Indian Telecommunications Interconnection Regime

Seminar on Interconnection in Mexico
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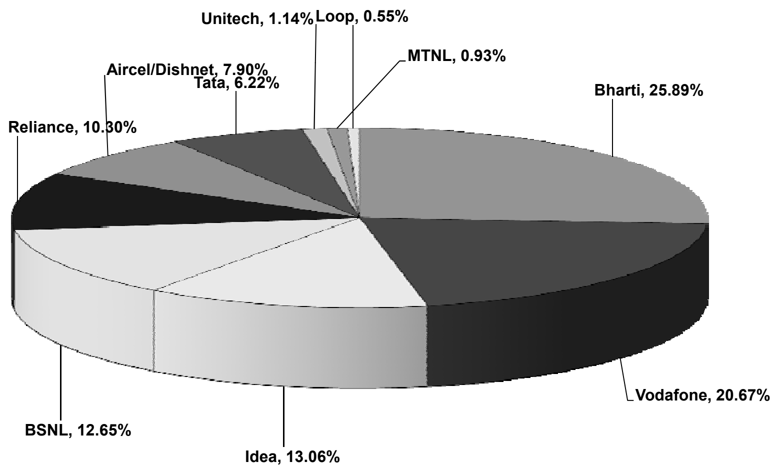
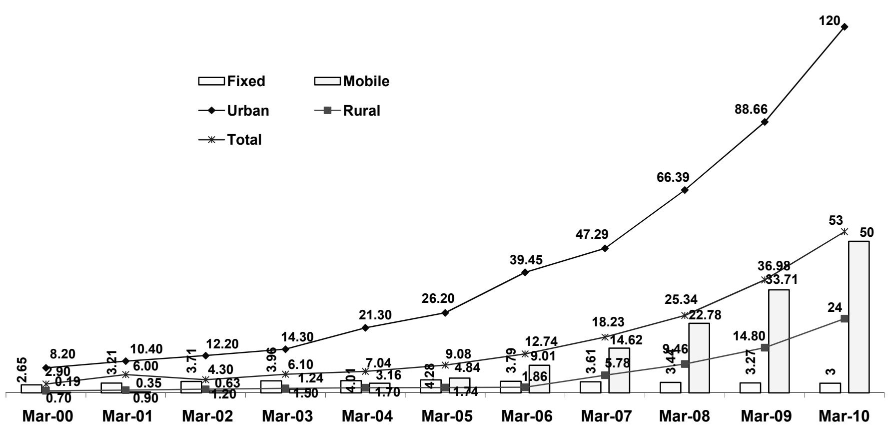
BACKGROUND

- "Mexican Interconnection regime… limits competition between operators; increases final prices; and restricts growth in the sector."
- "Performance of the Indian telecommunications sector in the last 7 years (2003-10) since the inception of regulated Interconnection regime has been impressive".
- 671.69 million telephone connections as of June 2010, world's second largest market after China
- Competition has been key to growth and innovation in the telecommunications market and interconnection has been the key ingredients for the viability of such competition

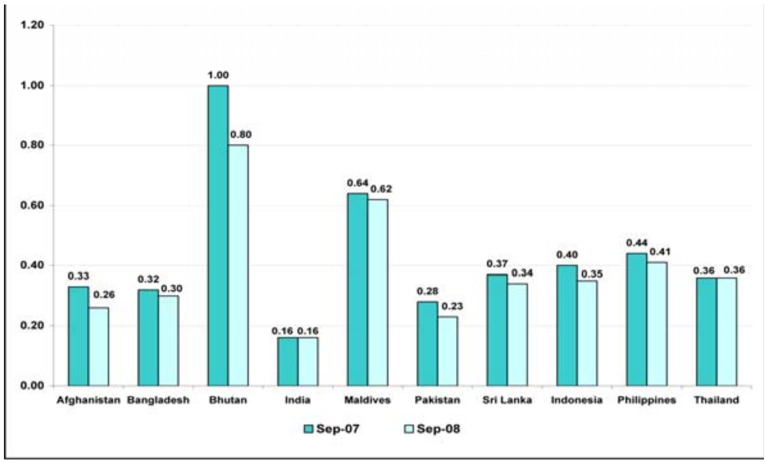
MARKET STRUCTURE (WIRELESS)



