Diálogo Regional sobre
Sociedad de la Información

"State of the art": Telecom regulation and new technologies

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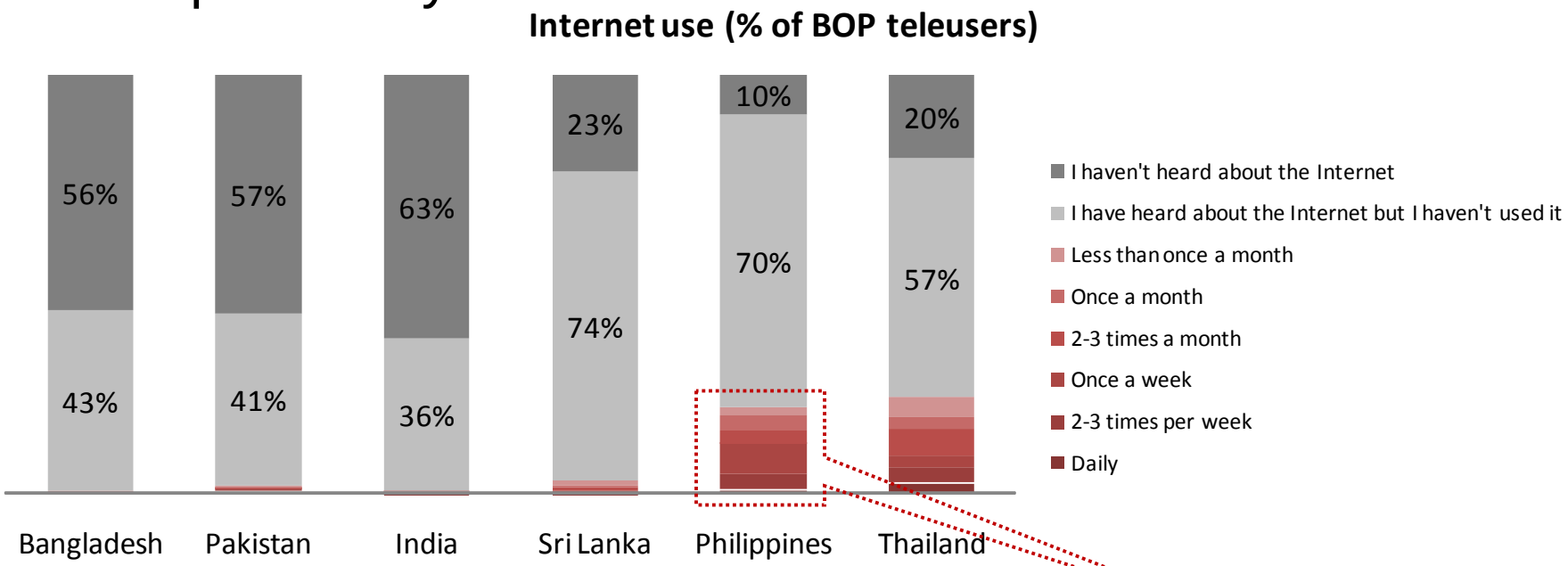
“State of the art”

- Sixteen years ago, in the early stages of the reform process, Levy & Spiller (1994) said that the reform solution must fit the institutional conditions
- Institutional conditions are different in different countries
  - How can there be a single “state of the art”?
  - Basic economic principles apply; but they are translated into different policy and regulatory forms and priorities that depend on institutional conditions
- My focus is on one set of policy and regulatory forms and priorities that have emerged in South Asia and the lessons that may be derived for other developing countries grappling with challenges of making new technologies available to all their people

The problem

- After all these years: Internet use & awareness among the poor in Indo-Gangetic Plain in 2008, acc. to large-sample survey



	Bangladesh	Pakistan	India	Sri Lanka	Philippines	Thailand
Use the Internet	0.6%	2.2%	0.8%	3.2%	20.7%	23.0%

Among BOP teleusers

What is the Internet?


Is it this? And this only?

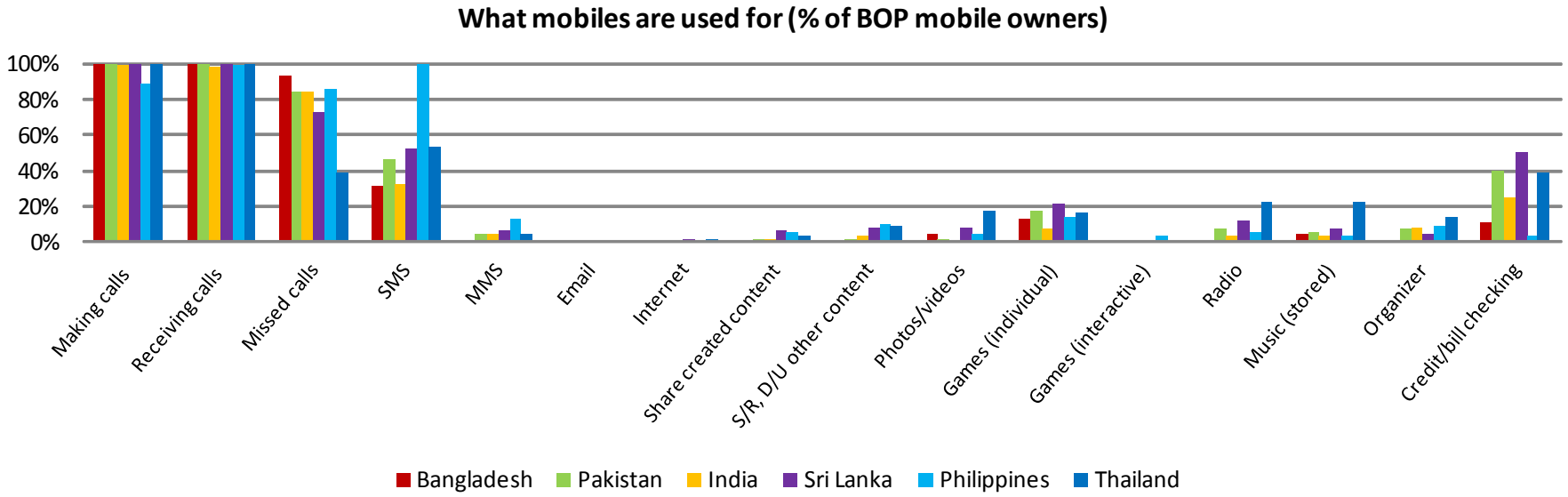
Alternatively, is the Internet a metamedium that allows one to engage in . . .

