Information Society Policies : What worked and did not work

Examples from Emerging Asia

Helani Galpaya

EuroCPR

Brussels

March 30 2010

LIRNEasia
www.lirneasia.net

Agenda

- Telecom networks: the foundation of an information society
  - Policies that correct themselves, over time
  - Markets that innovate (even under less than ideal conditions)
- Applications, services and industry development towards an information society
  - Minor government action + unintended consequences

The foundation: telecom networks

Where's south Asia in best practice: liberalization, privatization, independent regulator…?

- Liberalization
  - all countries have introduced
- Privatization
  - Some haven't (IN, BD)
  - Some have partially privatized (LK, MV)
- Established Independent regulator
  - In theory all have
  - In reality: varying levels of regulatory capture by incumbent and government

Attempts at inclusiveness: policies that need to change, now (e.g. Indian USO policy)....

- Indian USO policy (then)
  - Charge 5% of gross revenues from operators
  - Only fixed providers eligible to receive subsidies for rollout
- But rural fixed penetration negligible & declining
  - Mobile penetration was growing rurally (without any USO help)
- By 2006, India has USD 4 billion in an undisbursed USF
- USO Policy changed in March 2007
  - Mobiles made eligible to receive USO funds
- Only 33% funds had been disbursed by Mar 2009
- Even when market signals subsidies may be irrelevant
  - Rural infrastructure (least cost subsidy) auctions: $ 0 bids in 38 of 81 regions; negative bids in 15 regions

Similar examples elsewhere

- Philippines
  - 1 fixed line for every 10 mobiles: condition of license
  - Unused "installed" vs. "subscribed" fixed lines
- Nepal
  - Good least-cost subsidy auctions for backbone
  - But toothless regulator → winner unable to interconnect
  - Increase in price
- India
  - Large amounts of un-lit fiber owned by incumbent
  - But USO not invested here/no forced sharing

…other policies have corrected themselves over time…e.g. Access Deficit Charges in India (2003 – 2008)

- Charge added onto termination rates
  - 30% of sector revenues went to ADC (highest among many countries)
  - Based on historical cost of incumbent, not LRIC
  - Most money went to incumbent (BSNL); but x-F volume decreasing
  - Incentives for bypass, non-reporting
- Revised by regulator in May 2003
  - Adjusted for various concessions granted by government to BSNL (e.g. reimbursement of license fee)
  - Result: ADC reduced to 10-12% of sector revenues
- Revised in 2005
  - Int'l incoming charge reduced from INR 5 to 1
- Eliminated in April-Sep 2008
  - Gain to Private Operators ~175 million USD
  - Gain to incumbent's mobile arm ~241 million USD

Pre-2003: ADC = 30% of sec. rev

2003: ADC = 10-12% of sec.rev

2008 0%
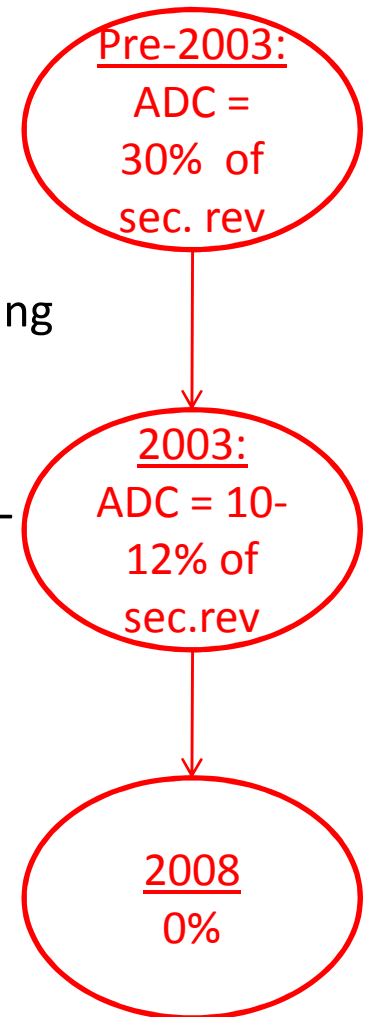
..and other policies that get progressive over time (reacting to market demand & evidence)

- Passive infrastructure sharing
  - Site, masts, generators etc.
  - Mandated conditions (all operators must announce sites; should be non-discriminatory & transparent terms)
  - Estimated ~ 30% cost savings for operators
- Active infrastructure sharing
  - Certain components can be shared (routers, amplifiers)
  - Requests for all active infrastructure sharing
- Spectrum (e.g. 3G) allocation
  - India: finally agreeing to auctioning
- Etc….

# Regulation may introduce distortions. Regulators may not be independent. But market entry is encouraged.

Pakistan Foreign Direct Investment

Year	Total FDI	FDI in Telecom Sector (USD MM	Telecom Sector's FDI as % of Total FDI
2001-02	484.7	6.1	1.26
2002-03	798	13.5	1.69
2003-04	979.9	207.1	21.13
2004-05	1524	494.4	32.44
2005-06	3521	1905.1	54.11
2006-07	5124.9	1824.3	35.6
2007-08	5152.8	1438.6	27.92

-**China Mobile** acquired 100% of Paktel
- **Orascom** increased stake in Mobilink to 100%
-**SingTel** purchased 30% Warid Telecom
- **OmanTel** purchased 60% of World Call

- Barriers to foreign investment, firm ownership removed → high investment
- Majority of investment into sector is foreign
- Encouraged (often under investment promotion policies)
- Even if entry process less than transparent

