Access Deficit Charge-Reckonings and Ramifications

Ironically, the rationale for access deficit charge stems from incomplete tariff rebalancing. In a two part telecom tariff pricing followed by TRAI, capex of the access part of the fixed network has to be recovered through rental and opex and the capex of the rest of the access network through usage (call) charges. But the capex of the access part of fixed network which constitutes about 70%-80% of the cost of the network could not be fully covered by rental alone as rental is priced below cost, considering the factor of non-affordability by the vast percentage of the population. With the result, the basic fixed service operator incurs access deficit .This was earlier covered by internal cross subsidies from long distance call rates being priced above cost. But the competition in the long distance network has driven down the long distance tariff even below the rebalancing level and at the same time the fixed basic service operators would not opt to increase the rental to the required level to cover up access deficit. It has created a sort of catch-22 situation to the fixed basic service operators.

The question is how to factor in this access deficit in telecom pricing policy. The access deficit has to be covered by way of access deficit charge (ADC) to be paid to the basic service fixed operators. As per TRAI's reckoning, the ADC per fixed line would be Rs 225 and in aggregate terms, it would be a staggering figure of Rs13000Cr.This reckoning of ADC includes access deficit on account of calls originating from and terminating at access part of the network for which portion pricing is below cost, cost of free calls and cost of calls made within the distance of 0-50 Km which are priced below cost. The ADC so reckoned will be loaded on interconnection user charge (IUC). While the rationale for ADC is clear, its reckoning seems to have its vagaries depending upon the cost data base and the methodology used. For instance, based on the balance sheet data of BSNL for the year 2001-2002, average cost based rental was worked out as Rs 425 per month without discounting it for the lines/ VPTs supported by the USO (Universal Service Obligation) fund.(see Box-1[1]) This cost based rental was derived out of (CAPEX+ Depreciation) per line reckoned from BSNL data. Weighted average cost of capital of 13.78% was applied on capital base to get annualized CAPEX and depreciation per DEL was reckoned on actual depreciation figure in the financial data for the year 2001-2002. In its consultation paper on tariffs for basic services 2002/3, TRAI considered/suggested ARE (Annual Recurring Expenditure) approach to reckon cost based rental. The suggestive ARE was 22.7% covering both capital and financing charge recoveries. Had we applied this percentage of ARE to the capital base as worked out from the financial data for the year 2001-2002, the cost based rental would work out to Rs 303 per month. (see Box-2[2]) Here also, it is worthy to note that the assumption of 22.7% as ARE implies pay back period of even less than five

[1] Source: Telecom Regulatory Authority of India. *The Telecommunication Interconnection usage charges (IUC) Regulation, 2003(1of 2003*

[2] Constructed from TRAI data using ARE of 22.7% assumed by TRAI in its consultation paper on tariifs for basic services.

years to recover both capital and finance charges. It is a moot point whether this pay back period implied is in conformity with the average life of the various assets constituting fixed access network. This apart, if the pay back can be liberalized little long, it will have impact on ARE and in turn on cost based rental. Here, more than the issue of two different numbers of cost based rental, there exists some infirmity in the reckoning of cost based rental. Considering such infirmities, instead of simply relying on the cost data of the incumbent operator, TRAI has also constructed a bottom-up model in its IUC reckoning to factor in efficiency considerations. But it is not clear whether at the time of actual ADC reckoning, efficiency factor has been taken in to consideration.

Balance sheet approach- Box1

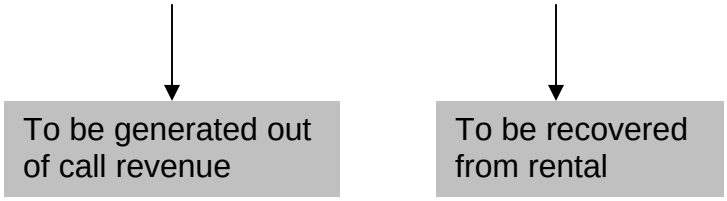
a)Number of DELs as on 31-3-2002	: 3.3218498Cr
b)Capital Employed (Net Block+ Capital Work-in-Progress+ Net working Capital)	: 66462 Cr
c) WACC (weighted average cost of capital)	: 13.78%
d) Annualized Capex (=b*c)	: 9158 Cr
e) Capex per line [= d/a] (in Rs)	: 2757
f) Depreciation per line (in Rs)	: 2639
g) (Capex+ depreciation) per line (in Rs)	: 5389
h) (Capex+ depreciation) per line attributable to telephone service(95%) (in Rs)	: 5120
i)Cost based rental [=h/12] (in RS)	: 425

ARE Approach (Box-2)

a) Number of DELs as on 31-3-2002	: 3.3218498 Cr
b) Capital Employed	: 66462 Cr
c) Capital employed per line [= b/a] (in Rs)	: 20007
d) Capital employed per line in access network [80%of c](in Rs)	: 16006
e) ARE	: 22.7%
f) Annualized rental [e*d} (in Rs)	: 3633
g) Cost based rental per month (in Rs)	: 303

The high point of the above two reckonings show that TRAI has followed value based tariffs by factoring in both cost of equity and cost of debt in the form of WACC (Weighted average cost of capital).

