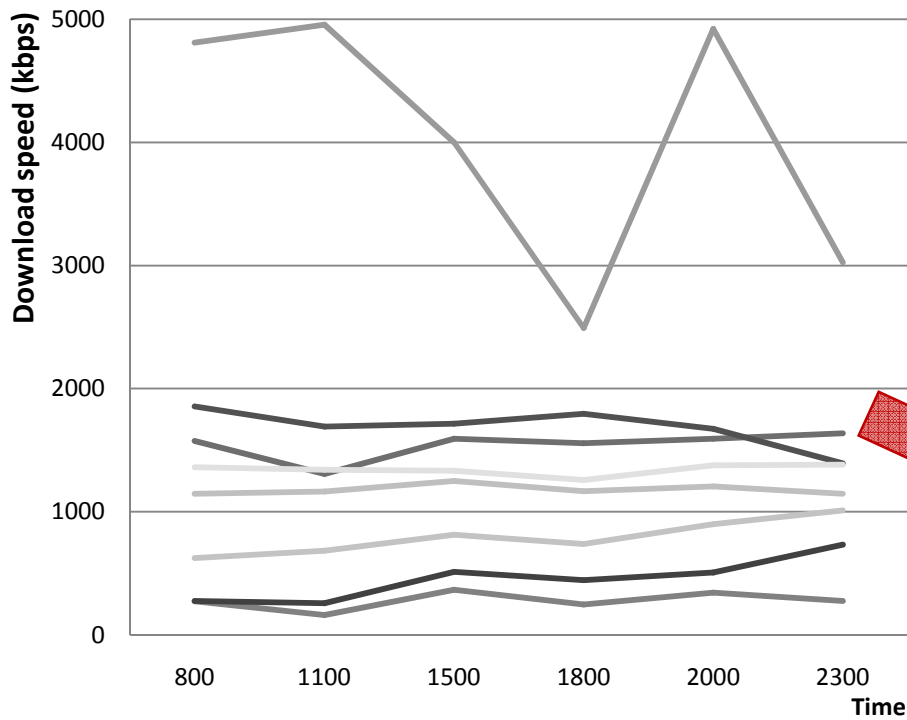
- Cable landing station: tariff and non-tariff barriers
 - Operators forced to use incumbents expensive fiber to connect to landing station
 - “delays” when operators want to increase/purchase more capacity
- Possible cross subsidization between fixed and mobile arms of incumbent
 - Revenues affected by populist package for government servants and retirees “promoted” by government

