

Policy & regulatory actions that will help achieve Digital Bangladesh by 2021

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BEI, Dhaka, 12 February 2013



Agenda

- Imagining Digital Bangladesh
- Success of voice & challenge of Internet
- What can policy and regulation contribute?
 - Not a comprehensive discussion
 - Certainty and predictability in taxation benefits both government and investors
 - Improving licensing is critical to investment promotion
 - Balance between good spectrum practices and need to raise revenue from 3G auctions must be found if access networks are to be built to support Digital Bangladesh
 - Doing regulation better, short of amending the Act

Imagine Digital Bangladesh

- Education and learning will be reinvented
- Citizens will have better employment opportunities in service sector which will, by 2021, absorb 45 per cent of workforce
- Many opportunities will be created to export skills through ICTs and through knowledge-intensive agriculture and manufacturing right here in Bangladesh
- “Brain circulation” will replace “brain drain”



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How it works

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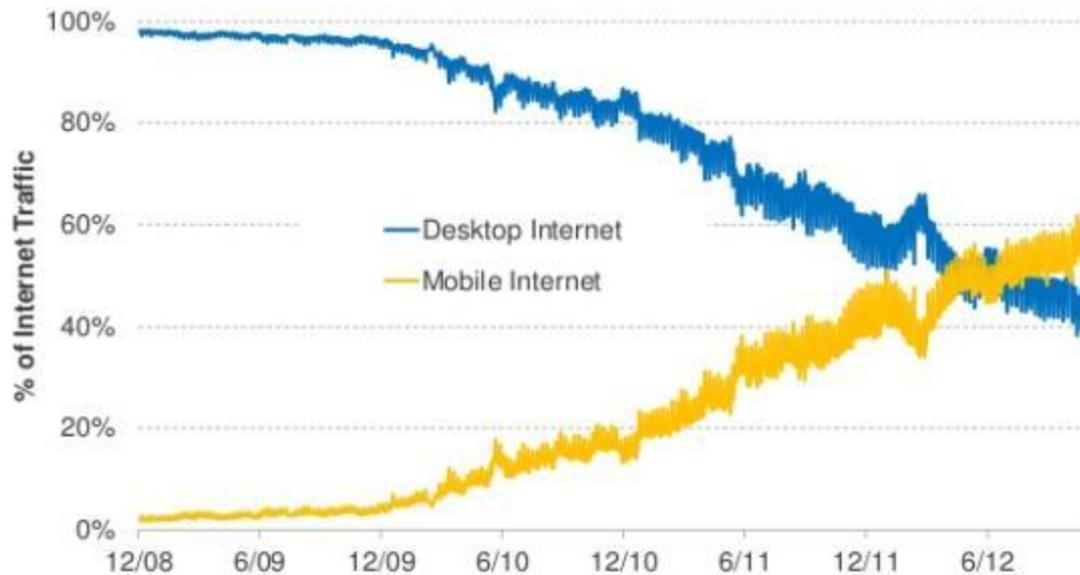
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Coaches

How are people actually connecting to the Internet?

In India, Mobile Internet Traffic Surpassed Desktop Internet Usage in May, 2012 - Other Countries to Follow...

India Internet Traffic by Type, Desktop vs. Mobile, 12/08 – 11/12



KPCB

Source: StatCounter Global Stats, 11/12

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http://news.cnet.com/8301-1023_3-57556943-93/mobile-internet-traffic-gaining-fast-on-desktop-internet-traffic/

Wireless is how most people will access the Internet

- Not different even in developed markets where wireless access is growing rapidly, even with widespread “desktop” access
 - Laptop sales overtook desktop sales only in 2008
 - But tablet sales will overtake laptop sales in 2013
- Fiber will come within a few meters of the user in densely populated cities; within a few kilometers in rural areas
- Success of Digital Bangladesh depends on a realistic understanding of the fundamental importance of wireless in access networks
 - If we continue to think of taxing mobile to fund some kind of wired access network, Digital Bangladesh will not be realized