- Communication in multiple forms, synchronous/asynchronous, one-to-one/one-to-many, etc.
- Information retrieval
- Publication
- Transactions (including payments), and
- Remote computing??

- **And does using some of these functions over distance, using electronic means, constitute participation in the Internet Economy?**

Poor are participating, according to teleuse@BOP survey . . . .

- If the answer is yes, millions of poor people in the Indo-Gangetic Plain are beginning to participate in the Internet Economy through the mobile networks and handsets
  - Inchoate, but understandable as services are just beginning to be offered & business models are being worked out
  - The dongle/netbook surge had not yet occurred in 2008



10,000-sample, 6-country Teleuse@BOP survey in 2008 found that most poor people had . . .

- 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 %

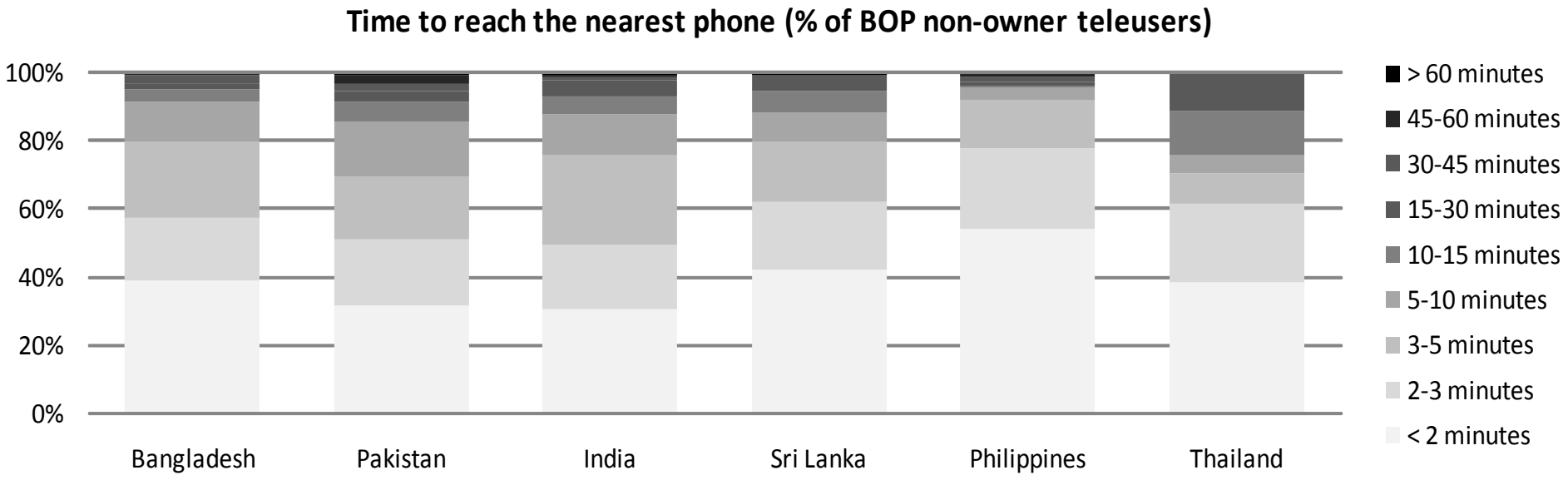
- Used a phone in the last week

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

Caused by SMS reliance

Among BOP (OUTER SAMPLE)