TELEDENSITY

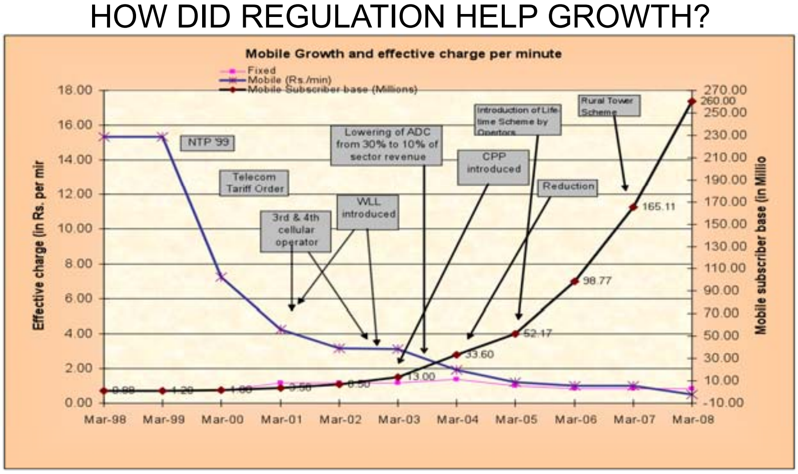


EFFECTIVE COMPETITION



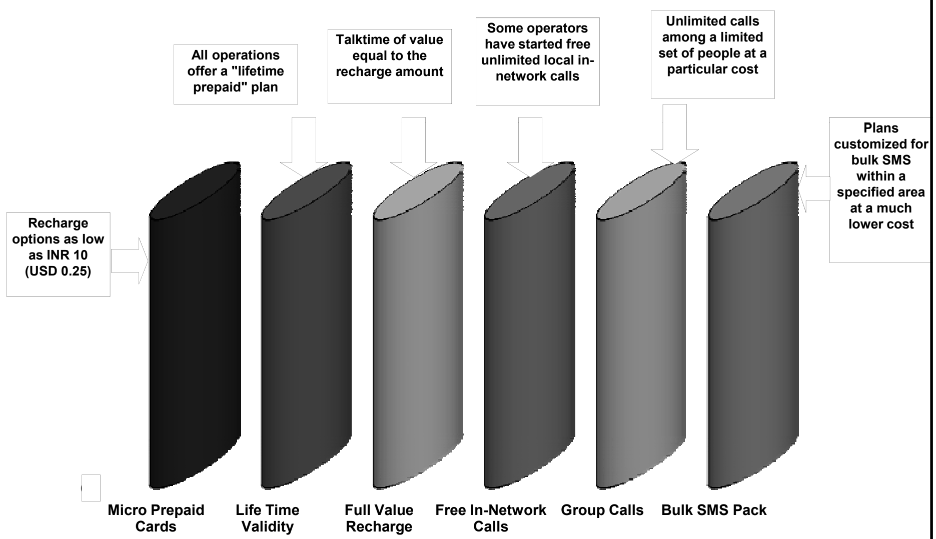
Low HHI for India: Effective Competition

HOW DID REGULATION HELP GROWTH?

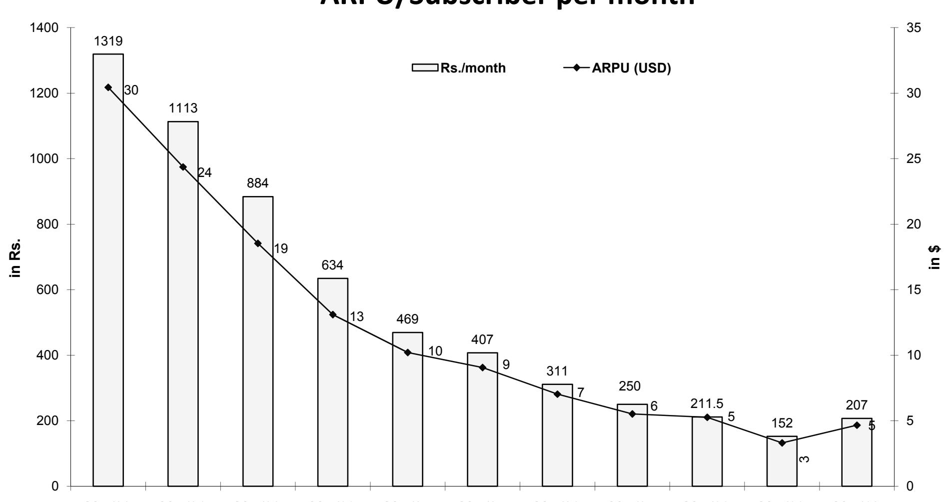


- Telecom Regulatory Authority of India (TRAI) facilitated huge reduction in forborne tariffs in 2003-05 through competition
- Measures indicated in boxes – and by moving from cost plus regulation to competition regulation in 2003
- Simplicity, resilience and implementability of a cost-based IUC regime that TRAI put in place had major role in the growth of the sector in terms of infrastructure, competition, revenue and customer welfare and innovative tariff plans