Success in voice access; Challenge in Internet access

Voice

- ~100% of national territory covered by signals
- High uptake
 - 99% at Bottom of Pyramid (BOP) say they have used a phone in last 3 months
 - More phones than radios (and even TVs) in BOP households
- Prices among lowest in the world
 - Result of **Budget Telecom Network** (BTN) business model
- Voice has become a commodity; profits a problem → mobilizing capital more difficult

Internet

- 5% Internet users; negligible reach among BOP
- BTCL & TeleTalk coverage minimal
- Content, handsets & skills needed for Internet uptake
- ADSL can only be provided by BTCL; 3G available only through under-capitalized TeleTalk
- Even if 3G/LTE frequencies given to operators with capital and motivation, investment climate is depressed
- No attractive content ↔ no users

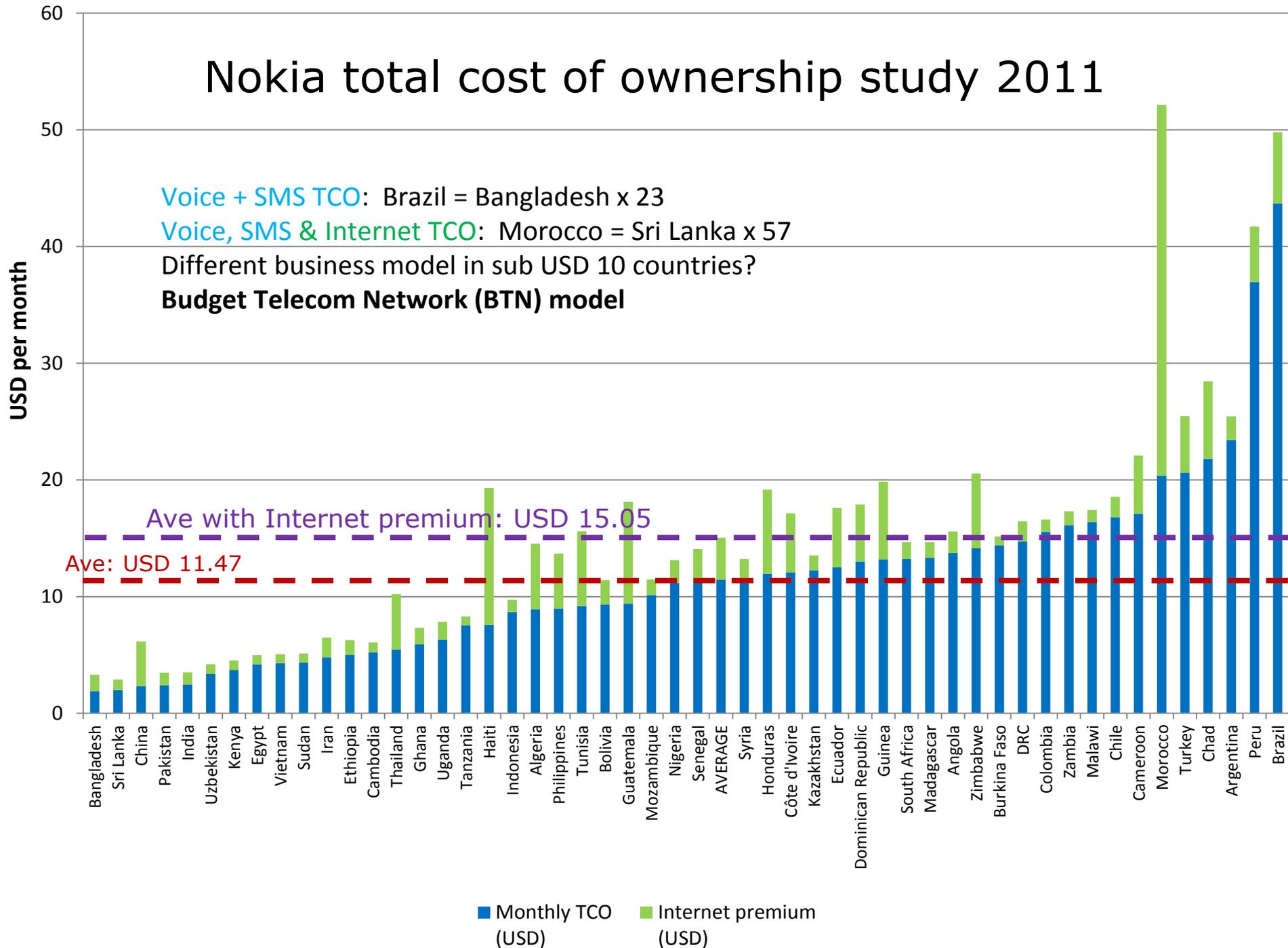
Nokia total cost of ownership study 2011