Among non-owners, ~80% can get to a phone in under 5 minutes



Most non-owners walk to the nearest phone

Clearly, success has been achieved with mobile voice in South Asia

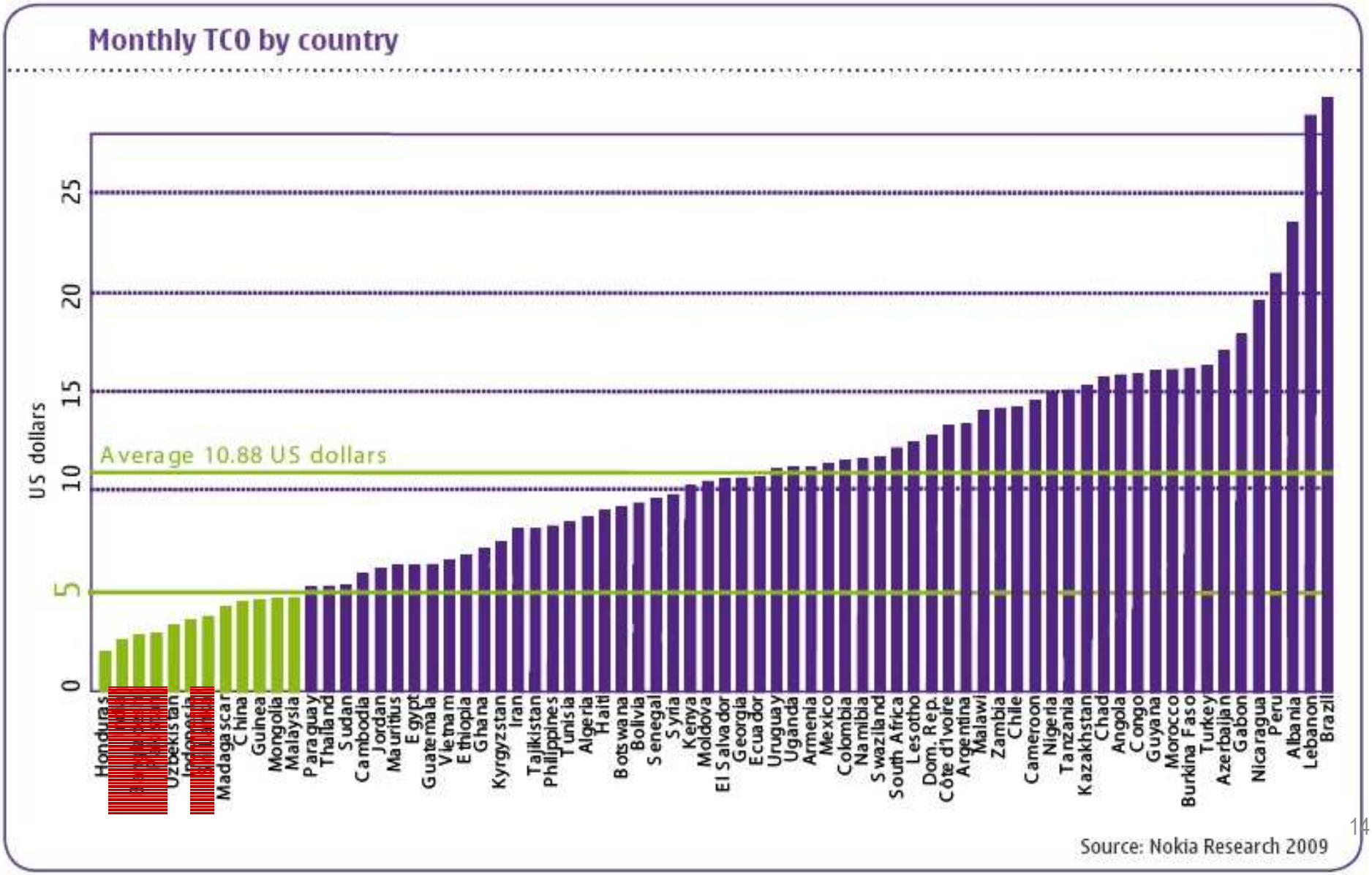
- How has this region which has a large concentration of poor people (world's largest is in the Indo-Gangetic Plain), achieved this?
  - Despite or because of policy and regulatory actions?
- If something works for the hardest problem, is it not likely it will work for others?
- How can the lessons be applied to Internet access?

Budget Telecom Network Business Model

How were this many poor people connected electronically?

- "Budget Telecom Network Model" that allowed South Asian telcos since 2005-06 to make excellent (if highly volatile) returns by serving "long-tail" markets of poor people by
  - Dramatically reducing transaction costs primarily through prepaid
  - Allowing poor people to pay for services when they need it and when they have money (as opposed to fixed monthly payments)
  - Controlling operating expenses through business-process innovation
  - Focusing on revenue-yielding minutes rather than ARPUs
- Akin to Budget Airline Model that allows Air Asia to make profits while conventional airlines flounder
- Downsides
  - Patchy quality of service for consumers
  - Volatile returns; increased risks for suppliers

