

**Interconnect**

**Issues**



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# Importance of Interconnection



- **Cost & availability of Interconnection (IC) is a key factor in determining the structure and intensity of competition in a liberalizing market.**
- **IC has been internationally recognized as the single largest cost for new operators.**
- **TRAI too has recognized that “A fair & equitable interconnect regime is the bedrock of a multi operator telecommunications section. Interconnection between two networks is therefore the most critical regulatory issue in the Telecommunications Sector.”**

# Importance of Interconnection



- **Effective IC is a vital requirement for effective implementation of virtually all aspects of introduction of increased competition in telecom.**
- **Users need end-to-end services within an apparently seamless communication network. They want connectability & connectedness. Multiple telecom networks are ineffective and value-less if they exist in 'islands' or as stand-alone entities.**
- **Hence it is axiomatic that the entire telecom system of various networks must function as a single seamless system in order to have practical / tangible benefits to the end-users.**
- **IC is thus the key to defining the limits of a telecom services network and for deciding the structure and intensity of competition.**

# Need for Fair & Open Access

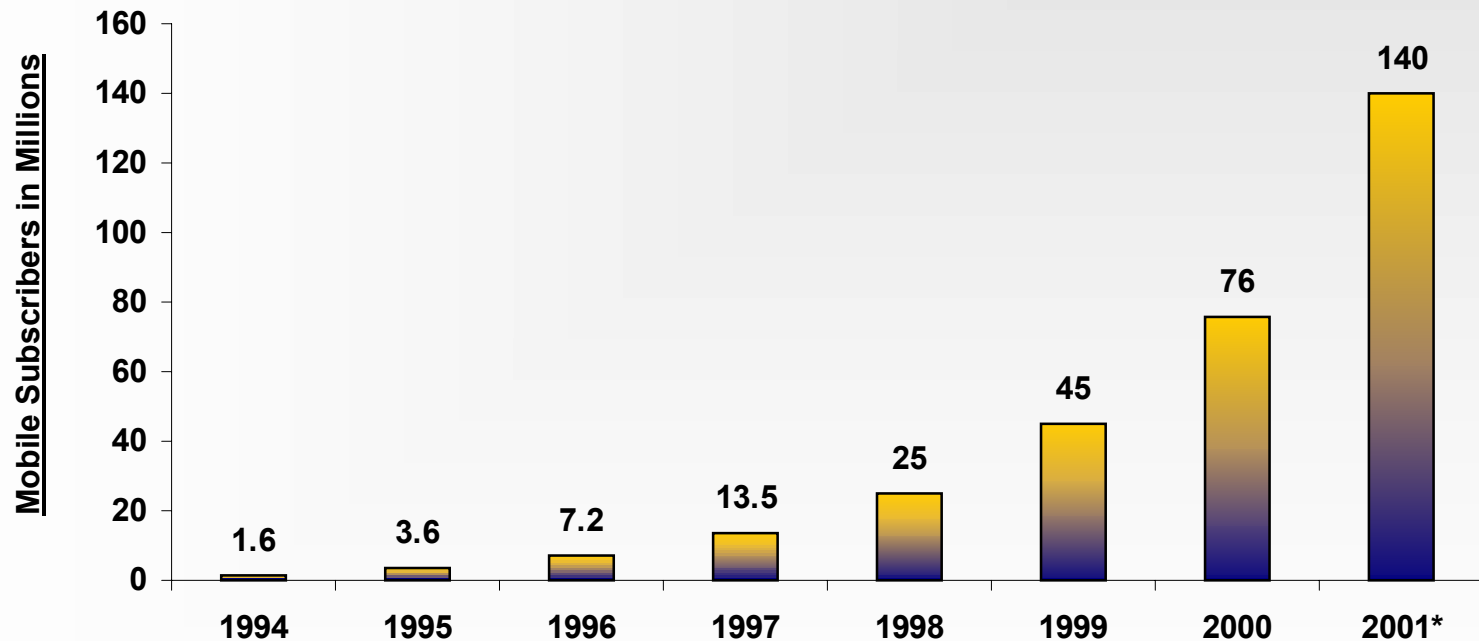


- The incumbent PTO (BSNL) has, over the past many years, put in place a massive nation-wide telecom infrastructure.
  - In a capital deficient country in India, it is neither feasible nor desirable for the private telecom operators to replicate that infrastructure.
- Open access to the incumbent's infrastructure on fair, equitable & non-discriminatory terms, thus becomes a critical factor in the development of private telecom & the success of the Government's liberalization initiative.
  - By Government policy, BSNL must be mandated to provide collocation, leased line facilities, etc.

# IC Policies in China



The importance of IC on the growth of mobile services can be clearly seen in the case of China. China in 1998, transformed its highly restrictive mobile –fixed IC arrangement into a pro competitive one.



The impact of this transition was clearly & substantially visible on the mobile market, which really took off after 1998.