Voice + SMS TCO: Brazil = Bangladesh x 23

Voice, SMS & Internet TCO: Morocco = Sri Lanka x 57

Different business model in sub USD 10 countries?

Budget Telecom Network (BTN) model



56% of Bangladeshis had mobile SIMs and 5% were Internet users in 2011 (most recent from ITU)

	Mobile SIMs/100	Internet subs/100	Internet user %	Broadband/100
Maldives	165.72	6.63	34	6.37
Bhutan	65.58	1.9	21	1.79
Sri Lanka	87.05	-	15	1.71
India	72	1.8	10.07	1.08
Pakistan	61.61	1.63	9	0.31
Nepal	43.81	-	9	0.31
Bangladesh	56.06	0.76	5	0.31
Afghanistan	54.26	-	5	-

<http://www.itu.int/ITU-D/ICTEYE/Indicators/Indicators.aspx#>

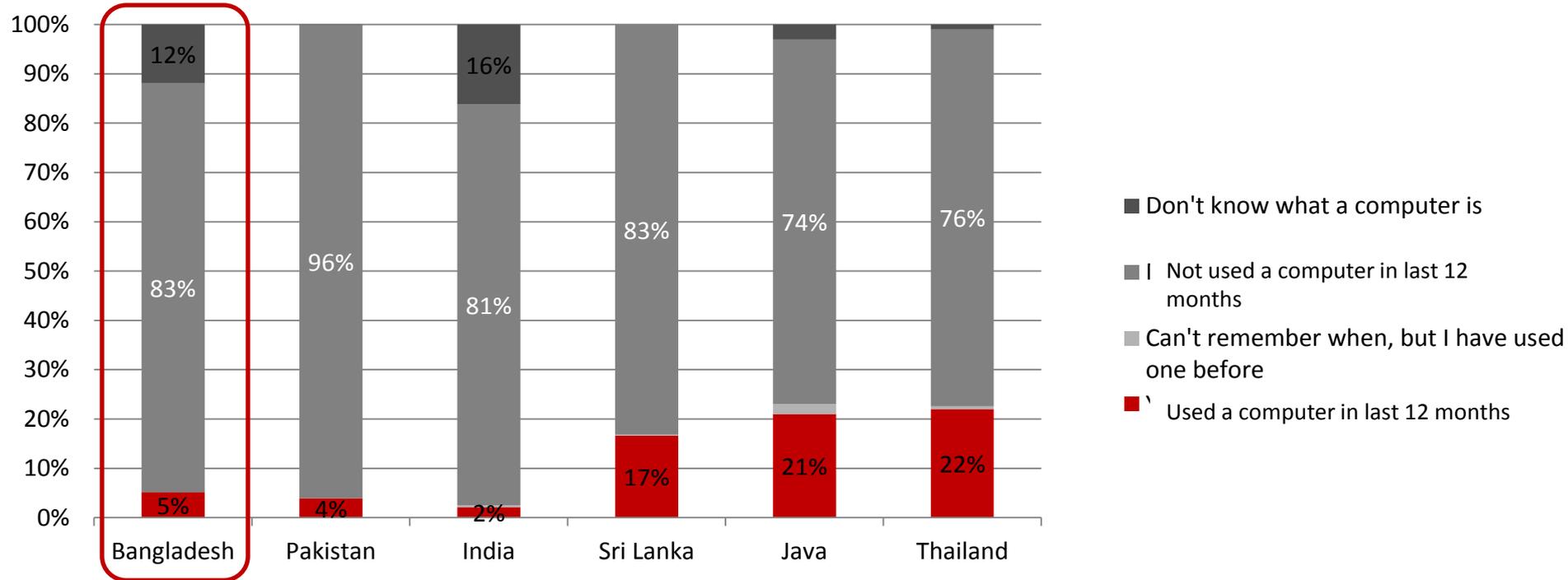
Full population → poor: Findings from representative-sample survey: 99% of BOP have used a phone in previous 3 months