Total cost of mobile ownership in 77 emerging economies

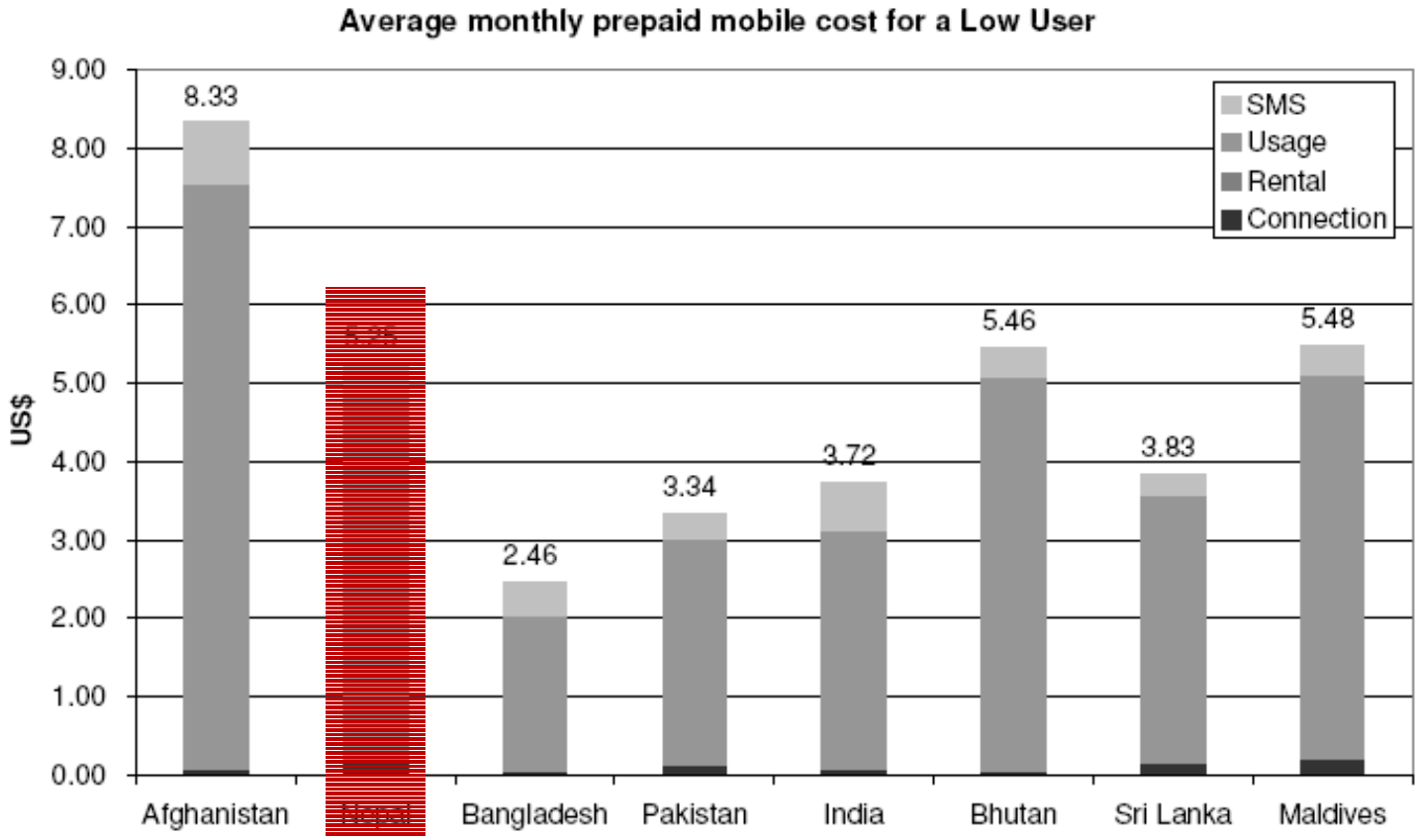


Competition as the necessary condition

- Despite being similar to Bangladesh, India, Pakistan and Sri Lanka, Nepal had high prices until 2009
  - Backdoor entry to mobile space by “fixed” CDMA operators was the explanation for prices dropping in 2009

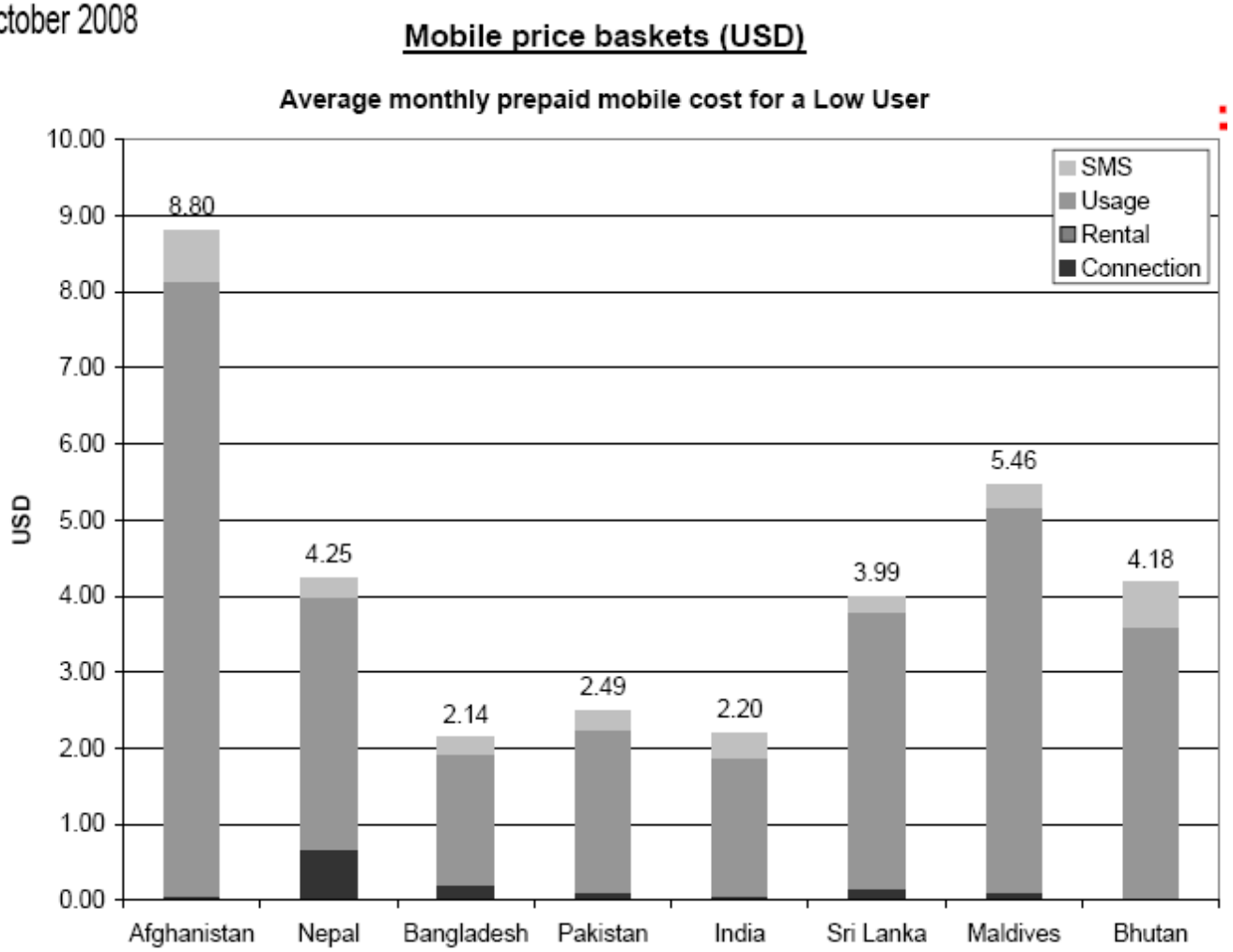
March 2008

Mobile price baskets (USD)



