Consultation Paper No. 13/2004

Telecom Regulatory Authority of India

Consultation Paper

On

Access Deficit Review

New Delhi

23rd June 2004

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PREFACE

On 29th October, 2003, the Authority notified an Interconnection Usage Charges Regulation (IUC) which had included carriage, termination and Access Deficit Charges. This was only a review exercise on IUC/ ADC Regime notified earlier in January 2003. In the October 2003 regulation, the Authority had mentioned that in the subsequent years, the Authority would review both the size of the ADC payments as well as who should be beneficiaries of the ADC Regime. The Authority had suggested that funding of ADC on a percentage of the Annual Revenue of the operators could be an alternative option before it becomes part of USO.

TRAI estimates that by 31st March 2006, tele-density of 15 could be achieved which is almost four years ahead of the NTP 1999 targets.. It should be our endeavour to ensure that momentum gathered already continues and accelerated growth takes India towards much higher level in the International Telecom scenario and provide support to increase in country's GDP. The consultation paper is targeted to provide simplifications in the existing ADC regime. There appears to be a case for switching over from current ADC regime to one based on certain percentage of Revenue of the Service Providers. Of course, at this stage this is an issue open for a debate.

The Authority has received several communications with respect to the existing IUC regime especially related to ADC issues. The various issues are thrown open for discussion with all stakeholders. TRAI has asked all stakeholders to give their valuable comments after due consideration. TRAI is proposing that the new ADC Regime should be finalised well before the proposed implementation date of 1st October 2004. TRAI is re-iterating its proposal that ADC Review will be an annual affair. The new ADC regime after the completion of Consultation Process would be applicable from 1st October 2004 to 30th September 2005.

The Authority invites written responses from all the stakeholders latest by closing hours of 15th July 2004. It would be appreciated if the response is accompanied with an electronic version of the text through E-Mail. For further clarification, stakeholders can get in touch with Shri Rakesh Kumar Bhatnagar, Advisor (FN) on 011-26166930, or E-Mail Address trai06@bol.net.in.

(Pradip Baijal)
Chairman, TRAI

CHAPTER 1

Background

1.1 The opening up of the telecom sector has witnessed intense competition, especially in the mobile and long distance sector and steep fall in the tariff for long distance calls, both international long distance calls and national long distance calls. Access Deficit arises when the tariff specified for access does not cover the cost of providing access. The ADC compensates for the below cost rentals especially in rural areas, local call charges, provision for free calls etc. to make the basic telecom services affordable to the common man to promote both Universal Service and Universal Access as per NTP'99. Prior to the opening up of the telecom sector, the Access Deficit was being taken care of through a cross-subsidy from domestic and international long distance tariffs. With stiff competition in the National and International Long Distance segments as well as in the Access Network (Fixed line, WLL(M) and Cellular Mobile), there is a sharp decline in the prevailing tariffs. Market forces through Open competition and the implementation of Cost based termination and carriage charges has led to a situation that operators are no longer in a position to take advantage of cross subsidy through long distance traffic as was the case earlier. As a result, there is a need to compensate the access deficit for fixed line through regulatory intervention.

1.2 Even developed countries like the U.S., Australia, Canada, and France, with lesser compulsions of providing low rentals and tariffs for unviable services have implemented schemes to recover the access deficit. In most countries, the funding of access deficit has been merged with the Universal Service Obligation (USO) programme. In India too, the aim of the Authority is to transition towards such a situation, while maintaining an Access Deficit Charge (ADC) regime in the interim period. The ADC regime was introduced by the Authority together with its Regulation on the interconnection Usage Charge (IUC) regime.

1.3 On 24th January, 2003, the Authority had notified an IUC Regulation which specified origination, carriage and termination charges, as well as the access deficit charges. The ADC regime was applicable only for calls involving fixed line subscribers either at one end or both ends. This involved differential IUC/ ADC charges for calls from and to fixed line, cellular mobile and WLL(M). The Authority had considered that it would review and address any problems with the regime in light of experience with the regime after implementation.