	Bangladesh	Pakistan	India	Sri Lanka	Java	Thailand
2008	95%	96%	86%	88%	-	77 %
2011	99%	96%	89%	90%	90%	91%

SEC D& E, corresponding to those living on less than USD 2/day
 Representative sample of 2,050, +/- 2% at 95% confidence interval

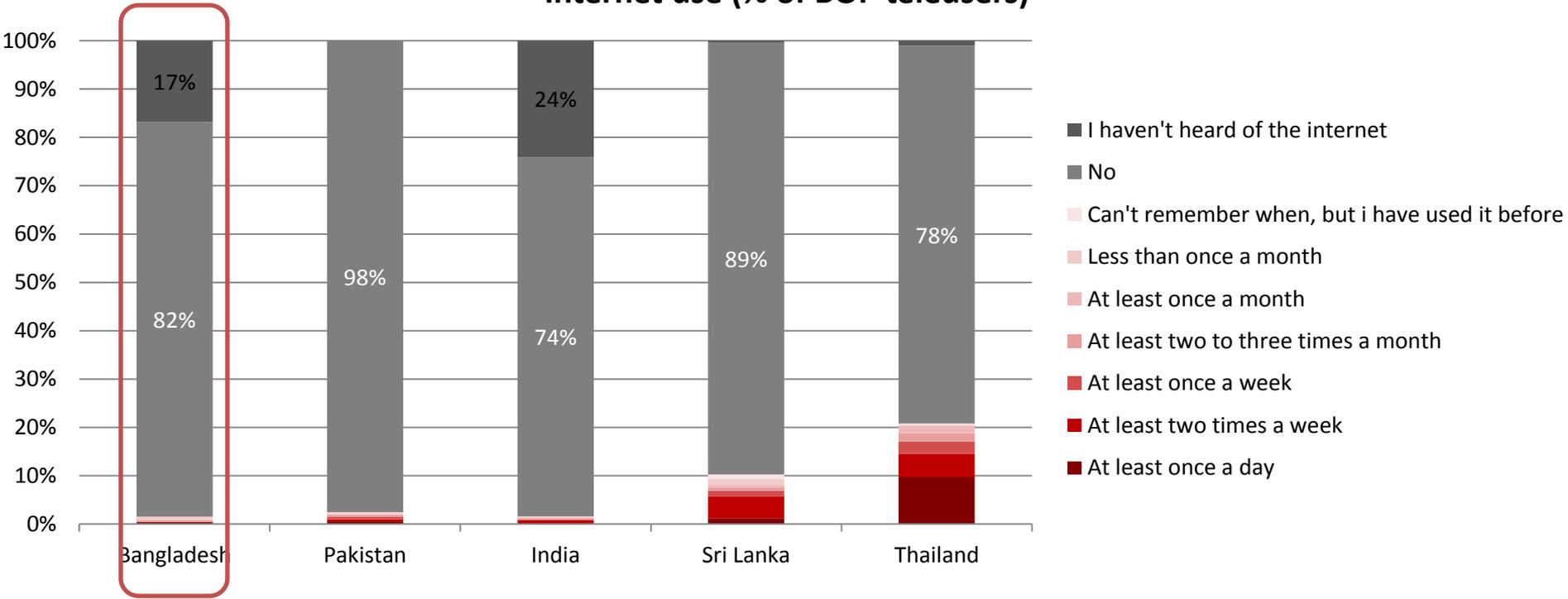
In contrast, computer use @ BOP is low (2011)