\* November

# IC Practices in India



- In India, IC is provided as per the September 1996 Administrative Orders of the DoT.
- Even after six years, private cellular operators do not have a formal IC agreement with the incumbent PTO.
- The cellular operators are operating under grossly inequitable IC arrangements, which is having a seriously adverse impact on the businesses of private operators who cannot afford this interminable delay.

# IC Recommendations in GATS Ref. Paper



- Public availability of procedure for negotiations.
- Transparency of arrangements.
- Interconnection with a major supplier will be ensured at any technically feasible point in the network. It must be provided :
  - Under non-discriminatory terms & rates & of a quality no less favorable than that provided for its own services, subsidiaries or affiliates
  - In a timely fashion
  - At cost oriented rates – that are transparent, reasonable & sufficiently unbundled so as to not pay for network components or facilities that are not required .
  - Upon request - at points in addition to the network termination points, subject to charges that reflect the cost of construction of necessary additional facilities.

# India's Commitments at WTO



- India has filed a schedule of specific commitments on IC.
- However, even these specific commitments are not being met by BSNL.
- 1. India committed that Interconnection would be ensured and would be of a quality no less favorable than that provided for its own like services or for like services of non-affiliated service suppliers or for its subsidiaries or other affiliates.
  - Investors need specific assurance that this is being followed with BSNL's Cellular services.
- 2. Further, India has also committed that the major supplier will make publicly available either its interconnection agreements or a reference interconnection offer –
  - This is not being followed.

# Fair Bipartite IC Negotiations Impossible



- It is extremely important to appreciate that :
  - BSNL / MTNL) control over 99% of the bottleneck IC facilities & the end market.
  - Have no market / economic incentive at all to interconnect.
  - New entrant has nothing to offer the PTO at the negotiating table except the directives of the Regulator or the dictates of the Licensor.
- The incumbent is thus actually being ordered to interconnect against its perceived self-interest. Hence it has a powerful incentive to create conditions that make it as difficult for the new entrant as possible.

# Fair Bipartite IC Negotiations Impossible



- The inherent inter-dependence of networks,
- The need of end-users for connectability & connectedness &
- The inherited overwhelming monopoly power of the incumbent PTOs who already have comprehensive networks / infrastructure with them,
  - ... Makes conditions for negotiations between the new private operators & the PTO as lopsided as possible.

# Fair Bipartite IC Negotiations Impossible



- Protracted negotiations with inordinate delays are a well-known technique of incumbent PTOs for imposing unbearable costs, inefficiencies and uncertainty on the new entrants.
  - Time is on the side of the incumbent PTO & this time is of the essence for the survival of new entrants.
  - A pro-active government policy & regulation is absolutely essential to ensure timely & effective IC that ensures fair competition and serves public interest.
- Regulators need to adopt an ex ante approach for laying down unambiguous IC guidelines based on which new entrants can negotiate with PTOs.

# BSNL Apprehensions are Unfounded



- **BSNL will NOT lose revenues.**
  - Cellular traffic is in nature of incremental traffic.
  - International experience shows that volume growth -encouraged by lower prices will sustain earnings & in fact open up new sources of revenues (inter-carrier services).
- **Universal Service will NOT be affected**
  - A transparent USO mechanism is being put in place
- **BSNL network will NOT suffer technical harm.**
  - Adequate availability of POIs will spread traffic & avoid congestion of networks.
  - International evidence establishes that IC at any technically feasible level of the fixed network has driven the growth of both fixed & mobile services.
- **NLDO traffic will NOT be adversely affected.**
  - NLDO guidelines do not prescribe at level interconnection.
  - Customer pre-selection implies IC at local exchanges.
  - NLDOs need not interconnect in line with BSNL's routing plans.

# Physical Aspects of IC



## International Practices

- Survey of several telecom regimes in Europe, America, Africa & Asia-Pacific,
  - Majority had IC at all local switches & at any level of switching hierarchy and / or at every technically feasible point of interconnect.
    - .... Australia, Canada, China, France, Germany, Korea, Netherlands, South Africa, Uganda, USA, Venezuela

## Indian Scenario

- TRAI determination of April 25, 1997 too, endorsed international practices and provided that subject to technical integrity of the network and technical feasibility, DoT (BSNL) must grant both way connectivity at POIs & also any number of POIs & multiple GMSCs to the cellular operators, as they may require.