Source: http://lirneasia.net/projects/2008-2010/indicators-continued/benchmarks/

October 2008



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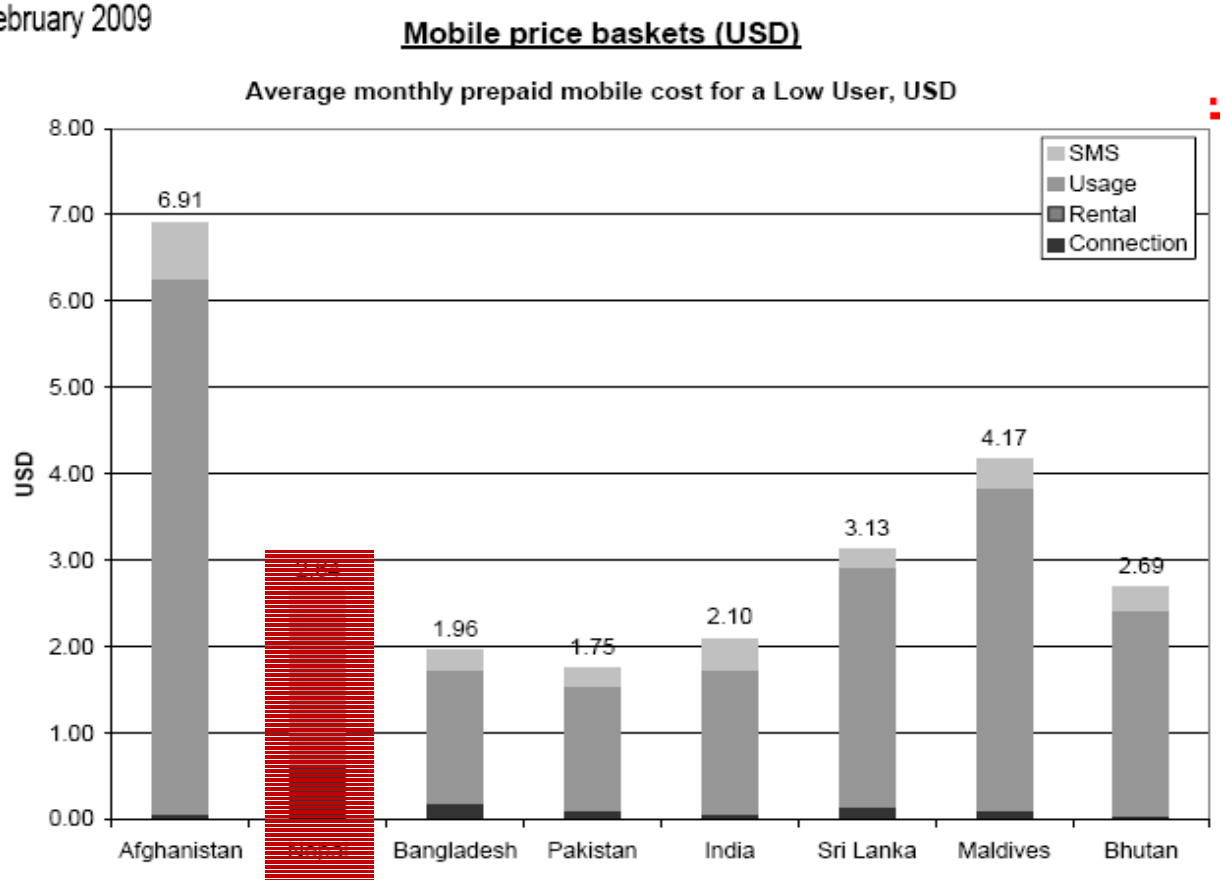