High Growth in mobile (50 – 120% CAGR). Fixed stagnant or declining
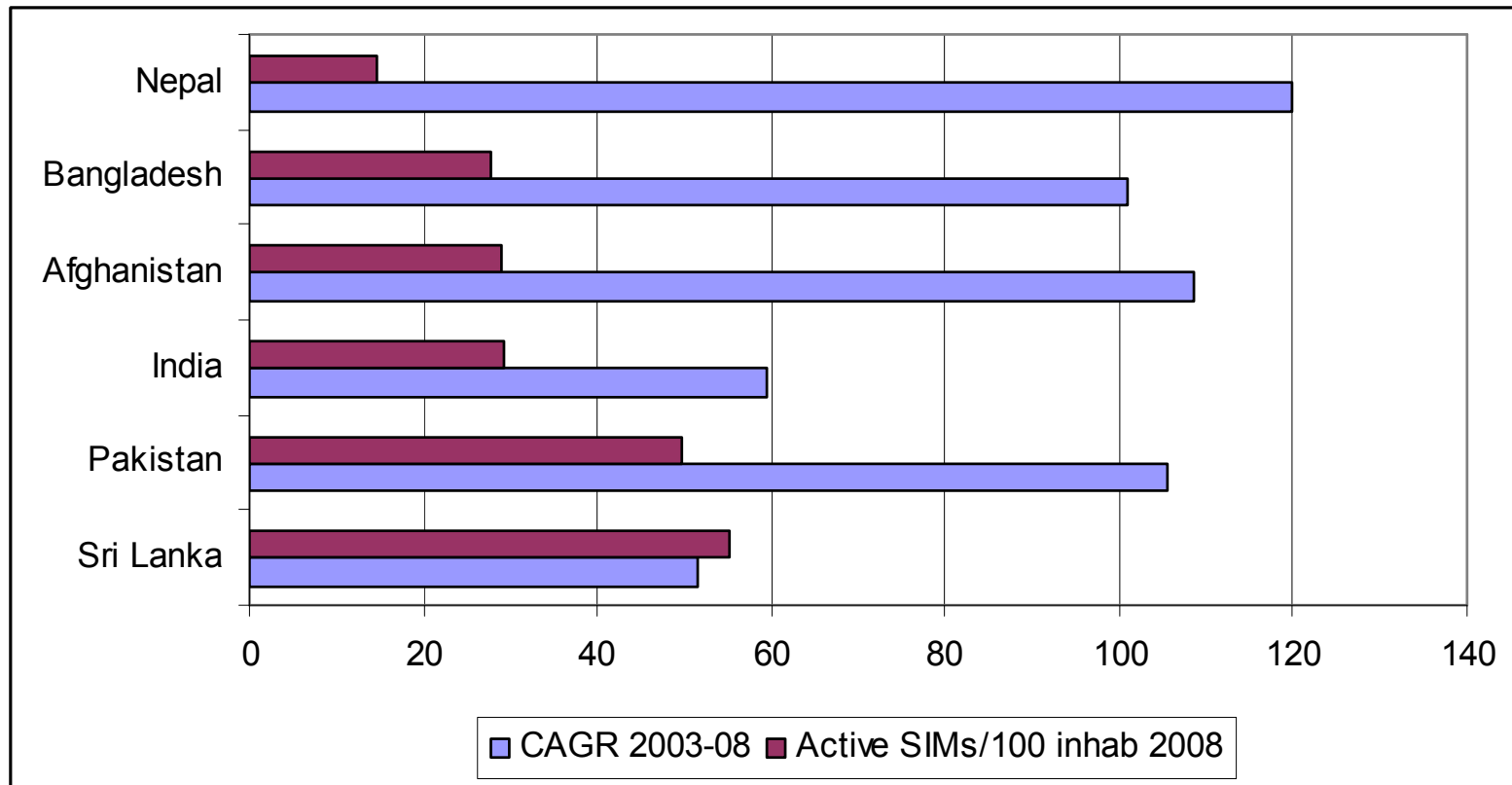
Source: ITU, data as of end 2008

High access to voice – even among the poor

Used a phone in the last 3 months

	Bangladesh	Pakistan	India	Sri Lanka	Philippines	Thailand
% of BOP (outer sample)	95%	96%	86%	88%	79%	77 %

Used a phone in the past week

	Bangladesh	Pakistan	India	Sri Lanka	Philippines	Thailand
% of BOP (outer sample)	82%	66%	65%	77%	38%	72%

- Sample of over 11,000 BOP (SEC D and E) citizens. Indian sample size over 3,500.

LIRNEasia
www.lirneasia.net

Even to the BOP Rural Areas in India (country with largest poor population)
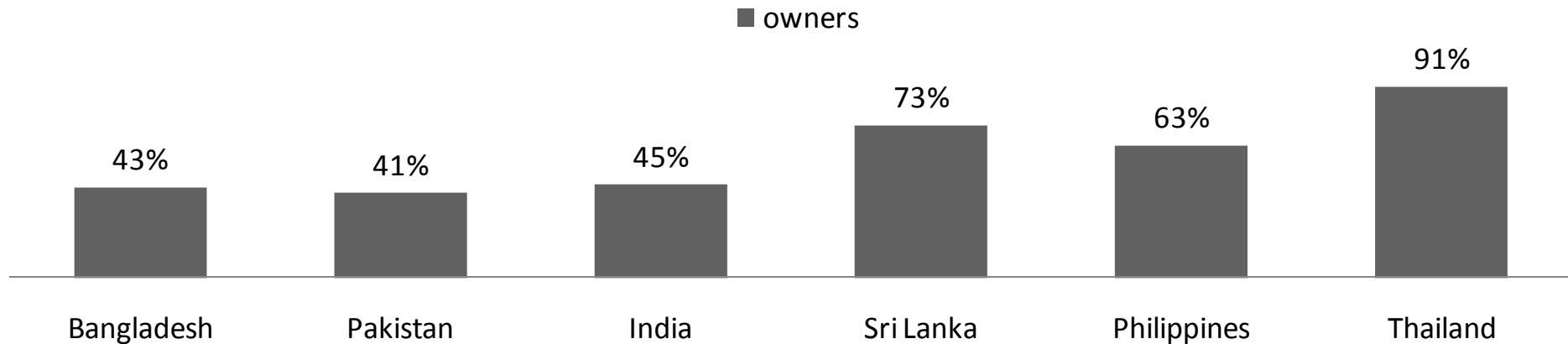
Last time respondent made/received a call (% of BOP teleusers)

Legend:
- 2-3 months ago
- 1-2 months ago
- About a month ago
- 2-3 weeks ago
- 1-2 weeks ago
- In the last one week
- Yesterday / Today