Economic
Value Added (EVA) = EBIT(1-t) - (WACC*Capital Employed)
= EBIT - (WACC*Capital Employed) assuming t=0
=EBDIT- [Depreciation+(WACC*Capital Employed)]



While seeking to recover capital related costs like depreciation and capital charge from the rental (Box1), there exists a non-match in the sense that depreciation and capital charge on the entire capital covering not only access network but also rest of the access network (long distanced network) is reckoned and loaded on rental. Perhaps a part of this cost can be loaded on local and long distance call charges in the proportion of capital components between access network and the rest of the access network.

Even assuming numbers on ADC can be correctly recast, as long as ADC charge is loaded on IUC, it has its adverse implications in terms of allocative efficiency, as the intra/inter network calls from fixed to fixed will have ADC component at both ends, whereas those between fixed to cell and vice-versa will have ADC component at one end only. To make matter worse, there will be no ADC component for the intra/inter network calls from cell/WLL (M) to WLL (M)/cell and from cell/WLL (M) to cell/WLL (M) on the reason that access pricing in this type of network calls is cost based justifying no ADC levy. Interestingly, intra network calls between fixed to cell and vice-versa do not have ADC component, much against the existence of the rationale for the levy of ADC in these cases also. All these various permutations and combinations in the levy of ADC connote a too prescriptive regulation that may interfere with the competition processes, in particular in the long distance sector that the TRAI itself has been striving all along to foster and encourage. Since ADC component will now be loaded on inter/ intra circle call rates, customers would not be finding themselves any better in the post-ADC scenario than they were in pre-ADC scenario in as much as high long distance rates they pay earlier in the form of internal subsidies to cover up access deficit will now be replaced by the long distance rates loaded with the ADC shared by many service providers.

The concerns in ADC regime will extend to cost distortions as well. In a fully allocated cost model, rental is expected to recover fixed cost towards access network and financing charges as implied, The shortfall in recovering this fixed cost is now sought to be recovered through ADC mechanism which implies that part of the fixed cost will now be converted into marginal cost in the light of the fact that ADC is loaded on interconnect pricing. The share of ADC can be as high as 80% of IUC charges, for instance in the inter-circle call in the distance range of more than 500 km and this ADC loading on interconnect pricing will now be passed on to retail pricing to the customers. It implies that all the emphasis on neat tariff rebalancing would be going through many adjustments to

the extent that it would cease to be tariff rebalancing. Another implication is that depending on the mutual criticality or urgency of the interconnect seekers, their network spread and traffic pattern, the recovery of shortfall in fixed cost of the local access fixed network will be more or less than what it should have been on the basis of the fixed network size. With the result, there may be cases of even the large fixed network operators paying out more than what they receive from the smaller network operators.

The rationale for imposing ADC is not just for covering access deficit. Since the rental is artificially kept below cost, it is also expected that the purchase of access will be kept affordable to a larger section of the society and at the same time without putting the basic service fixed operators to value loss on account of access price being below cost through ADC mechanism . Thus, from demand side, ADC is expected to be a pull factor to enlist more customers and spread out the tele-density. The moot point is that how far, from the supply side, ADC can be a push factor to enable entry of more access service providers ,including stand alone operators in this regard ,which otherwise would not be possible in as much as the access pricing is below cost. In view of the cost effective wireless options now available for access, the efficacy of ADC in giving fillip to the supply of more access will be doubtful. On the other hand, the pricing and costing implications in the long distance competition may be inhibiting to the further growth of the sector as the customers would not now be feeling any better than what they were before as argued out earlier. Thus, it in policy terms, will prove to be a lose-lose situation in the long run.