# Physical Aspects of IC



- TRAI determination of 8/1/2001 provided for POIs only at all Level I & Level II TAXs.
  - Despite multiple clarifications by TRAI that the determination was to be liberally interpreted and progressively applied, BSNL is adopting a rigid & literal interpretation of the same.
  - The impact of inefficient & sub-optimal IC will :
    - Impose significant costs on CMSPs.
    - Lead to under-utilization of existing infrastructure.
    - Increase pressure on fixed networks as large amounts of traffic will need to be backhauled to designated POIs
  - This in turn, would result in :
    - Traffic congestion & lower QOS.
    - Higher costs for end users.
    - Suppressed demand for cellular services.
- Government / Regulator must mandate POI Regime as per international best practices

# Optimal & Effective Routing



- **Effective & Optimal Routing of calls is essential to ensure optimal utilization of existing infrastructure & delivery of most affordable services to end-consumer.**
  - **National Routing Plan formulated by DoT in 1965 - a time when there were no private sectors players in telecom. Private operators cannot be constricted by a rigid routing plan, framed in the age of network monopoly.**
  - **New private operators are being disadvantaged - Switching hierarchy imposed on them by the incumbent is leading to ineffective routing & higher call charges.**
  - **Need to urgently review the National Routing Plan after open & transparent consultations with all operators.**
- **India should emulate international practices in mobile network interconnection & follow the principle of near-end collection & far-end delivery to ensure maximum benefits to users.**

# Economic Aspects of IC



- India is following a retail price formula based on long distance tariffs for IC pricing.
- Indian long distance tariffs were till recently, amongst the highest in the world. Despite sharp decline in long distance tariffs - these are still significantly above cost.
- CMSPs pay as much as 95% of this retail tariff – No parallel anywhere in the world.
- The impact of the above formula is to :
  - Increase the cost of cellular usage.
  - Distort national market because of high costs of roaming.
  - Limit the role that cellular could play in increasing tele density.
- Use of STD tariffs as proxies for IC charges allows the incumbent to (ab)use his bottleneck power to generate monopoly profits – at the expense of the consumer & the country's telecom objectives.



# Economic Aspects of IC



- **Cost based IC is a rational & sound policy approach - followed in most telecom regimes.**
  - **A survey of several telecom regimes in Europe, America, Africa & Asia-Pacific reveals that almost all countries, offer cost based IC.**
  - **However, developing & sustaining a cost based approach to IC is problematic as Incumbents do not separately cost every element in their networks.**
  - **Thus, adopting a cost-based approach could well be used as a delaying tactic.**
  - **This could be extremely detrimental for new operators who cannot afford to wait till elaborate costing data is made available.**
- **Regulator must adopt an outside-in approach & immediately put in place benchmark international IC practices from comparable telecom regimes, for example, Malaysia.**

# Single IC Regime for Access Charges ?



- IC charges must be proportional to work done.
  - Both fixed & cellular service utilize identical network elements for origination / termination of a call on the BSNL network.
  - No justification for CMSPs to pay higher IC charges.
  - It may therefore be considered desirable to put in place a single IC regime for all access providers.
- Subsidy for local access may be recovered through the imposition of a transparently determined Access Deficit Charge (ADC) on NLDOs & ILDOs.

# Direct Inter-circle Connectivity.



- Direct inter-circle connectivity is a mandate of NTP 99.
  - It was a part of the structure of the opening up of national long distance & should have been introduced once NLD segment was opened up.
  - Implementation of this mandate of NTP 99 would immediately facilitate :
    - **More Affordable Long Distance Services**
    - **Optimal Utilization of Existing Infrastructure**
    - **Creation of an overlay infrastructure**
    - **Reduced Congestion & Improved Call Quality**
- Implementation of this provision of NTP 99 will give the telecom sector a jump-start to achieve the affordability & tele density objectives of NTP 99.

# Technical Aspects of IC



- Compatible technical standards must be established & maintained.
  
- Experience shows that this is not a problem area in modern telecom systems as technical issues can be readily resolved.
  
- PTOs however try to misuse this aspect to block progress.
  - – e.g. prohibition of digital cross-connects is a retrograde action.

# Service Aspects of IC



- Incumbent PTO must specify & ensure both levels and grades of service.
- Incumbent PTO must ensure availability of all facilities & services that are necessary in customer interest – e.g. level one access to emergency services, call forwarding, etc.
- Non-compliance with the above should attract damages to be paid by defaulting party.

# Flexible Approach to IC



- **Interconnection is a dynamic Issue – IC policies cannot be cast in stone.**
  - **Inflexible & rigid IC terms will stifle the growth of the telecom services market.**
  - **Need to evolve an effective process for decision making for issues that will arise on a regular & continuous basis.**
  - **Process should incorporate & address interests of all affected parties.**
- **Regulator must develop information & data needed to narrow down differences between various parties & provide a sound & logical basis for taking informed decisions in public interest.**

# Conclusions & Recommendations



- For India to emulate the Chinese growth model in mobile services, it is imperative that the Government / Regulator immediately :
  1. Ensure Compliance with commitments at WTO.
  2. Adopt an ex ante approach towards IC policies & guidelines.
  3. Ensure POIs at every technically feasible point in the network.
  4. Review National Routing Plan in line with international practices.
  5. Adopt an outside-in approach & immediately put in place benchmark IC arrangements from comparable telecom regimes.
  6. Adopt a Single IC Regime for Access Providers. Recover Access Deficit through an ADC on NLDOs & ILDOs.
  7. Allow direct inter-circle connectivity.
  8. Adopt a flexible & dynamic approach towards IC arrangements.



**THANK YOU**

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