X-axis: Urban, Rural
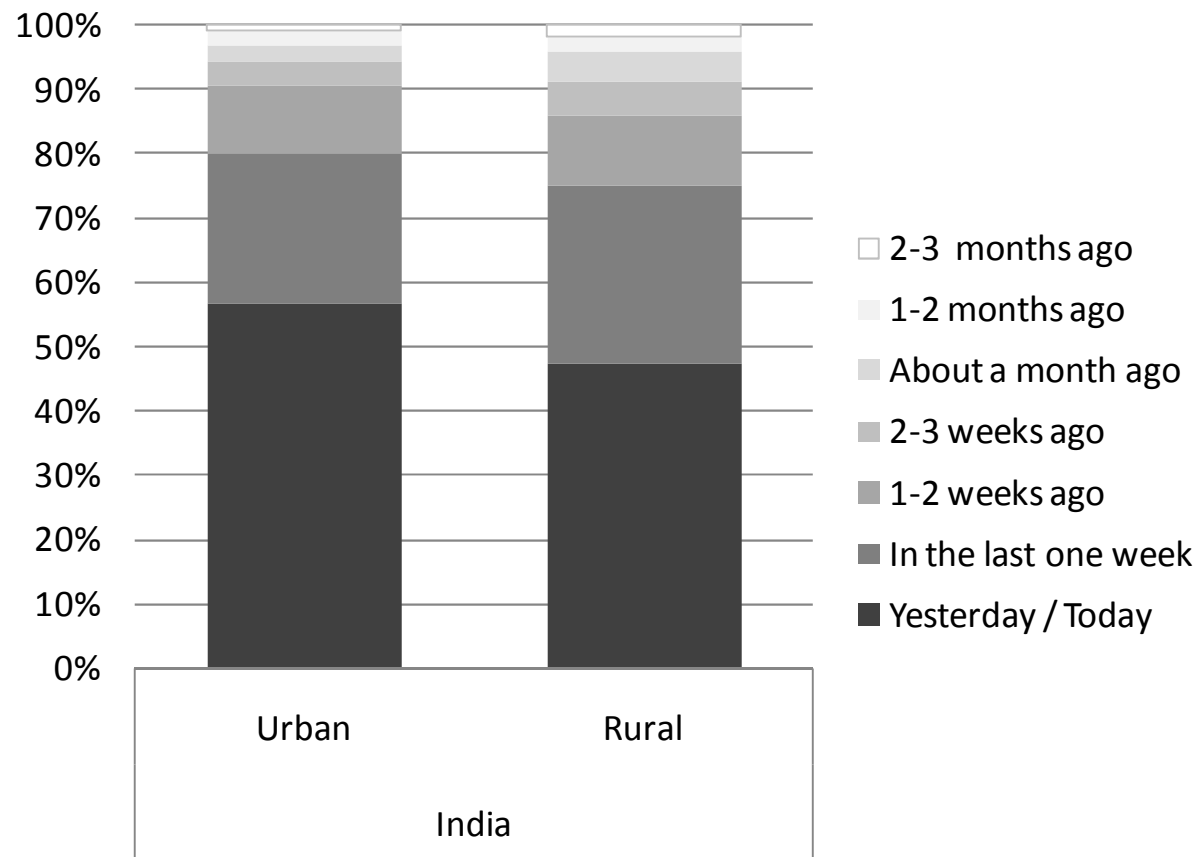
India

Ownership is less impressive, but high…

Total phone ownership (% of BOP teleusers)

■ owners

| Bangladesh | Pakistan | India | Sri Lanka | Philippines | Thailand |

43% 41% 45% 73% 63% 91%

- Most choose to own a phone (rather than use others' phones) for convenience; cost is secondary

...and growing. Highest growth in India

Total BOP phone ownership: 2006 vs 2008 (% of BOP teleusers)

	Bangladesh	Pakistan		India		Sri Lanka		Philippines		Thailand	
Year	2008	2006	2008	2006	2008	2006	2008	2006	2008	2006	2008
%	43%	36%	41%	19%	45%	41%	73%	54%	63%	77%	91%

131% increase (India 2006 → 2008)
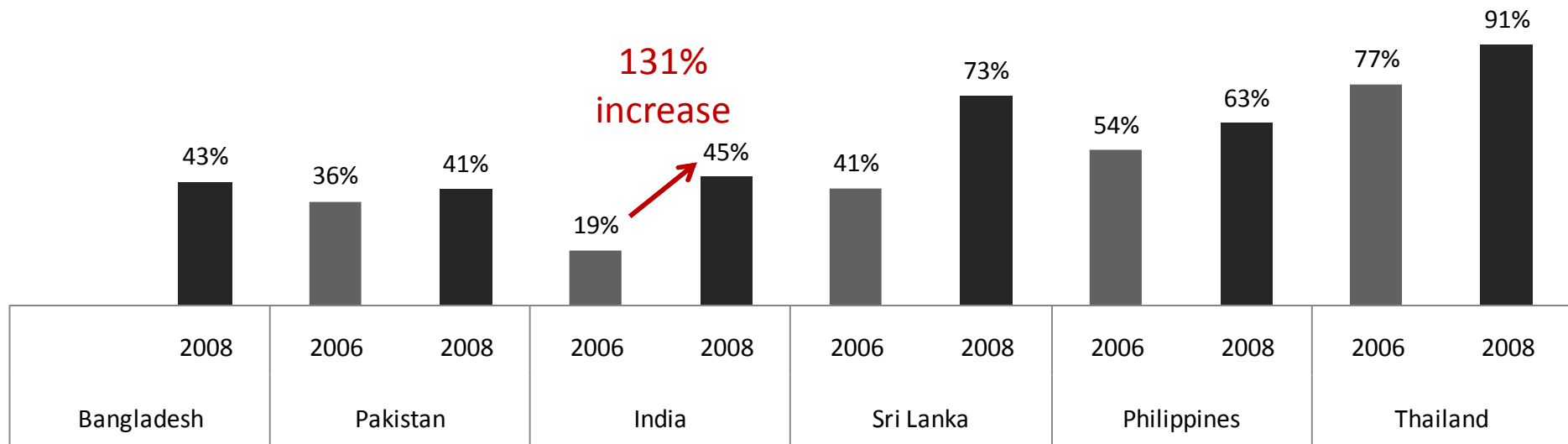
Some of the lowest ownership costs in the world

Monthly TCO by country

Four S Asian countries in less-than-USD 5 TCO club among
77 emerging economies (average TCO = USD10.88)