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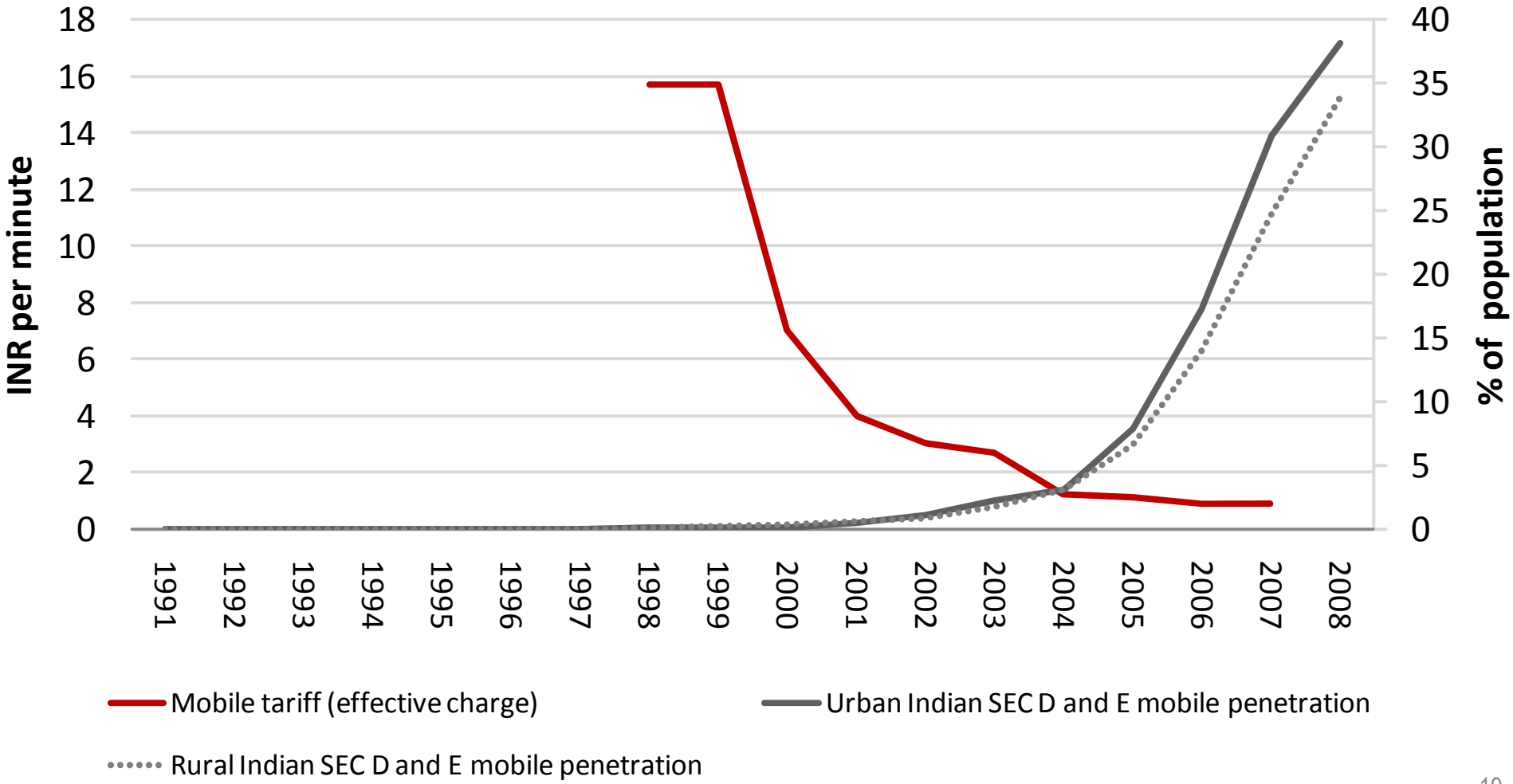
Low prices ➔ greater participation by the poor (urban and rural)



Extending BTNM to broadband

Investment, over all

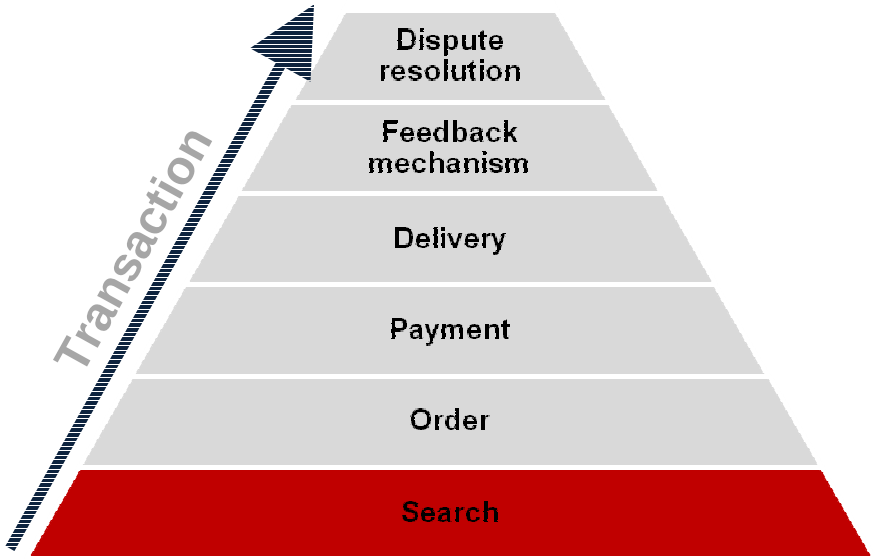
- Mobile voice success was achieved because the conditions were created for massive investment in network build-out
- Building networks capable of broadband is not just incremental; it is the building of an overlay network that requires massive investment, but
  - Not enough cashflow from commodity voice business
  - Governments have gotten greedy and are extracting lots of taxes
  - Great Recession (positive and negative effects, depending on region and players)
  - Regulation has become politicized with higher profile

Extending the business model: Prepaid “sachet” pricing

- Same as with voice and shampoo, poor people need to be able to pay when the need arises and when money becomes available
- Broadband use in HSPA+ networks, where the relation between the base station and users is in any case not fixed is conducive to this form of pricing
- Of course, sachet pricing can include “buckets” of minutes, MB, etc., and need not be seen as a taxi meter

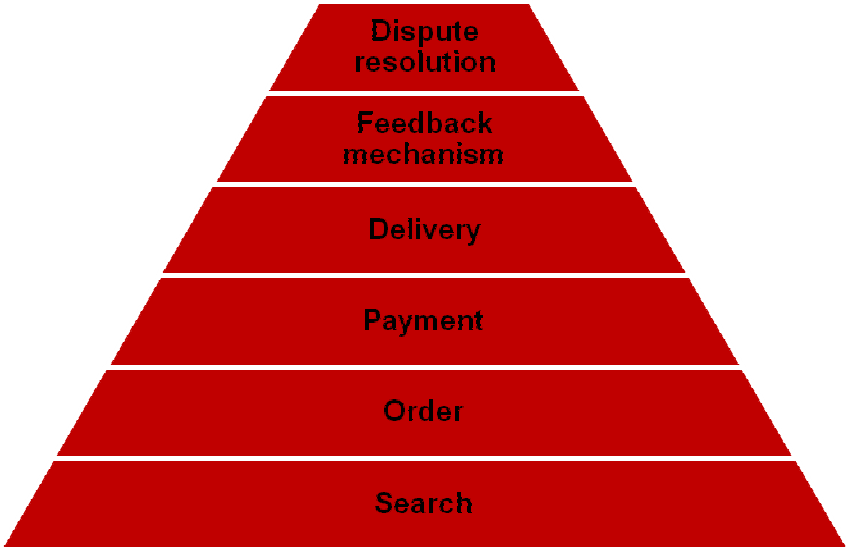
New services/applications needed

CellBazaar



CellBazaar

Amazon Marketplace



Amazon Marketplace

stages included

stages not included

- Today CellBazaar can only do search; if payment policy firmed up they can add payments; if postal system improved they can start delivery, etc.