INNOVATIVE TARIFF PLANS



ARPU/Subscriber per month



Important Policy and Regulatory milestones in Indian telecom sector

New Telecom Policy – 1999	The service – providing arm of the Department of Telecom separated from the policy making and licensing functions
	Creation of corporatised BSNL in October 2000
	BSNL/MTNL allowed to enter as the third cellular service provider in all circles
	National long distance market thrown open for competition
	Wireless Planning and Co-ordination Committee created to review and enforce spectrum allocation policy
Lowering the Licence fee – 1999	Government changed the prevailing fixed annual licence fee to a revenue share regime
Interconnect Usages Charges (IUC) regime – 2003	IUC regime of 2003 specified the interconnect charges clearly
	Paved the way for a calling party pays (CPP) regime – subscriber no longer had to pay for incoming calls, making the mobile phone highly affordable to the low usage customers who mainly used it for incoming calls
	The termination charges made uniform for all types of calls – cellular mobile, fixed and WLL (M)
Unified Licence	Allowed an operator to provide fixed and/or mobile service using any technology
	The objective was to allow the exploitation of technological developments to the fullest extent to provide new applications and services
	The first phase of implementation, the Unified Access service licence, was readily adopted by most of the major operators
Lowering of Access Deficit Charge	Feb 2005: The per minute ADC on domestic long distance calls reduced by up to 60%, and the ADC on international calls by up to 40%
	March 2006: The per minute ADC for domestic calls replaced with a revenue share fee of 1.5% of non-rural (wireline) AGR, coupled with a sharp 60% drop in per minute ADC on international calls
	March 2007: ADC on percentage revenue share reduced to 0.75% from 1.5% of AGR. Per minute ADC on outgoing International calls reduced to zero, and on incoming International calls reduced to Rs. 1.
Lowering duty of telecom equipment - 2003-05	Union Budget 2003-04 cut the customs duties on telecom sector capital goods from 25% to 15% and on cell phones from 10% to 5%
	Union Budget 2004-05 exempted imports of capital goods for manufacture of mobile handsets from customs.
Roaming Charges	Jan 2007: Roaming rental reduced to zero. Reduction of roaming tariffs to the extent of 22%-56%
Port Charges	February 2007: Port charges reduced by 23-29%.

Interconnection the lifeline of telecommunications

- The Telecommunication Interconnection (Charges on Revenue Sharing) Regulation 1999
  - ✓ Port Charges and Leased Line Charges, which are the recurring amounts payable for the set-up costs
  - ✓ For Usage Charges, revenue sharing arrangements for basic services and cellular mobile services were specified
  - ✓ Interconnection between fixed service providers, revenue sharing for local calls was on the basis of bill and keep
  - ✓ For national long distance (NLD) calls, revenue sharing was in the proportion of 40:60 for the originating and terminating service provider, respectively
  - ✓ For international long distance (ILD) calls, this proportion was 45:55

PROBLEMS

- Majority of calls were likely to terminate in the incumbent’s network, kept a larger proportion of the call revenue
- Mobile operators had to follow the receiver party pays regime did not get any revenue share for NLD and ILD calls
- Neither allowed them to cover their customer acquisition costs nor take into account additional revenue that such calls generated for the incumbent
- All calls from one wireless carrier to another had to be interconnected through the state owned incumbent

PROBLEMS

- In 1999 TRAI attempted to introduce CPP regime
- Attempts to reverse the high interconnection charges charged by the incumbent and RPP regime challenged
- Court interpreted that access charge payment as proposed in the CPP regime was not under the purview of the regulator
- Regulatory environment on interconnection, was highly unsatisfactory in this period
- High interconnection charges created barriers to entry and it is quite possible it induced inefficient bypass
- TRAI amendment ordinance of 2000 restored TRAI's powers relating to tariffs and interconnection which had earlier been deemed by courts to be limited
- CPP was introduced in 2003 as part of a tariff rebalancing exercise
- NTP 1999- long distance traffic can be carried by any private operator not necessarily incumbent