6. QoS: Budget telecom networks give poor quality in the region and many choke points in in networks

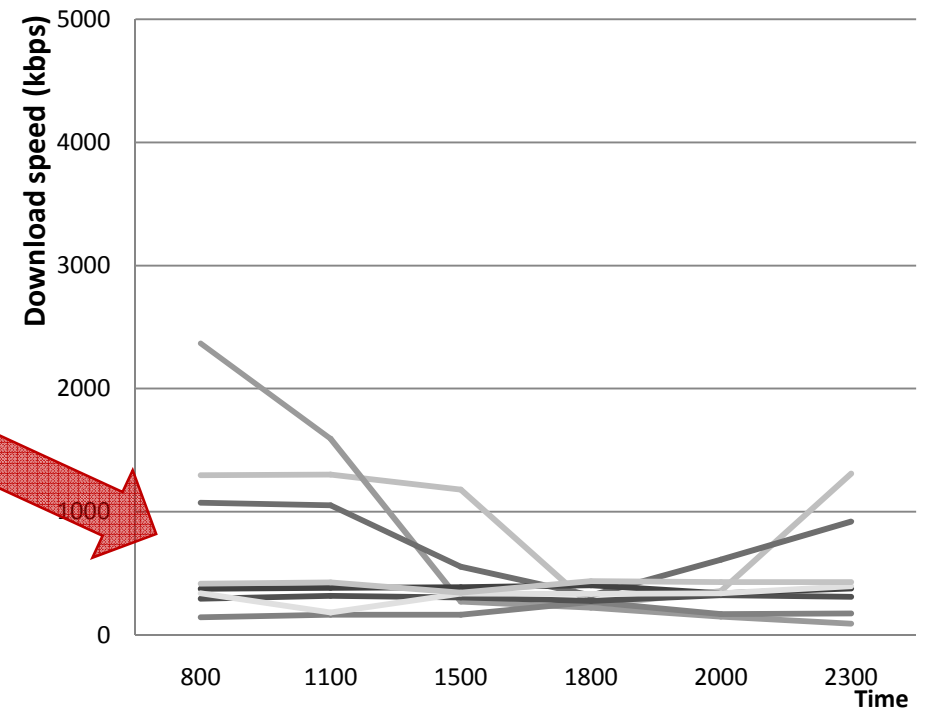


International Bandwidth: bottleneck in BB quality, specially with most accessed content being hosted overseas. Evidence from IN....

India - Download from ISP server



India - Download from International server

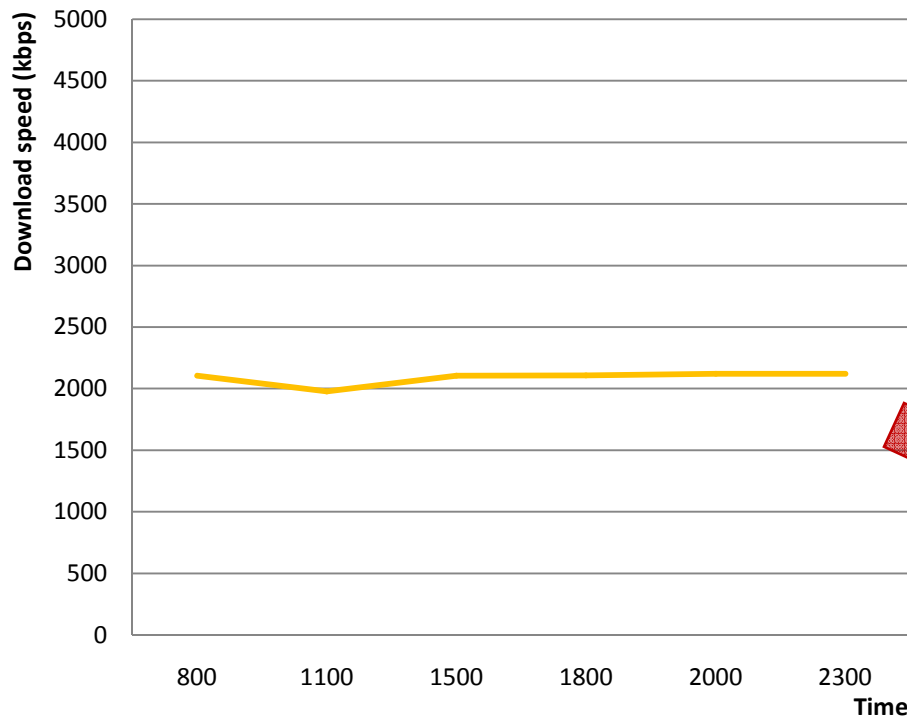


- Airtel (512 kbps) Bangalore, IN
- Airtel (512 kbps) Chennai, IN
- Airtel (2 Mbps) Mumbai, IN
- Airtel (512 kbps) New Delhi, IN
- BSNL (512 kbps) Bangalore, IN
- BSNL (256 kbps) Chennai, IN
- MTNL (512 kbps) Mumbai, IN
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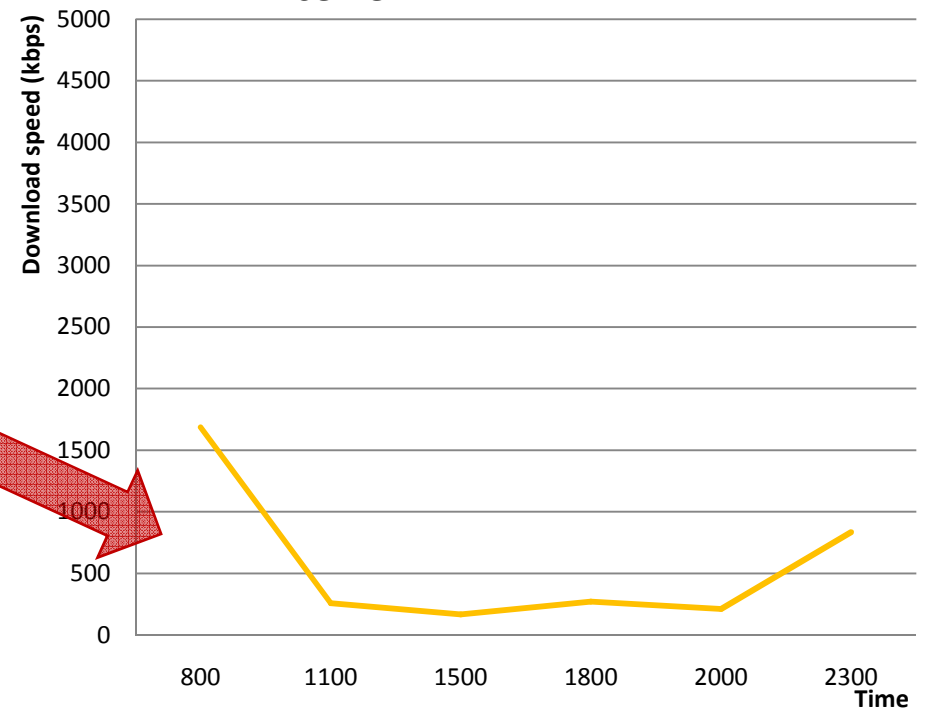
...and Sri Lanka