Usage of computers (% of BOP teleusers)



Internet use similarly low @ BOP; awareness problems in Bangladesh & India (2011)

Internet use (% of BOP teleusers)



	Bangladesh	Pakistan	India	Sri Lanka	Thailand
Use the Internet (% of BOP teleusers)	2%	2%	1%	9%	21%

Full population. Facebook as proxy for Internet. Users (last 3 months): 1/50 Bangladeshis, compared to 1/3 Maldivians

Maldives	34.44
Bhutan	11.29
Sri Lanka	7.08
Nepal	6.63
India	5.26
Pakistan	4.37
Bangladesh	2.10
Afghanistan	1.38

Internet-access challenge can be met & Digital Bangladesh achieved

- By creating conditions for extending the **Budget Telecom Network** model to broadband
 - Low prices essential
 - Costs must be kept down if low prices are to be sustained
- By enabling the build out of wireless **access networks** capable of handling data cost-effectively
 - Backed up by non-discriminatory, cost-oriented access to **fiber backhaul**, including redundant capacity
- By creating conditions for building **applications that are of value to consumers**, giving them reason to use Internet

Achieving Digital Bangladesh = Getting more Bangladeshis using Internet

- This requires investment
 - Illustrated by insignificant impact made by under-capitalized BTCL (ADSL) and TeleTalk (3G)
- Those who have ability to invest (Bangladesh has some of the largest telecom companies in the world) are not investing/are not permitted to provide 3G/4G connectivity
 - Voice success was achieved by mobilizing private capital, not by relying on BTTB; why not do the same with Internet access?

SELECTED POLICY & REGULATORY CONTRIBUTIONS

Investment comes when there is certainty and predictability

- Understand that what amount to overlay networks will have to be built; major investments are required
- Also understand that creating platforms for applications will require investment
 - Major investments, with relatively long gestation periods, require
 - **Uncertainty in tax environment** must be reduced
 - **Regulatory risk** must be reduced, especially re market entry-exit, scope of licenses & spectrum

**ACHIEVING STABLE REVENUES FOR
GOVERNMENT WITHOUT HARMING
INVESTMENT CLIMATE**

Increasing taxes can decrease revenues

Pakistan case

- In 2008, PTA conducted a tax-impact analysis, concluding that "with the given increase of tax rate from 15% to 21% the GST collections will decline"
 - Loss to **governmental revenue in the first quarter** of fiscal year 2008-9 was a predicted
- As a result, GST rate was reduced from from 21% to 19.5% in next budget; revenues increased