Subsequent Developments

- Telecommunication Interconnection (Reference Interconnect Offer) Regulation, 2002
- RIO was required to specify

✓ IUC for origination, transit and termination based on unbundled network elements consumed for carriage of calls based on minutes of usage (MOU) on a fully allocated cost model

- Ushering in multi operator environment the revenue sharing arrangements for usage charges were replaced by cost based interconnection usage charges
- TRAI has considered it important to specify an IUC regime that would give greater certainty to the Inter-operator settlements and facilitate interconnection agreements

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Subsequent Developments

- The Telecommunication Interconnection Usage Charges (IUC) Regulation, 2003 (1 of 2003) dated the 24th January 2003
- IUC was determined on the basis of the cost of unbundled elements both for local and long distance charges based on MOU as given by BSNL
- Fully Allocated Cost (FAC): The idea of FAC is to distribute the total cost that the service provider incurs amongst the services that it sells (Easy to develop and understand)
- Calculations were based on relevant OPEX divided by the total minutes of use

Subsequent Developments

- Based on accounting data and is easy to audit by specialists
- October 2003 (Principal Regulation)

✓ FAC, top down model
✓ Historical average costs from audited accounts of BSNL for FTC and of all mobile service provider for MTC were used
✓ From operational costs the cost components not related to call carriage were removed
✓ Marketing expenses were not allowed
✓ VAS revenues were fully deducted as they were considered important revenue source for recovering cost
✓ The sum of IUC charges for origination, carriage and termination served as an implicit flow for the retail tariffs
✓ Any tariffs offered by a service provider below this level would raise suspicions about the intention of such pricing strategy because these three components reflect the underlying cost of providing services

Subsequent Developments

- Notified a revised IUC regime on 23rd February 2006, which has been implemented from 1st March, 2006
- TRAI decided to put a ceiling on carriage charges while other IUC components were kept same
- Provided a strong basis to the operators to reduce the long distance tariffs as well as to pave the way towards more and more usage of the long distance networks

ADC in IUC

- Access Deficit Charge (ADC) to compensate the incumbent for below cost wire line tariffs to promote universal service
- Quite out of line: widespread adoption of wireless technology
- Regulatory authorities slow to recognize that this tool was losing its relevance in the "new order”
- Instituted to allow the incumbent time for adjustment during the period of transition
- ADC phased out and merged with Universal Service Obligation (USO) regime from 2008-09
- Interconnection charge should be cost-based and unbundled and that inclusion of ADCs imparted an element of non transparency and discrimination

Termination Charge Regulation

- Termination charge regulation in India has been widely lauded by many jurisdictions in the world for its uniqueness
- Some of the major features of the uniqueness of termination charge determined by TRAI:
  - ✓ Regulator recognised that termination was a monopoly, termination charge was cost based and that too down to the bones..
  - ✓ Termination charge was uniform across networks - neutral to technology (October 2003 Principal Regulation)
  - ✓ Termination charge was identical to all types of calls viz. local call, national and international long distance call and also for calls by national and international roamers

CPP Regime and lowest termination rates encourage aggressive competition at origination of calls hence lowering of tariffs by operator

June'04

Name of the country	Call charge per minute	Minutes of Use per subscriber per month	ARPU (Average Revenue Per User)	Termination rates per minute	
				Fixed	Mobile
	US$	Minutes	US$	US$	US$
Australia	0.24	159	43	0.016	0.152
Brazil	0.11	92	11	0.020	0.080
China	0.04	261	10	0.010	0.025
Switzerland	0.45	119	59	0.017	0.163
Japan	0.33	156	63	0.022	0.130
India	0.04*	309	11	0.007	0.007

- * Has come down to 0.01 in 2007 - lowest in the world
- Since the tariffs are low - there is huge unmet mobile demand in rural areas - only mobile towers have to reach. Now reaching fast in new USO scheme. • Some low end ARPUs being offered by operators are $ 4 per month and entry cost (handset price)$25

2009 REVIEW

- Reasons
- ✓ massive growth in number of subscribers and reduction in tariffs
- ✓ calling pattern, the total traffic and its dispersion also change
- ✓ passive infrastructure sharing has brought about a change in the CAPEX/OPEX structure
- ✓ distortion of consumer choice; above-cost charges may distort consumer choice between making on-net calls and off-net calls and also between fixed and mobile calls if one of them has higher termination charge
- ✓ objectives of spurring growth, creating level-playing field and consumer welfare; new licenses had been issued in 2008