Average 10.88 US dollars

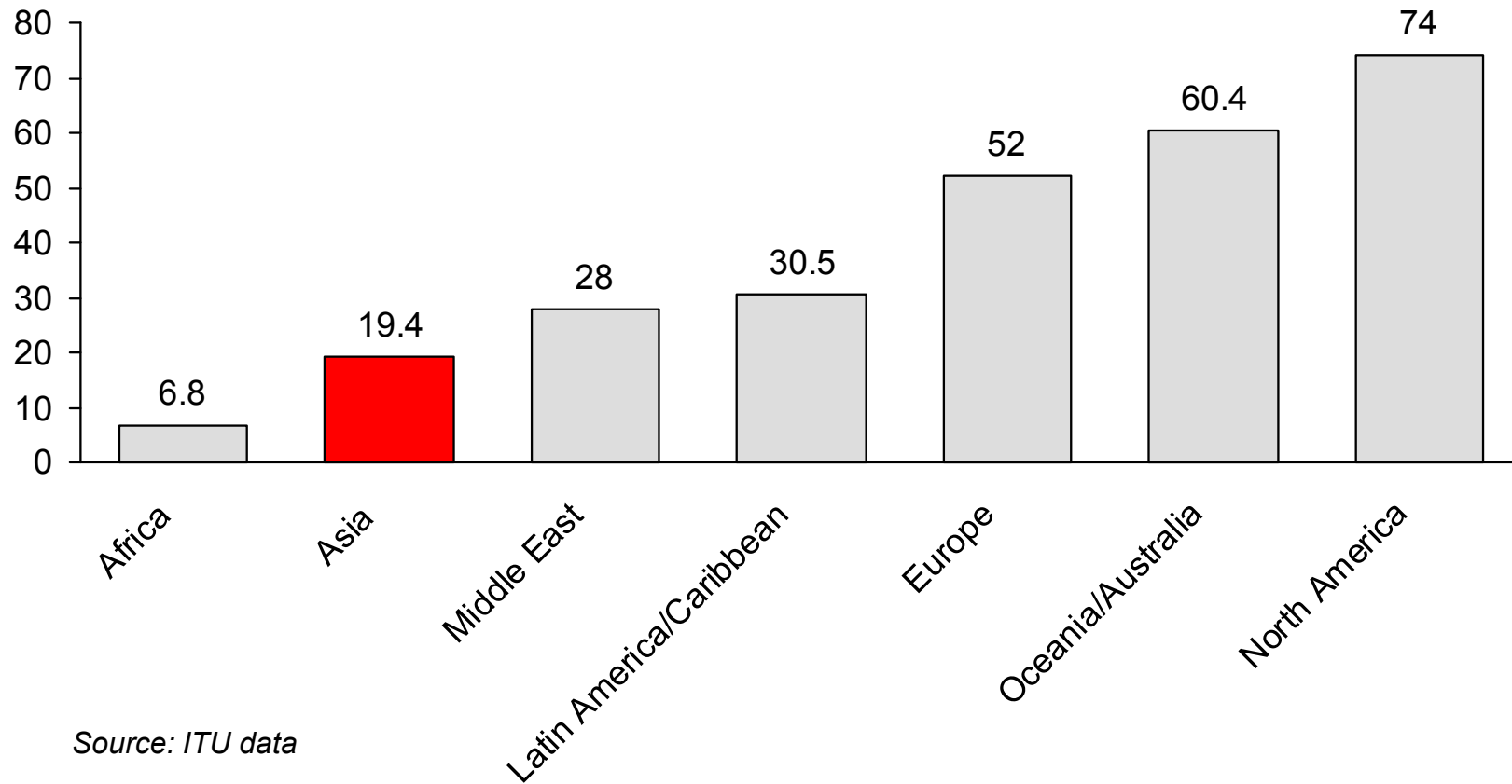US dollars

Source: Nokia Research 2009
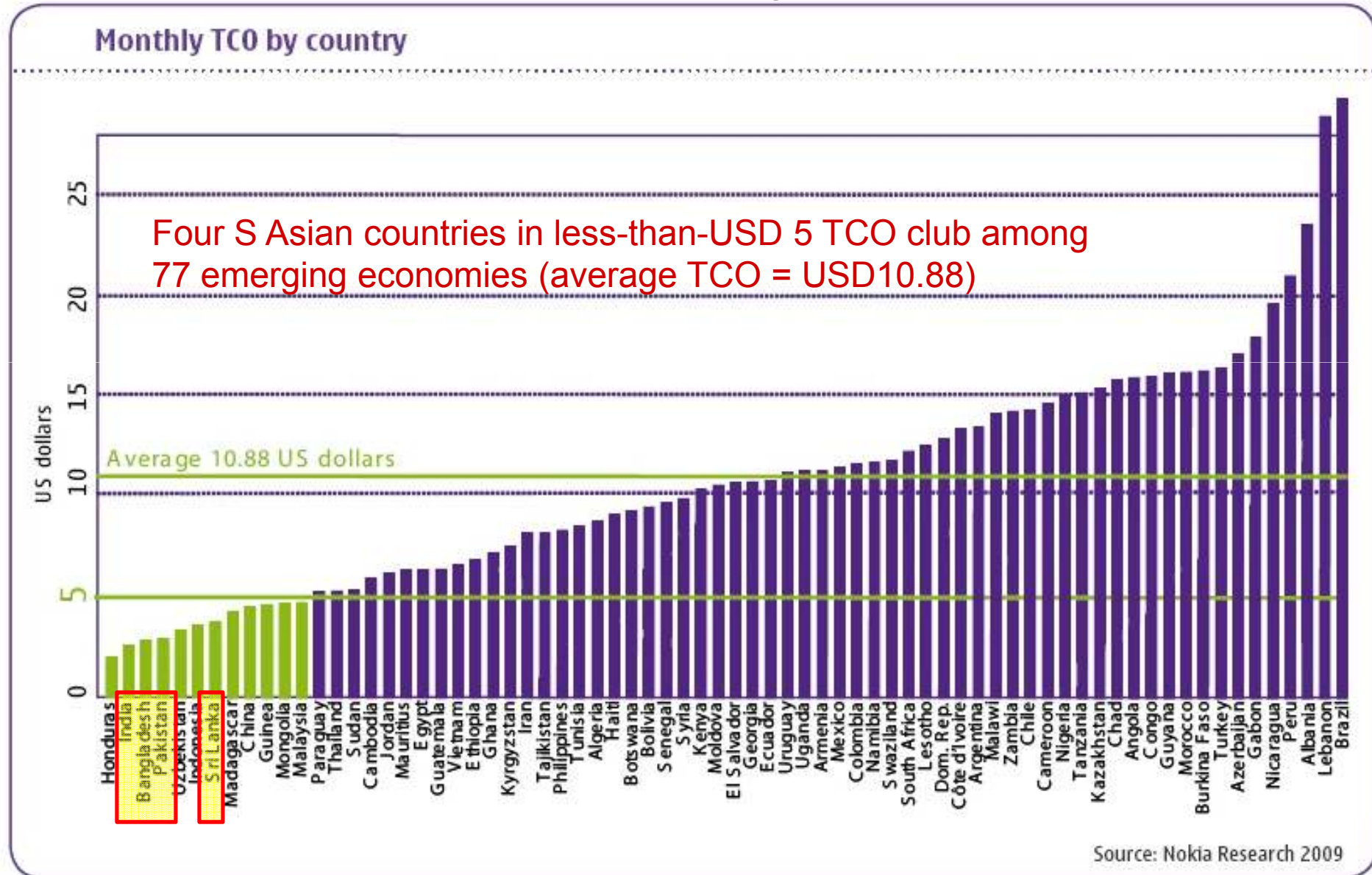
How? Market innovations (budget telecom model) that meet consumer's ability to pay

- Low ARPU's of USD 2 – 5
- Mostly (over 80%) prepaid
  - low cost of serving (no bills, electronic re-load, minimal 1-800 customer care)
  - low customer acquisition cost (~USD 3.5)
  - low/no credit risk (pre-paid and cash)
- Infrastructure sharing and managed networks
- Leapfrogging: Install newer (cheaper) technologies without legacy investment issues
- Regional negotiations for equipment (many regional operators)
- Formula: Drop prices to encourage VERY high minutes of use, load up network
- Low(er) Quality → necessary feature in early stages
  - "acceptable" call drop rates x2 of US/EU

Progressing towards an information society?