GST rates on telecom charges

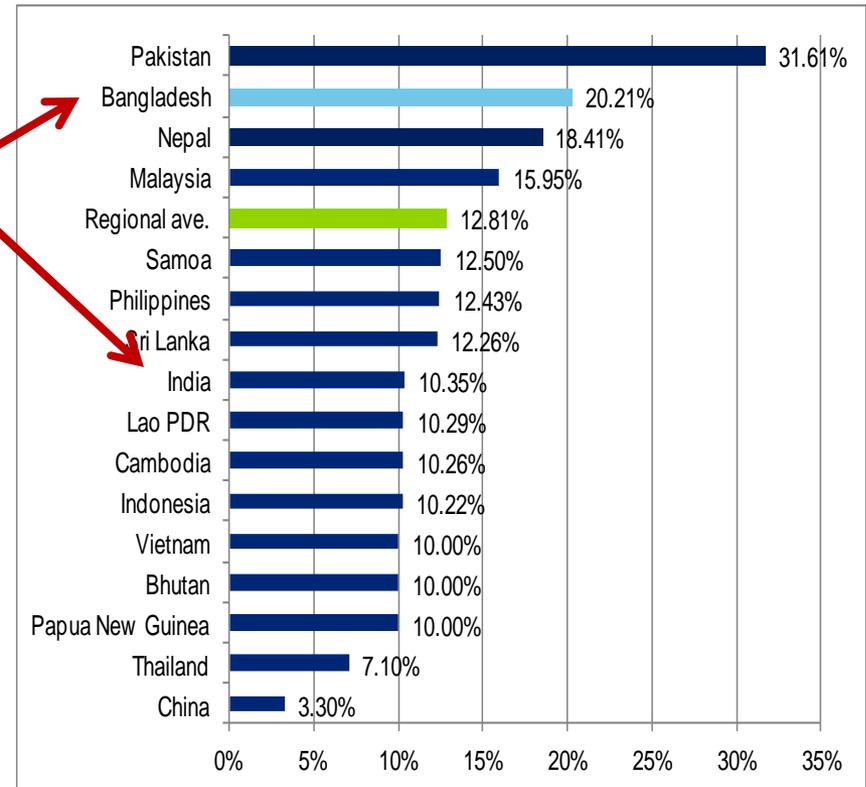
Year	Rate (%)
2007-08	15
2008-09	21
2009-10	19.5
2010-11	19.5
2011-12	19.5

In Asia, the investment climate is being harmed by high mobile taxes & by uncertainty

Uncertainty

- India's dragged out back and forth over tax on Vodafone acquisition
- Bangladesh joining with VAT issues, but has two strikes against

Tax as a % of Total Cost of Mobile Ownership



Source: Deloitte

Wednesday, June 13, 2012

Are mobile-only taxes justified

Rohan Samarajiva

Willie Sutton was asked why he robbed banks. He is said to have replied, "That's where the money is." Why do politicians tax mobile users where the money is.

But perhaps the reasons are less cynical.

Gregory Mankiw is a professor of Economics at Harvard. In 2008, he supported Mitt Romney, the former governor of Massachusetts, in the Republican presidential nomination. He is also the author of the bestselling textbook Principles of Economics and the 32nd most cited economist in the world today.

In a recent op-ed article on taxation policy, Professor Mankiw's good rule of thumb is that when you tax something, you get less of it. This means that taxes on hard work, saving and entrepreneurial activity will impede these fundamental drivers of economic growth. The question is: what to tax those things we would like to get less of."

Some economists would interpret the government's action as if it thought that mobile use is a bad thing that must be discouraged. Few economists would complain about cigarettes being subject to additional taxes.

Cigarettes have significant negative externalities. They impact on people who did not decide to smoke, either through health

Thursday, June 28, 2012

Front Page

Tax on mobile bill withdrawn

Muhith also raises tax-free income limit to Tk 2 lakh



Staff Correspondent

In a major change in the next year's budget, the government yesterday withdrew the proposed 2 percent tax deduction at source on post-paid and pre-paid mobile phone bills.

Isn't it time to go beyond the ad hoc . . . ?

- Create a joint task force comprising representatives of the Ministry of Finance, the Ministry of Post & Telecom, the Ministry of ICT, the National Board of Revenue and representatives of the telecom operators to study the impact of different forms of taxation on the prevalent business model and devise a plan for a long-term, stable revenue mechanism that will minimize the impact on investment by operators and ensure stable revenue flows to government.