Policy & regulation

What role for policy and regulation?

- Restating the key point made by Levy & Spiller back in 1994: solutions must fit institutional conditions
- Institutional conditions include the operative business model ➔ policy and regulation must support and leverage the business model, not work at cross purposes to it
- The question then is what can policy and regulation do to leverage the “Budget Telecom Network Model”?

Policy & regulation to leverage BTNM for public objectives such as greater Internet use

- Market entry is the necessary condition; uncertainty caused by license terms ending needs to be reduced
- Spectrum management, including refarming, has to be given highest priority
- More emphasis on availability of, and wholesale access to, “fat pipes” than termination rates per se
- Attention to anti-competitive practices, especially vertical price squeeze
- Old style price regulation to be replaced by forms of forbearance, if necessary bounded to address competition concerns
- Gentle on Quality of Service (QOS) regulation
- Phase out universal-service levies and rationalize taxes

Key lesson 1: Ensure necessary condition by allowing market entry

- Transparent is good (Pakistan), but even otherwise is better than no entry (Bangladesh and Sri Lanka); even Nepal's "backdoor" mode has a good side
- Entry does not mean a piece of paper, but includes frequencies, numbers and rights of way
- Unless uncertainty caused by license renewals is addressed, new investments will be depressed
- Address market-exit, as integral element of market-entry policy
- Will result in BTNM being implemented

Key lesson 2: Priority to scarce resources, including spectrum

- Refarm and increase supply of spectrum
- Give frequencies and numbers without delay
  - Not necessarily free, paying attention to transparency and removing incentives to waste
  - Predictable procedures
- No point in licenses without frequencies; but in general frequencies should be decoupled from licenses
- Assist with rights of way
- Allow passive and active infrastructure sharing to bring down costs
  - Help reduce energy costs

Key lesson 3: Wholesale access to “fat pipes”

- BTNM causes networks to extend coverage ➔ backhaul becomes more important
  - International is especially important for broadband
- Wholesale access is more important than termination
  - Bangladesh achieved good performance with the worst termination regime in the world
  - With widespread multiple SIM use, customers are bypassing interconnection regimes

Key lesson 4: Attention to anti-competitive practices

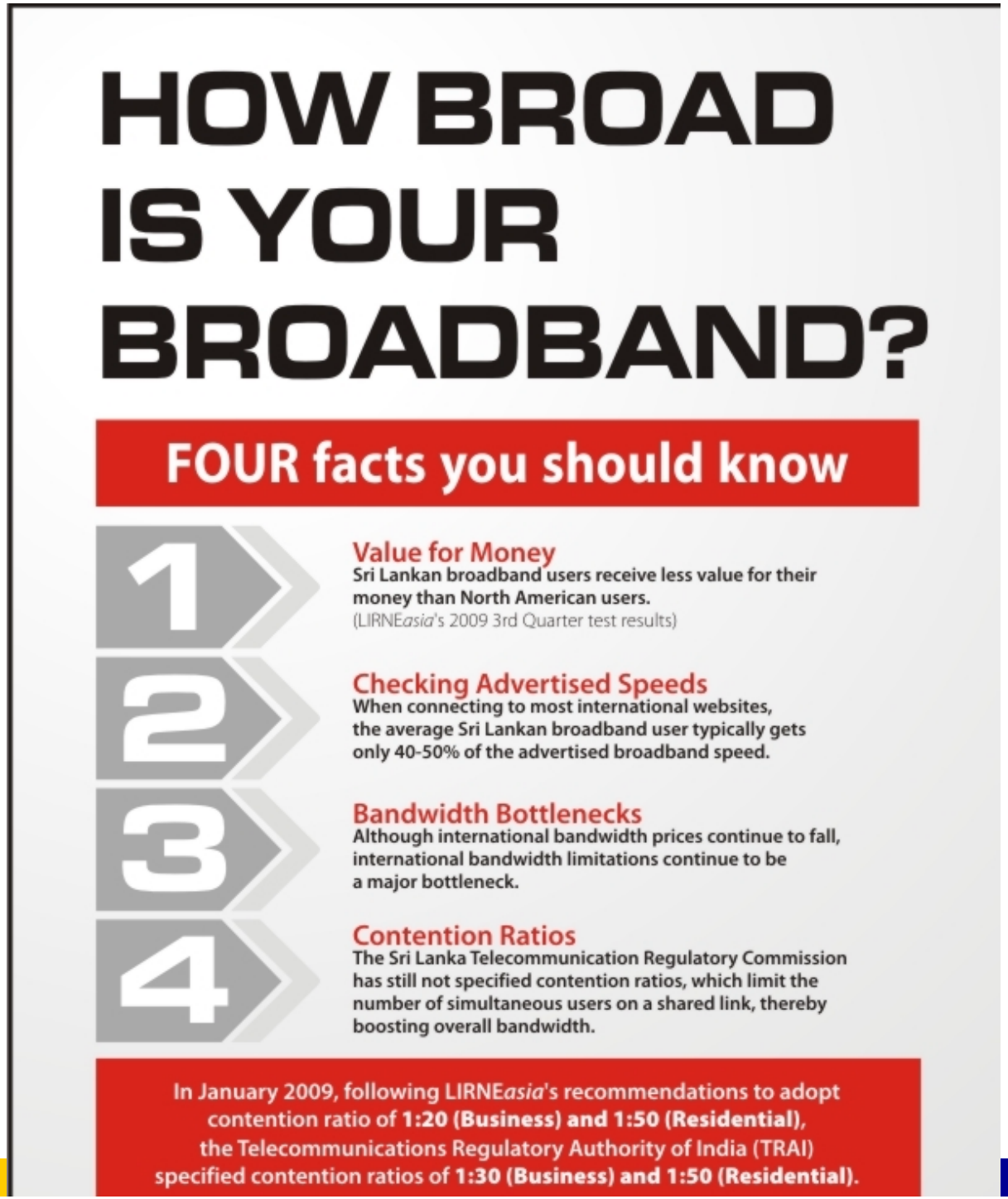
- Especially vertical price squeeze
  - Becomes more important as retail prices go down under the BTNM