Internet access & usage - low

Internet users as % of population (reliability of data?)
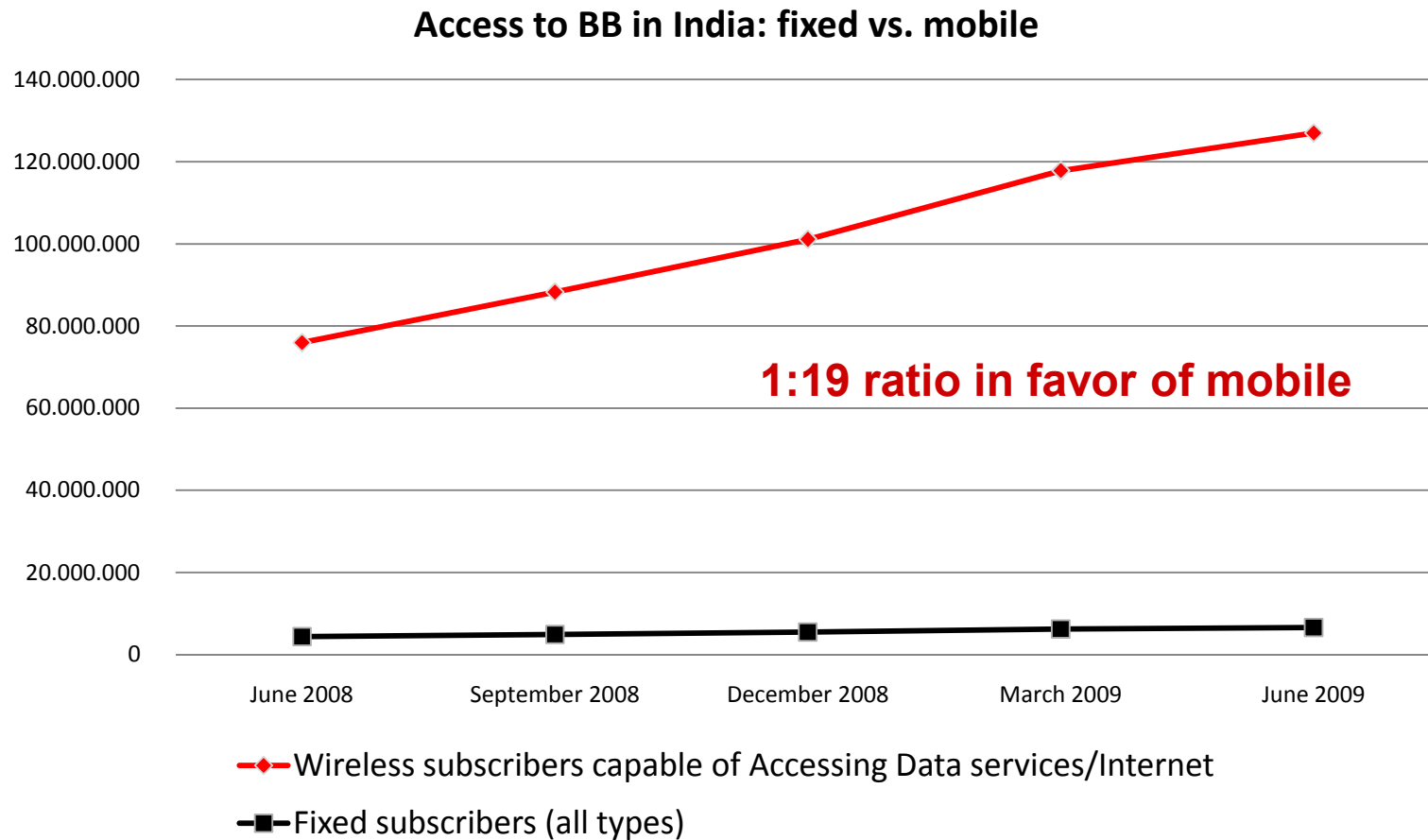

Source: ITU data

Region	%
Africa	6.8
Asia	19.4
Middle East	28
Latin America/Caribbean	30.5
Europe	52
Oceania/Australia	60.4
North America	74

LIRNEasia
www.lirneasia.net

Majority of the poor have no idea about the internet or have never used it

Legend:
- Daily
- 2 - 3 times per week
- Once a week
- Once in two weeks
- Once a month
- Less than once a month
- I don't access the internet
- I haven't heard about internet before

Pakistan: 62.1% (I don't access the internet), 36.0% (I haven't heard about internet before)
India: 27.8% (I don't access the internet), 71.9% (I haven't heard about internet before)
Sri Lanka: 69.9% (I don't access the internet), 28.6% (I haven't heard about internet before)
Philippines: 76.9% (I don't access the internet), 14.3% (I haven't heard about internet before)
Thailand: 53.9% (I don't access the internet), 35.7% (I haven't heard about internet before)

LIRNE*asia*
www.lirneasia.net

But when South Asia does come online, it will be through mobile

Access to BB in India: fixed vs. mobile

1:19 ratio in favor of mobile

Y-axis: 140.000.000 / 120.000.000 / 100.000.000 / 80.000.000 / 60.000.000 / 40.000.000 / 20.000.000 / 0

X-axis: June 2008 / September 2008 / December 2008 / March 2009 / June 2009

Wireless subscribers capable of Accessing Data services/Internet

Fixed subscribers (all types)