Mobile industry contributions to exchequer

	Amount in BDT millions	% of government revenue
2003	9,400	2.5%
2006	33,200	5.8%
2009	53,400	6.8%
2011	83,000	8.9%

Source: AMTOB, 2012

REDUCING REGULATORY RISK

Reduce regulatory risk . . . Market entry

- Build on recently concluded license-renewal debate to establish coherent market entry-exit policies
- Model: Pakistan licensing policies of 2003
 - Emphasized transparency and predictability
 - Resulted in all operators being brought to a level playing field
 - Renewal handled in exemplary manner
- But market-entry policies are incomplete without market-exit rules

Reduce regulatory risk . . . Market exit

- Who can best decide number of suppliers? Not Minister; not regulator; but the market
 - Transparently assign as many licenses as resources (spectrum) permit in blocks adequate for purpose (minimum of 5MHz for 3G, 10Mhz for 4G); no point in fragmenting → increasing costs
 - Allow secondary trading so operators can find the optimum distribution of spectrum
 - Create orderly exit mechanisms (ideally, known at time of entry), so that market can settle at optimum level
 - Includes rules on spectrum, secondary trading is a solution
 - Also safeguards for consumers

Reducing regulatory risk. . . Scope of licenses

- E.g., proposed VAS licensing framework of 2012 brought into doubt the wisdom of investing in services and applications
 - Not implemented, but not withdrawn either → uncertainty clouding investment

Reduce regulatory risk . . .

Spectrum

- Spectrum is the most critical input in providing wireless broadband access
 - Spectrum refarming is central
 - All users of spectrum must understand that assignments are not for ever; that countries that are technology-takers must realign their spectrum assignments periodically
 - Difficult process; I did it in 2002-04 (900 and 1800 bands)
 - Requires extensive consultation with all affected stakeholders
 - Lots of listening and talk
 - Need to use proceeds of auctions to compensate “losers”
 - Operators must be able to plan and to mobilize resources
 - Not just a question of auctions versus administrative allocation
 - Auctions are best, but unless embedded within a credible **roadmap**, they will distort bidder’s incentives

The Daily Star

Your Right To Know
Sunday, February 10, 2013

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LATEST NEWS Govt creating smokescreen to hide failures: Fakhrul

Friday, May 4, 2012

Business

Mobile operators rearranging frequencies

Abdullah Mamun

Four mobile operators last night started rearranging their frequencies in 1,800 band, which will improve their services, reducing call drops and making their networks more efficient.

The telecom regulator is leading the countrywide frequency rearrangement activities of Grameenphone, Banglalink, Robi and Airtel.

Zia Ahmed, chairman of Bangladesh Telecommunication Regulatory Commission (BTRC), the regulator, said the allocation of valuable frequency in 1,800 band was done in a scattered manner in the past.

But after the rearrangement, a total of 15.6 Mhz frequency worth more than Tk 2,000 crore will be saved, which will be sold during 3G auction, he said.

The rearrangement process has been initiated with the consent of all the operators, Ahmed added.

The operators now will be able to use their frequency more efficiently and economically, he said.

After the rearrangement process, the quality of services of the mobile

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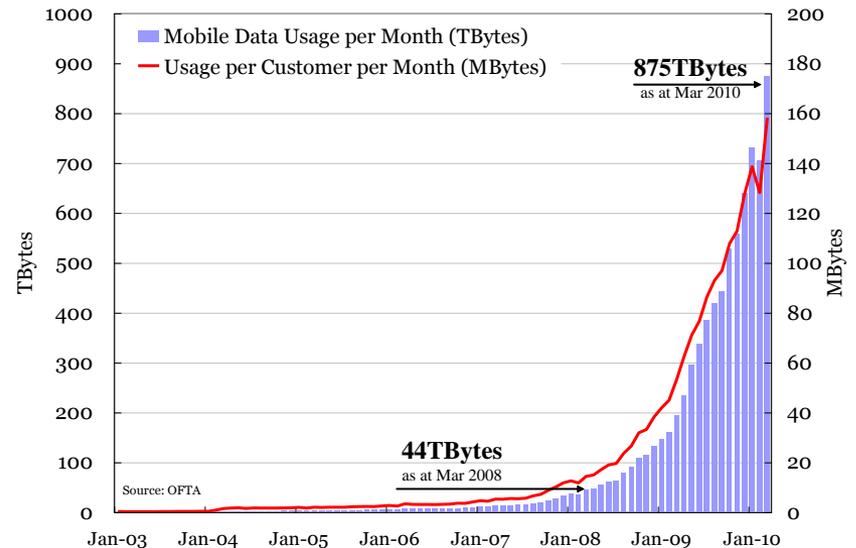
Reduce regulatory risk . . . Road map