Sri Lanka - Download from ISP server



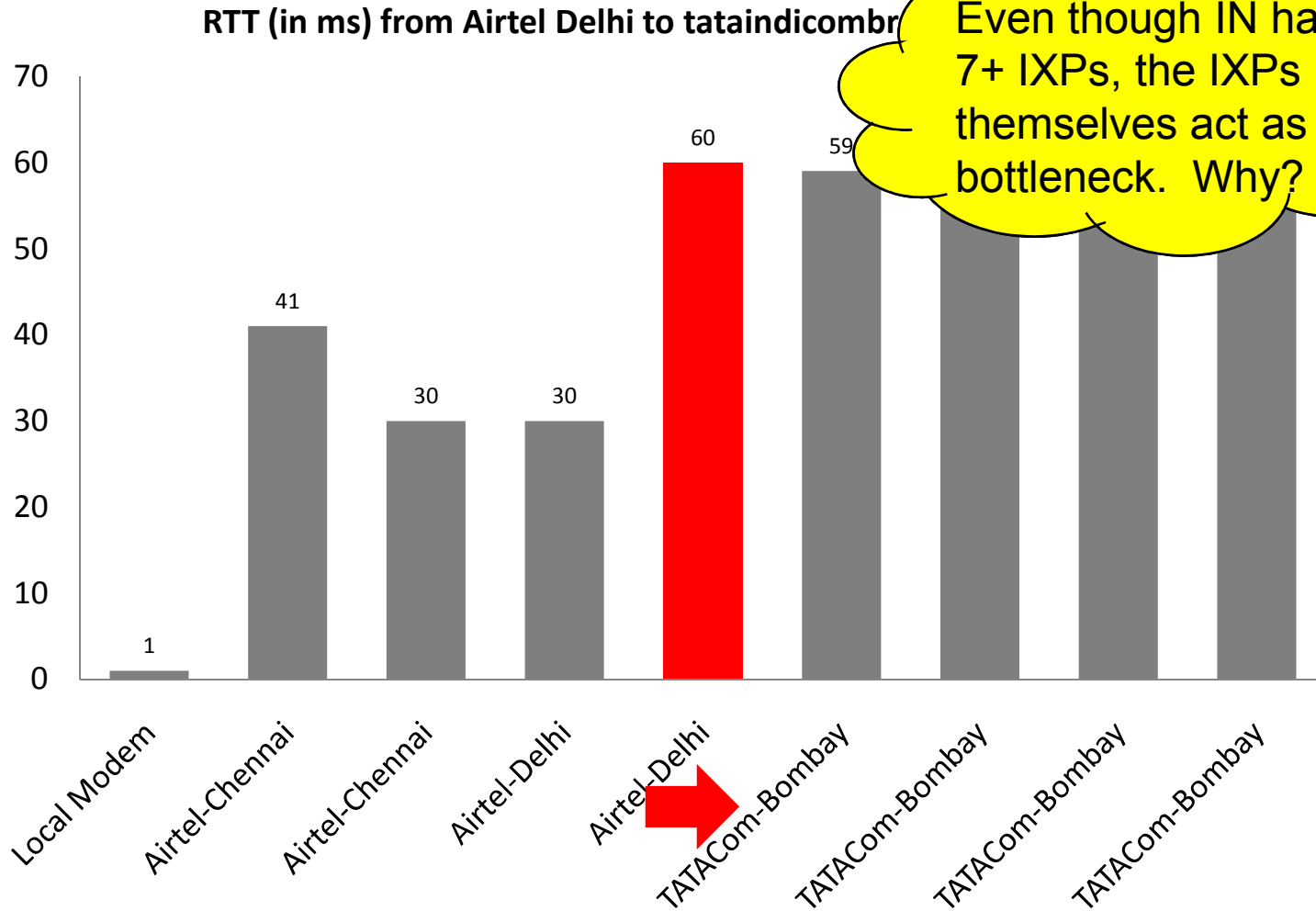
— SLT (2 Mbps) Colombo, LK

Sri Lanka - Download from International server