LIRNE*asia*
www.lirneasia.net

Early signs: mobile internet prices that match consumers ability to pay

Monthly mobile data TCO by country. Average 46.54 US dollars. Wallet share (TCO / GDP per capita): ≤5%, 5-10%, >10-20%, >20%. Source: Nokia, Nokia Siemens Networks, August 2009
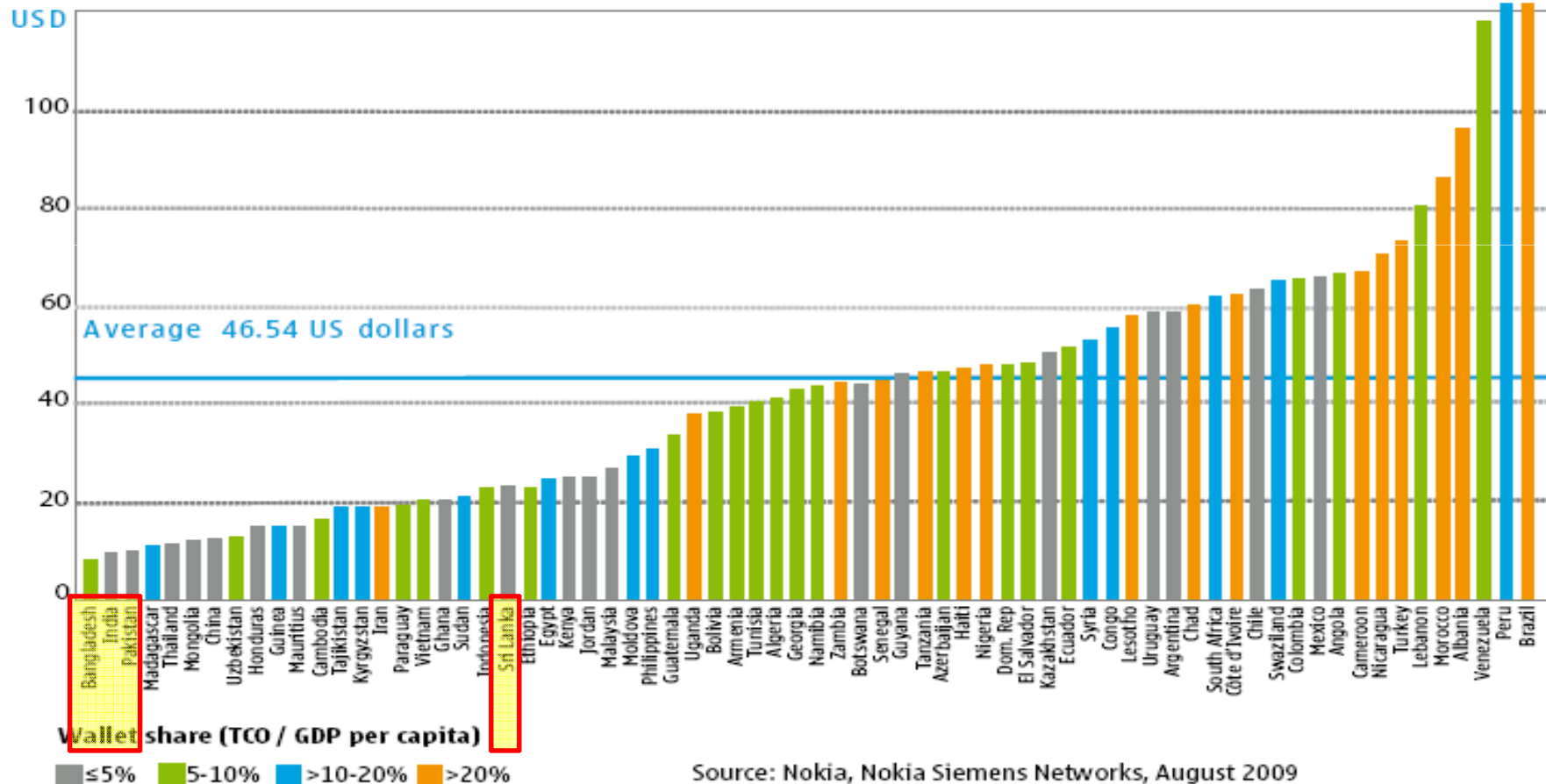
Driven by the same innovations that increased voice penetration
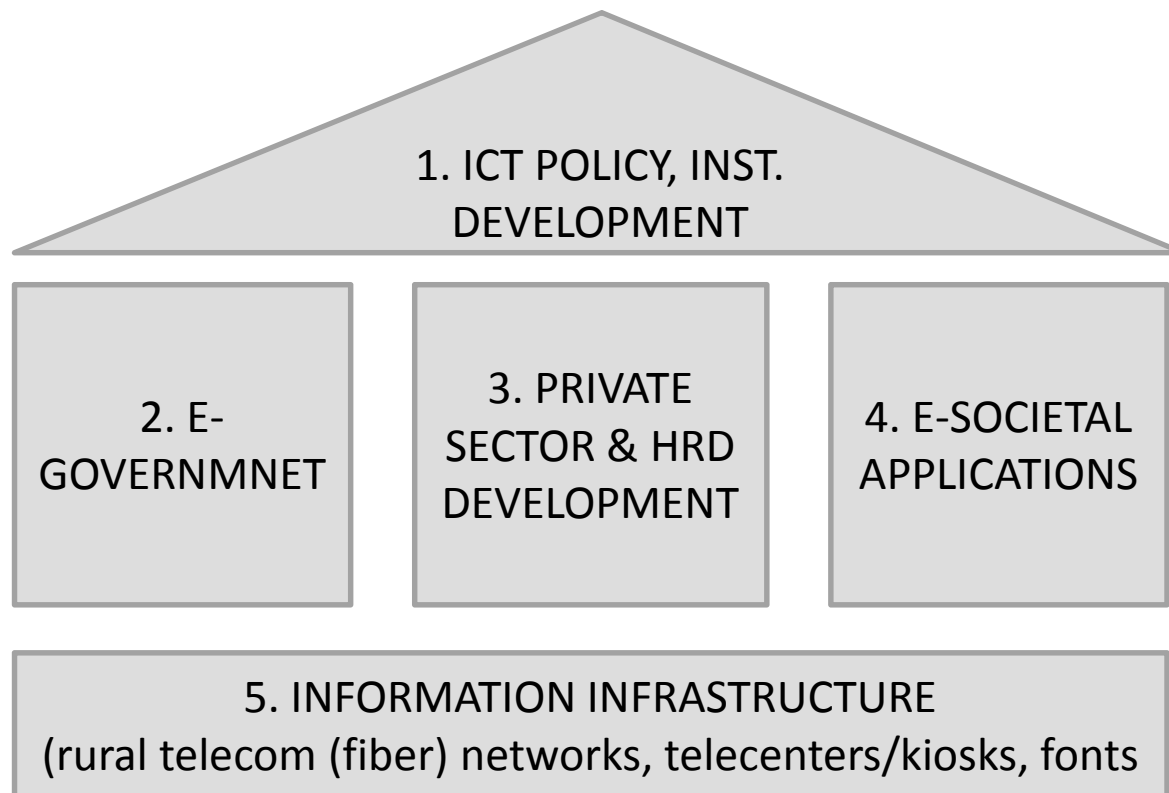
- Growth from limited-download, pre-paid packages
  - Scratch cards or e-loading for top ups and
  - Highest sale of SIMs = "data only" SIMs in India
- Quality: lower than expected
  - 20% of what's promised when going to international site
  - 80% of what's promised when accessing in-country content
  - International bandwidth still a problem

What are governments doing to move towards internet societies (other than correcting bad regulatory practices)?