- Best way to improve spectrum regulation is to set out **principles** and a schedule for reforming actions (known as roadmap)
 - Make principles explicit and include time (when specific blocks will be reformed/made available)
 - To the extent possible, reduce technology bias in spectrum assignments: e.g., why should 900 band be limited to specific technology?
 - Change and certainty
 - All should recognize that nothing is permanent in spectrum assignments
 - But change should be predictable and the path decided through extensive consultation based on principles

Spectrum is a critical resource

- Data use is increasing fast
- Essential to release 3G and 4G frequencies in time
- In the region India and Pakistan were slow to do so and are paying the price
- Only when the capacity is available are smartphones and tablets justified
- It is only when capacity & devices are available that the potential of the Internet can be realized

20x increase in data volumes over Mobile networks in Hong Kong



Government needs revenue.

Policy choice: Now or over time?

- Take as much as possible upfront OR create conditions for continuing revenue streams?
 - Sri Lanka has held a few auctions, but fees have been relatively low (e.g., 5th mobile license to Airtel went for USD 4 m); but telecom is one of the biggest contributors to Treasury: USD 71 million in 2011
- Auctions are the best way to allocate scarce resources
 - They can be designed to encourage rapid rollout OR optimize revenue

Policy choice: Tech neutrality or revenue optimization?

- Tying specific frequencies to specific technologies is inefficient
- But if government allows, say, the 900 MHz band to be used for 3G or 4G, it may not have enough bidders at 3G auction → lower revenue yield

Possible solution

- Lift technology restrictions on “2G” bands as part of 3G auction
 - What one gets in 3G auction = 5MHz of new spectrum + lifting of technology restrictions on spectrum currently held

How to improve regulatory environment short of legislative changes

- Focus on **legitimacy** = acceptance in the eyes of others
- Sources of legitimacy
 - Expertise
 - Transparency
 - Fair procedure, including consultation
 - Willingness to explain reasons for actions
 - Openness to review and appeal

Expertise → legitimacy

- Requires improved hiring procedures
 - Focus on those willing to learn; continual need for new knowledge
- Ability to hold and motivate good people
- Consistent focus on training
- Now, both Ministry and BTRC require expertise
- Without expertise, little basis for ex-ante, sector-specific regulation
 - But state of markets and technology are such that individual expertise alone is not enough

Procedural legitimacy

- When things are done the right way, more likely that outcomes will be seen as right
- In addition, serves to appeal-proof decisions
- Also permits regulatory authorities and staff to draw from a range of information sources and to assess the veracity and value of information

Explain, explain

- Regulators should behave like idealized bureaucrats, not as quasi-judges
 - Reasons for decisions must be given to
 - Stakeholders
 - General public via the media

Appeal and review

- Appeal and review should not be seen solely as causes of delay
- To the extent appeals and reviews can be done expeditiously, they relieve the pressure on the regulatory agency

Digital Bangladesh by 2021

- The vision and potential exist
- Vision can be realized even sooner than we think
 - If we base actions on realistic understanding of what kind of infrastructure can support the vision
 - Wireless is the dominant access technology, here as well as in developed countries
 - Mobile operators are partners, not those to be commanded and controlled
 - If we make incremental improvements in policy and regulation to enable greater investment
 - More than in “black-letter” law, in day-to-day practice