— SLT (2 Mbps) Colombo, LK

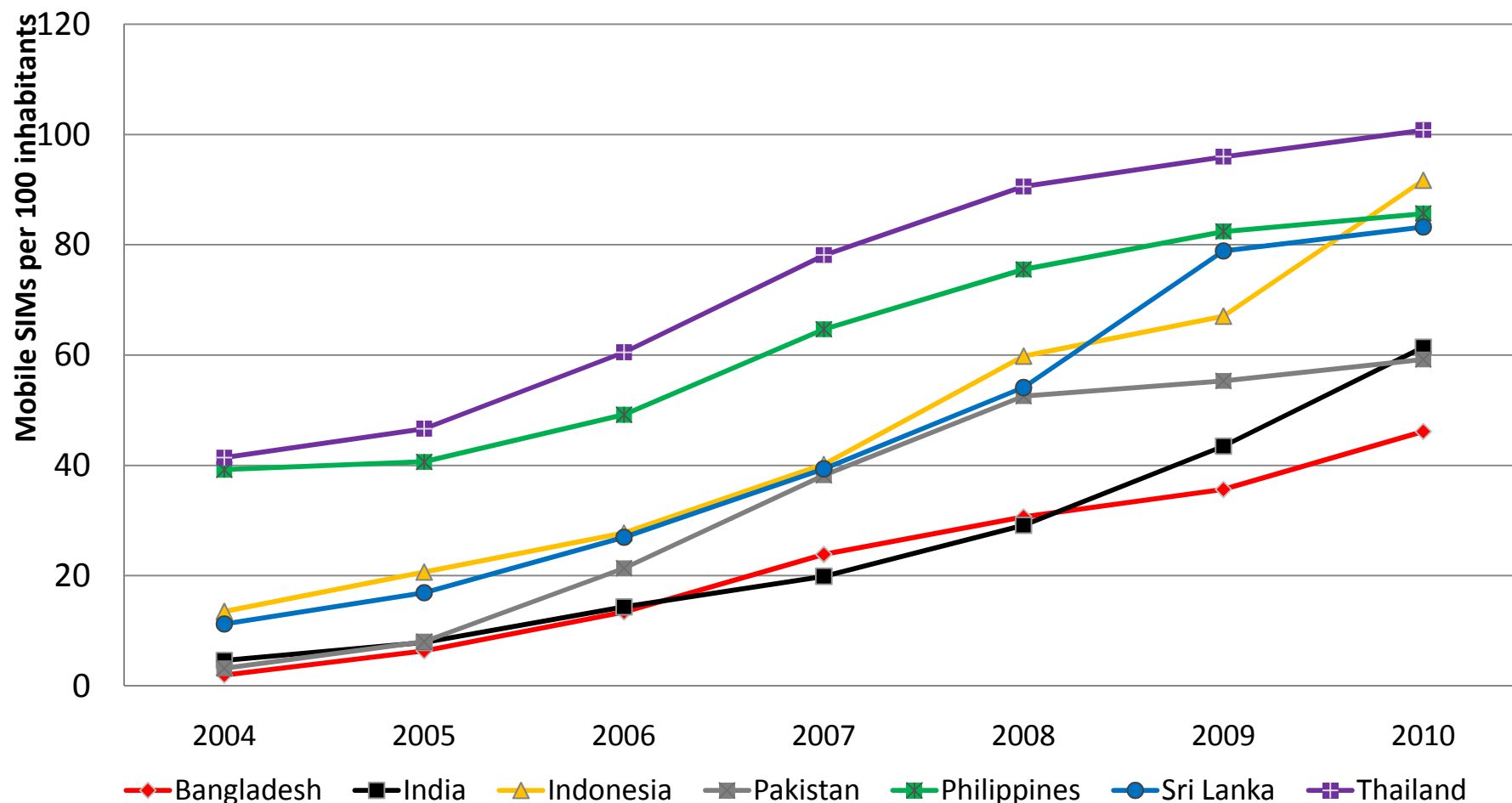
Local peering is also a problem. Network exchange points a bottleneck. E.g. India