There exists a school of thought that ADC base has to be enlarged by covering the cellular-cellular and WLL-WLL services as well. No doubt that the cellular operators enjoy extensive externalities for having allowed access to the large wire line network and as such is obligated to pay for the same in the form of ADC. More over the recent phenomenon of fairly noticeable level of surrender of fixed lines in favour of cellular lines indicate the presence of substitutability between wire line and wire less (cellular) service segments. All this would make out a case that wider ADC base would ensure level playing field among all long distance players- be it wire line or wire less- in long distance competition which other wise would put cellular-cellular and WLL(M) to WLL(M) long distance service segments at advantageous position as compared to long distance service segments in Fixed to Fixed, Fixed to Cell/WLL(M) and Cell/WLL(M) to Fixed modes, The filip side is that the regulator would be increasingly interfering with the competition processes even in the sectors such as cellular where regulation has no role to play or for that mater to withdraw in the event of competition. It means that the telecom reforms process will be put on reverse gear on account of ADC.

No doubt, there can be a strong case for the imposition of ADC on the basis of affordability of access cost to the large section of the people to improve tele-density as envisaged in NTP-99. But the whole approach seems to be indirect. A direct regulatory approach could be on the lines of reducing access cost itself so that rental also will be aligned with access cost without need for the imposition of ADC. To minimize the cost of access, any regulatory strategy must

have two facets- technological and structural. An appropriate business model coupled with appropriate technology choice in this regard can bring down the access cost. This approach has all along been advocated by Prof.Ashok Jhunjhunwala, IIT,Chennai, This can be even on shared access basis as reported to have been experimented on party line basis in Warrangal by an NGO group. The benefit of this approach is that not only the larger issue of tele-density will be addressed, but along with that the subsidiary issue of ADC will also be tackled on sustainable economic basis. This would make purchase of access affordable and facilitate faster roll-out of network and growth of tele-density.

While minimizing the access cost, the differential between cost based price and affordable cost is minimized, if not eliminated altogether and in such an event the rationale for levying of separate ADC itself would not exist and on the other hand, even if there exists some justification for minimum ADC constituting a smaller percentage of total revenue of the fixed basic service operators, in particular incumbent operator, the same can be met out of the incremental revenue stream that fixed basic service operators can generate by tightening their internal processes and improving upon cost efficiencies or by providing new broad band services such as ADSL using the existing copper based local loop itself. In this context, it is interesting to note that the theoretical rationale for levying ADC lies on the principle of Efficient Component Pricing Rule (ECPR). ECPR is a method of interconnect pricing which states that the access cost is a sum of Total Service Long Run Incremental Cost (TSLRIC) and opportunity cost of losing revenue by providing access to long distance operators-both incumbent and competitors. Here the fundamental assumption is that the incumbent operator is the most efficient operator and as such any entry can take place only when the entrant is more efficient than the incumbent operator. In such an event, there exists a case for the opportunity loss of revenue to the incumbent fixed basic service operator by providing access at price below cost to the competitors. In the Indian context, this point has to be given due weighting notwithstanding the fact that estimation of ADC has to be firmed up on realistic basis before arriving at any decision on the choice of ADC regime

In this context, it is useful to have an idea about ADC regulation practiced in U.K. The context is also interestingly similar. [3]It would be appropriate to quote from the article on "The practice of access pricing: Telecommunications in the United Kingdom" by Prof. Tommaso M. Valletti, London School of Economics to relate the practices of access pricing in U.K to our situation and evaluate our responses.

"Entrants clearly targeted the most profitable segments. Since the interconnection deprived the incumbent from such extra revenues, interconnectors were supposed to compensate the opportunity cost of foregone profits to BT on a per-minute basis. These contributions were set proportional to BT's profitability of the service provided by the competitor. It is clear that the formula used by Oftel was influenced by the debate introduced by the efficient

[3] *The practice of access pricing: Telecommunications in the United Kingdom"* by Prof. Tommaso M. Valletti, London School of Economics, Prepared for the Economic Development Institute, The World Bank

component pricing principle (ECPR): ADC compensates for profits foregone by selling to competing operators instead of selling directly to customers.