Key lesson 5: Price forbearance, banded or full

- India has shown how forbearance gives good results
- But India has some of the world's lowest HHIs
- What about countries with less competition and incumbents with control over essential facilities?
  - Banded forbearance
    - A rudimentary form in place in Bangladesh

Key lesson 6: Go gentle on quality of service regulation

- Patchy QOS is an outcome of BTNM
- Hard regulation of QOS with high standards will stifle the model and deprive the poor of service
- But truth in advertising and naming and shaming for those who violate basics . . .
- Crowdsourcing of QOS
  - Asian 2 years ahead of USA



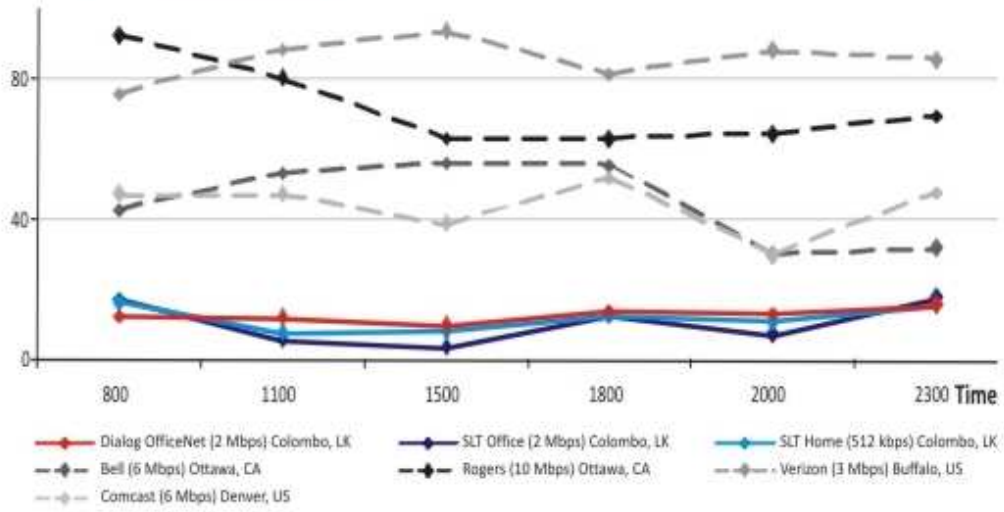
Ad published in Colombo on the occasion of the 11th Meeting of the South Asian Telecom Regulators Council

specified contention ratios of **1:30 (Business) and 1:50 (Residential).**

Models to emulate

PARAMETER	SINGAPORE	INDIA
Network Availability	> 99%	> 98%
Latency (Local)	< 85ms	< 120 ms
Latency (International)	< 300ms	< 350 ms (terrestrial) < 800 ms (satellite)
Bandwidth Utilization	90% during peak time	< 80% during peak time
Download Speed	Not Specified	> 80% of advertised from user to ISP
Service Activation	Not Specified	100% in 15 working days
Customer Support	Not Specified	60% calls in 60 seconds 80% calls in 90 seconds

Value for money **Fixed Broadband Download from yahoo.com** (kbps per dollar)



Broadband speed is the best known quality parameter. We measured how much you get for what you pay.

We measured download speed at different times, on multiple days to make readings accurate.

DOWNLOAD THE FREE SOFTWARE from **www.broadbandasia.info** to test the quality of your broadband link

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Key lesson 7: Lower the tax burden

- Recognize that long-tail customers are very sensitive to price & are buying “sachets” of services
  - No big usage-insensitive taxes
- Ideal if mobile/telecom specific taxes removed; even if not, keep them steady and reasonable
- Time to end universal service taxes; no point in taxing the poor to provide services also to the poor

If you can, improve regulation & be consistent about it

- Ideal: predictable, transparent and consultative
  - But, second-best options that rest on simplicity and one-off actions may be most efficacious
- If good regulation can be done consistently over time, regulatory risk will decrease ➔ cost of capital will decline ➔ more investment will flow in ➔ more people will be connected at lower prices ➔ more profit ➔ virtuous cycle

In sum

- A new business model, not government action (regulation, universal service funds), has connected unimaginable numbers to networks at unimaginable prices; this same model can be extended to broadband
- Policy of market opening has created the conditions for emergence of disruptive competitors and discovery of new business model to bring costs down to the floor
- Government will get better results by understanding and leveraging the business model than by trying to achieve public objectives on its own
- Particularly important to align telecom and taxation policies

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