Even though IN has 7+ IXPs, the IXPs themselves act as bottleneck. Why?

Regulation & policy not sole determinants of performance

Mobile SIMs per 100 inhabitants in 7 countries studied



A total of 349 responses were received in the 2011 survey

Country	Cat 1	Cat 2	Cat 3	Total
Bangladesh	17	7	15	39
Pakistan	15	14	23	52
India	18	12	18	48
Sri Lanka	14	21	19	54
The Philippines	19	10	30	59
Thailand	16	17	17	50
Indonesia	15	15	17	47

How to assess the regulatory & policy environment

(methodology)

Factors impacting performance of the ICT sector in a country

- Global factors
 - E.g. Global recession
- Country-level macro factors
 - political (in) stability, exchange rates etc.
- Market factors
 - actions of competitors, availability of substitutable products, cost of capital to firm
- Regulatory factors: **risks emanating from government, including but not limited to actions (or inactions) of the regulator**
- All these impact investment
 - Investment → sector performance
- Need to understand, quantify and lower

Measuring/Quantifying Risks imposed by each of these factors

- Macro Level/Country Risks
 - Not easily quantified
 - But comparative measures possible – e.g. Investment climate survey (WEF), Corruption Index (WB), Doing Business Survey etc.
- Market Risk
 - Easier to quantify (credit ratings, cost of capital calculations)
- Regulatory Risk
 - Not easily quantified
 - But comparative measures necessary : one investor in multiple countries becoming common
 - Subjective, but intuitively “known” to stakeholders

TRE (Telecom Regulatory Environment) survey: a tool to measure/compare perceived risk due to policy maker/regulator's actions

- Short questionnaire, takes 5-7 minutes to complete
 - Makes minimal demands on senior level respondents
 - Do not want it filled by assistant
- Asks respondents to evaluate TRE on 7 dimensions
 - Market Entry
 - Allocation of Scarce Resources
 - Interconnection,
 - Regulation of Anti-Competitive Practices
 - Universal Service Obligations
 - Tariff Regulation ——— central to regulator's activities
 - Quality of Service ——— important as markets mature

Directly from
GATS
regulatory
reference
paper

- Each dimension evaluated on Likert Scale of 1 to 5
 - Minimum 1 = highly ineffective
 - Maximum 5 = highly effective
- Average/acceptable performance = score of 3 (mid-point between 1 and 5)
- 3 (sub) sectors evaluated separately
 - Fixed
 - Mobile
 - Broadband
- List of “significant regulatory and policy events” in relevant period sent to each respondent, to refresh memory

3 Respondent categories. Weights to ensure even contribution to final score

- Respondents fall into 3 categories:
 - Category 1: those directly involved in the sector such as operators, equipment vendors
 - Category 2: those indirectly impacted by the sector or those studying/observing the sector with broader interest such as consultants and lawyers
 - Category 3: those who represent the broader public interest such as media personnel, other government officials, retired regulators, civil society organizations
- Each category equally important.
 - But hard to predict number of completed survey responses
 - Use weights to equalize each category's contribution to final score

Our mission

To improve the lives of the people of the emerging Asia-Pacific by facilitating their use of ICTs and related infrastructures; by catalyzing the reform of laws, policies and regulations to enable those uses through the conduct of policy-relevant research, training and advocacy with emphasis on building in-situ expertise