Many South Asian governments taking cross-sectoral approach

- India
  - E-Gov
    - first led by individual states (e.g. Karnataka, Andhra Pradesh e-gov initiatives)
    - Now central government initiative (e.g. national ID, NeGP)
    - Policy on mobile access to government services
  - Industry promotion: Led by the private sector (NASSCOM)
- Bangladesh, Sri Lanka
  - Central government led, comprehensive programs (*e-Sri Lanka, Digital Bangladesh*)
- India, Bangladesh, Pakistan, Sri Lanka
  - Announcing/considering m-money regulations
  - Maldives: government implementing mobile money system
- Bhutan
  - IT parks?

e-Sri Lanka: a comprehensive e-development plan. Driven by the Executive. Centrally planned


```
                    1. ICT POLICY, INST.
                       DEVELOPMENT

  2. E-          3. PRIVATE
  GOVERNMNET     SECTOR & HRD      4. E-SOCIETAL
                 DEVELOPMENT       APPLICATIONS

  5. INFORMATION INFRASTRUCTURE
  (rural telecom (fiber) networks, telecenters/kiosks, fonts
```

- USD 83 million funding
  - IDA, Korea, GoSL
- "*smart island, smart people*"
- 2003 onwards
- Well rounded:
  - Access
  - Demand
  - Enabling infrastructure
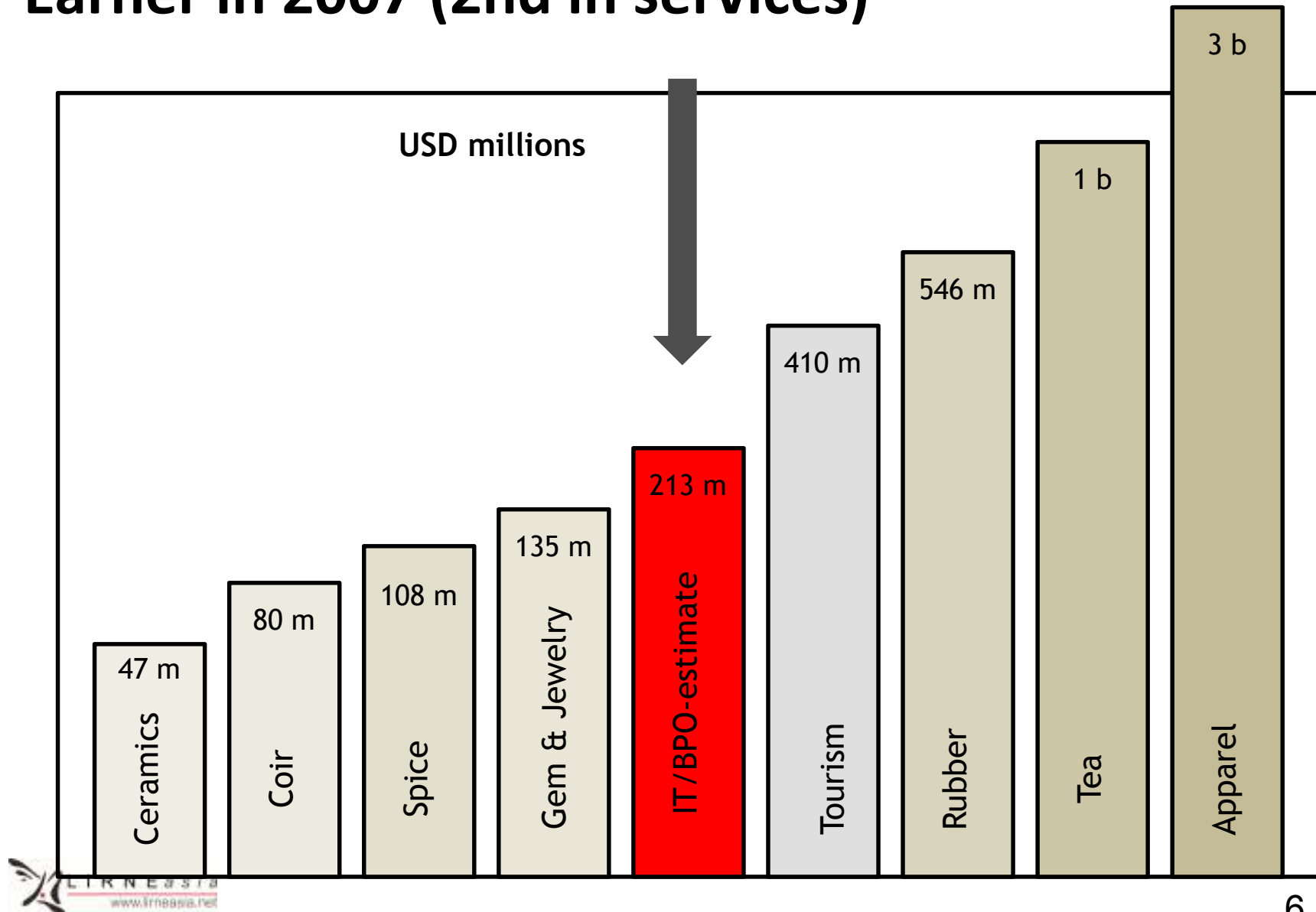
LIRNEasia
www.lirneasia.net