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FINAL REGULATIONS

- Allocating relevant OPEX for termination charges and leaving rental and origination charges under forbearance to cover rest of the cost incurred by the service provider
- Continue with symmetric termination charge
- ✓ has created a level playing field for all operators for all types of the services
- Raised the international termination charges 0.008 USD
- Retain the present ceiling on carriage charge 0.014 USD
- Reduce the transit charge to 0.003 USD
- Reduced the termination charge further to 0.004 USD from 0.006
- Symmetric Charges for 2G and 3G voice termination

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In Defense of FAC

- Maintain transparency
- Simple:

✓ charges are the relevant OPEX and Minutes of Use (MOU) handled by the network

- Direct regulatory costs of a detailed forward-looking cost regime may be significant: operators may hire engineers, economists and lawyers to put forward their views
- ***There is no guarantee that detailed cost estimation approaches will be accurate***
- ***If an approach has been established then motivation must be really strong to change it in the next review***

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Regulatory Philosophy

- Excessive charges would be detrimental to consumers
- 'Waterbed' effect, does not provide a justification for the structure of charges that would arise in the absence of regulation

✓ presence of high termination charges subsidising low prices for retail mobile services provides consumers with distorted price signals

✓ above-cost charges may distort consumer choice between making on-net calls and off-net calls and also between fixed and mobile calls if one of them has higher termination charge

- No asymmetric charges

✓ segment having higher termination charge might subsidize originating calls whereas the other segments would not receive such benefits

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COMMENTS

- Though arrived at an "acceptable" regime, process has been tardy
- Institutional responsibility solely with TRAI helped after 2000
- TDSAT in many of its observations has stated that interconnection is exclusive preserve of TRAI
- Business Model adopted by the operators was such that they did not press for the "waterbed" effect in the determination of IUC charges
- "Budget Telecom" Model with low ARPUs but high MOUs; since interconnection cost were 80% of the retail tariffs "lower" charges were "accepted"
- A liberal entry regime is an essential condition for instituting an interconnection regime *ex-ante* which results in *ex-post* competition

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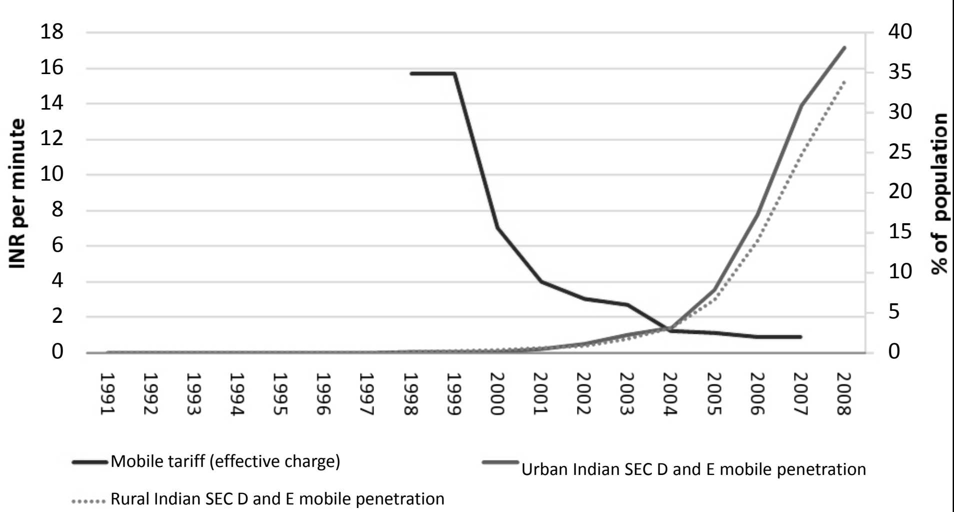
Low prices and greater participation by the poor (urban and rural)



FUTURE

- A further review possible as the “low” termination charges have been challenged
- Review IUC eventual migration to NGN in sight
- Some talk of finally moving to a “Bill and Keep” regime
- Emerging view: Bill and keep regime is competitively and technologically neutral and will allow uniform compensation for all kinds of networks
- Finally, the consultative process of TRAI has been successful in the evolving of a mutually agreeable Interconnection regime

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THANK YOU

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