Despite the specification of procedures, a fair amount of discretion was left to the regulator, so that ADC did not play a big role in practice. First of all, the DGT could decide which were the relevant overheads over which fair return could be earned. In second place, the DGT could also issue waivers (full or partial). The waiver criteria ,valid until 1997, applied to market shares of at most 10% and as long as BT's share in the market in question did not fall below 85%. Full ADC had to be paid only if an interconnector's market share exceeded 25%. Additional discretion was added since ADC could be lowered if BT did not achieve bench mark efficiency (using US data from RBOC). In practical terms, ADC had to be paid in a few years only for international calls" Finally the whole idea of contribution to ADC was given go-by in early 1996, when the rental constraint of RPI+2% was lifted for BT and it is significant to note that BT also did not raise rental and on the other hand chose to absorb AD by improving upon efficiencies as a long term business strategy of customer retention or acquisition as the case may be. Most importantly, structural solution holds key to tackle ADC issue in micro terms and tele-density issue in macro terms on sustainable basis. Competitive structure is not balanced in the Indian telecom sector. In the long distance telecom sector, competition exists in the form of multi-operator environment. But in the access network, by and large in many of the circles, it is still non-competitive situation. If we look at the fact that the market share of BSNL and MTNL put together is 98%, we cannot say that reasonable competition exists at access network level in match with the level existing in the long distance telecom network. It is only symptomatic that long distance call rates tumble down with out corresponding increase in rental causing AD but at the fundamental level, the co-existence of no-competition at fixed access net work and competition at long distance network lies at the root of tele-density issue at large and ADC in particular. The experiments in other countries like U.K throw clues that solutions were strived through structural route to introduce competition in the access network. As was done in U.K, cable operators could have been licensed to make entry in to access network. NTP-99 talks about the licensing of cable operators in local access network but so far no entry in this regard has taken place. We are not sure whether the pricing of access below cost has acted as a deterrent or the absence of asymmetric regulation in the Indian context in contrast to the OFTEL regulation at the time of entry of cable operators in access part of the network in U.K has deterred the entry.

Accounting separation is another key structural issue to validate the ADC. No doubt, accounting separation cannot have the same rigour as that of legal structural separation of various network elements, But if implemented seriously, it will give appropriate data base of costs underlying in various network elements and as such the regulator will have a chance to exercise a close look at the magnitude of ADC and benchmark it with respect to the best practices obtained else where. Interestingly, till the accounting separation is completed, the way access deficit is defined also needs a revised approach. In direct terms, access deficit is defined as the shortfall between cost based rental and actual average

rental (affordable) rental collected from the customers. The revised approach can be localizing access deficit from the wholistic consideration of costs and revenues as formulated under:

Access Deficit = actual rental + actual call charges including local and long distance - cost based call charges which includes normal profits- cost based rental - universal service funding

The advantage in this revised approach is that any subsidy that would have been still underlying in long distance call charges and not explicit due to non-implementation of accounting separation would be factored in and what is residual after netting actual revenue and cost elements and cost based revenue and cost elements would be by and large representing access deficit.

What can be feasible solutions? The complexion of access network has been undergoing gradual change with the introduction of wireless solutions such as WLL (M) and cellular. Access cost in wireless solutions is less than that observed in traditional copper based access solution. Thus basically ADC arises from the large legacy copper based access network. In this regard, it is important to recognize that this legacy access network has been here for quite some time and as such the expired life of this access network built up over the years has to be looked at in deciding the criticality and magnitude of ADC. A generic useful parameter can be capex per line over the years. It has been steadily declining over the years making out a case for dynamic approach to the reckoning of ADC and recovery to be made there of in years-to-come. Considering these facts, ADC can be charged but phased out over a period of average un-expired portion of the legacy copper network or over a period of three or four years as the case may be on adhoc basis simultaneously imploring the incumbent fixed basic service operator to improve upon cost efficiencies or to implement faster roll-out of new broad band services for value creation out of the legacy copper local network.[4] It would be useful to note that in Australia, it has been decided to phase out ADC over a period of four years.

Even if the above approach is considered, the nub of the issue yet is whether ADC has to be loaded on interconnection charge. For the reasons stated in previous paras , it would be economically sound to create a separate ADC fund on the lines similar to the creation of USO fund so that price distortion will not take place impeding competition process in network elements such as long distance segment where competition has already positively impacted the customers. The contribution to such ADC fund can be from different services including fixed, cellular and WLL seeking access at originating and terminating portions of the fixed access network. Incidentally, this would also place the competitors on even keel so far as factoring –in of ADC in pricing is concerned, provided the incumbent BSO is also required to do the same through accounting separation.

All said and done, in the Indian context a feasible resolution to the ADC issue can be on the following lines.

- ✓ Redefine the concept of access deficit taking in to account non-implementation of accounting separation yet.

[4] Source: www.dcita.gov.au - retail price controls of services provided by Telstra

- ✓ Recast ADC based on the existing cost data after due benchmarking/validation
- ✓ Do not load ADC on interconnection user charges
- ✓ Create ADC fund on lines similar to USO fund
- ✓ All access seekers have to contribute to ADC fund
- ✓ Phase out ADC within a reasonable short time frame
- ✓ Implore all the stakeholders , in particular, incumbent BSO to improve upon cost efficiencies to quicken the phasing out of ADC
- ✓ Minimize the access cost itself through appropriate choice of techno-business model

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