Many countries have similar components in their Information Society Policies

- Developing helpful policies
- e-gov as anchoring service
- Increasing private sector participation in the information society
- socially inclusive applications (local language content, fonts…)
- implementing enabling information infrastructure (networks, access points, standards)
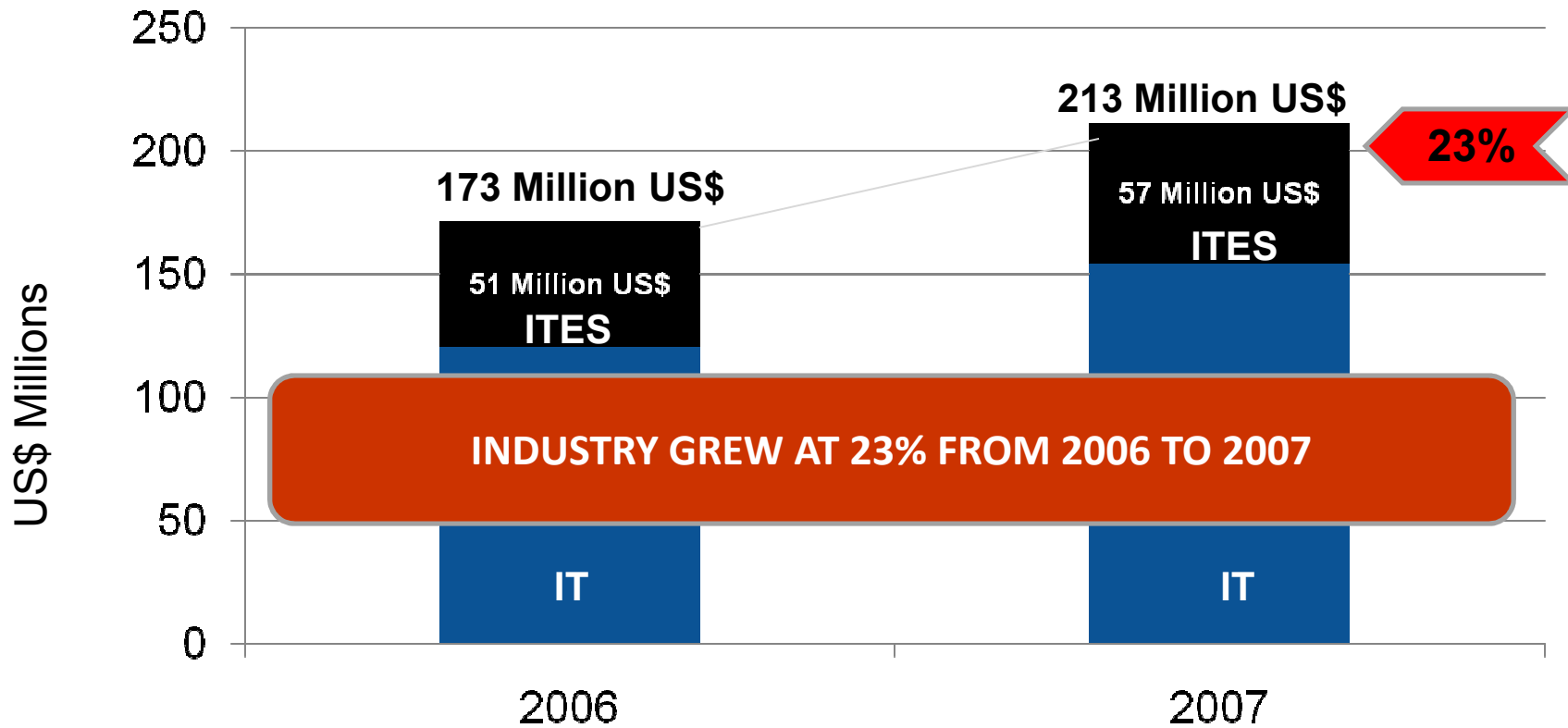
Development of the IT/ITeS sector in Sri Lanka

- Government leading the strategy, creating a focus :
  - Identifying core competencies (highest # of Charted Accountants per capita outside of EU)
  - Focus on high-value added Accounting & Fin. Services
  - Positioning Sri Lanka as back-up to India
- Industry (& country) promotion, market creation
  - At the right trade shows, road shows in countries
  - Ad campaign. Coordinating with other govt agencies
- Workforce development
- Grants for demand-driven activities (private sector demanded)
  - E.g. for training, for developing industry-wide applications etc.

Results: IT/ITES: 5th Highest Export Revenue Earner in 2007 (2nd in services)

USD millions

47 m	80 m	108 m	135 m	213 m	410 m	546 m	1 b	3 b
Ceramics	Coir	Spice	Gem & Jewelry	IT/BPO-estimate	Tourism	Rubber	Tea	Apparel

IT & ITES Industry Growth 2006 to 2007

Industry	2006	2007	Growth
IT	120 Million US$	154 Million US$	28 %
ITES	51 Million US$	57 Million US$	13 %
Both	1.675 Million US$	1.875 Million US$	12 %

Source: EDB Export Value Survey 2007

When conditions in Sri Lanka were so similar to Bangalore/Hyderabad, why did IT & ITES sector take off only after e Sri Lanka?

- Key actions were
    - Liberalizing international gateway (1 ➜ 33 licenses; price competition) to allow IT and ITES industry redundancy of suppliers and media plus low prices and high quality
    - Attracting a marquee captive BPO, HSBS Group Service Centre, to serve as the answer to the question "can BPOs work in Sri Lanka?"

Employment creation from IT and ITES industries in Sri Lanka

- Total IT industry, including exports, employed 11,564 (2005) ➔ 13,870 (2006) ➔ 70,000 est. (2014)
  - Estimated that each direct job generates 3-4 indirect jobs: 35,000 indirect (2005) ➔ 52,000 indirect (2006) ➔ 210,000 indirect (2014)
- Export-only employment estimated to be 8,400 in 2007
- ITES employment was estimated to be 3,700 in 2005, with 30% growth expected in 2006-07

E-society applications: taking a life of their own, with very little government funding in Sri Lanka

- Incredibly vibrant blogosphere
  - In local language (641 local language blogs vs. 747 English registered on respective aggregator sites)
- Digital content
  - E.g. for education
- Local Language Fonts
  - Many years in committees by govt.
  - Yet commercial fonts developed and working
- ICT in education: formally introduced as a subject

Score-card for e-Sri Lanka, so far:

e-Sri Lanka component	Level of success	Role of govt.
Private Sector Development	Successful. Room to grow	Minor – bringing industry together, de-regulation
E-Gov services	Failure/a work in progress, only the govt. call-center implemented	Significant role as Implementer
E-Society	Vibrant. Blogging (in local language), local content	Creating awareness, minor funding
Backbone network	Failure (with govt. as ~~ ~~	Govt. a failure as ~~ ~~ implementer ~~ ~~ Govt. led de-regulation ~~ ~~ ccessful
Access network (& kiosks)	Failure (subsidized kiosks) Success (other access points)	Failure as implementer -Successful deregulation

Digital Bangladesh – too early to evaluate, But similar excitement among entrepreneurs, awareness starting amongst citizens

India: doing the same, but less coordinated (spread across time, across institutions)

- E.g. Indian IT/ITeS sector: industry driven, powerful lobby
- Aided by govt. policies
- And "natural or historic" advantages (e.g. education system, large # of IT graduages)

Year	Exports (in US$ billion)	Growth in exports (%)	% Contribution to GDP
2004- 05	17.7	37.2	3.6%
2005- 06	23.6	33.3	4.1%
2006-07	31.1	31.8	4.7%
2007-08	40.4	29.9	5.2%
2008-09	46.3	14.6	

Export data from Ministry of Information & Technology, India
GDP contribution from NASSCOM

Not yet measured: indirect impacts

- Indirect employment & indirect economic impact of the IT/ITeS Industry Development
- Efficiencies in other sectors through ICTs (not just the ICT industry itself growing)
- Good business practices/corporate governance, permeating to all sectors
- Increased transparency (a few studies available from IN on impact of e-Gov services)
- Confidence, new possibilities through exposure to the "outside", to English…

Conclusion

- Telecom networks: the foundation of an information society
  - Regulation getting "better", over time
  - Industry innovating to meet market conditions with/without regulatory assistance
  - Voice – solved/almost solved
  - High speed broadband – not quite solved
- Applications, services & industry development towards an information society
  - Minor government action + unintended consequences
  - One off-examples, anecdotal evidence
  - Industry – measurable (positive) impact

About LIRNE*asia*

- *"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"*