1.4 The tariffs which were reported by the service providers subsequent to the IUC regime showed certain anomalies and pointed to unsustainability of the regime. The ADC being loaded only on calls involving fixed line meant that the cellular mobile long distance tariffs could be much more attractive than fixed line tariffs incorporating the ADC. To compete in such a situation, however, the fixed line service providers were forced to offer tariffs which did not fully cover the IUC plus ADC, thus facing an unsustainable situation. Some other difficulties with the ADC/IUC regime were also pointed out by the industry in its meetings with the Authority, which decided to review the regime and address the various areas of concern In that review, the Authority also considered a number of other issues, such as:

- Whether funding of ADC should be linked with roll out of BSOs;
- Whether the ADC funding should continue for the foreseeable future or a cut-off date should be specified after some years;
- Should the ADC be funded also from calls involving only cellular mobile and limited mobility;
- Review amount of ADC for ILD calls to address grey traffic.

1.5 The Authority, after following the public consultation process and discussions with the industry notified a revised IUC regime on 29th October, 2003, to be implemented from 1st December, 2003. The Authority's decisions on various points are also mentioned in its Explanatory Memorandum to the Regulation of 29th October, 2003. Some relevant paragraphs from the Explanatory Memorandum are reproduced below:

Paragraph 24 states

The Authority noted that the difference between historical costs and forward looking costs would be large, and relying on costs based only on modern and forward looking technologies would imply a large burden from the stranded costs for BSNL. While the Authority feels that change over to FLLRIC model is imperative, it examined the implications of a sudden changeover against a gradual changeover. Since BSNL is the major supplier of telecom services in the country and has also contributed the maximum for achieving the targets of rural tele-density and in supporting low paying subscribers, a changeover to FLLRIC at present would adversely affect the services provided not only to rural and low paying subscribers but also the telecom industry in the country as a whole. The Authority noted that BSNL is already deploying latest technology and lower cost equipment in its expansion programme. Since wireless technology is being used, it is expected that some of the existing network will also be gradually replaced by such equipment. In short, the approach is to achieve full shift to FLLRIC cost in a gradual manner over a few years rather than a single year change. The latter would leave heavy stranded cost and would be quite impractical. The Authority therefore, decided to rely on costs for the current year, based on as recent audited costs as possible. For this purpose, it worked with more recent data than was used in the initial IUC exercise. The Authority was of the view that with the changes in technology and a reduction in equipment costs taking place rapidly, the amount of funding required for ADC would decline. Over time, within a few years, therefore, it may be possible to do away with the ADC regime, and the ADC regime could be merged with the USO regime. This would be similar to the situation in most other countries, where the ADC regime had been combined with the USO regime, rather than the ADC funding being provided through a separate ADC regime.

Para 26 states

The available information was used to obtain the picture for 2003-2004. For BSNL, since the cost attributed to cellular mobile services have been removed by the Authority and the extent of WLL(M) installations are minor, the aggregate costs applicable for fixed line to 2002-2003 were taken to be applicable to 2003-2004 also. For the purpose of ADC, this could be considered as the gradual introduction of forward looking long run incremental costs in calculation of the IUC/ADC.

Para 57 states

The Authority has also decided that it would obtain more detailed audited cost information to assess the relevant ADC for BSOs, and would also consider phasing it out after the next review. This phasing out may be earlier than the overall phasing out of the access deficit regime that the Authority will consider, merging the ADC regime into the USO regime after a few years. This would require detailed consultation with the Government. Another alternative for the Authority to consider, would be whether the payment of access deficit should be linked to rural roll-out, either based only on such a roll-out, or based on giving greater weight to such roll-out in payment of funds to recover the access deficit.

Para 58 states

For BSNL and MTNL, to the extent that the amount of ADC does not cover the full amount of the deficit over time, the Authority noted that they have benefited on account of being allowed entry into cellular mobile without any entry fee. The Authority also hopes that the deficit would be made good by the profits that these organizations will earn from their cellular mobile and WLL(M) services, bearing in mind the rapid subscriber growth being experienced by these services. This is important to allow more flexibility to the tariff developments, which are a major contributory factor in spurring growth, teledensity and commercial activity in the country. The Authority will be examining all these factors in greater detail at the time of the next review of the ADC regime.

Para 87 states

The Authority considers that the origination/ termination charge for international calls has to serve the objectives of both a reduction of the grey area traffic and provision of revenues for achieving the objectives of New Telecom Policy 1999. The Authority has considered these objectives, and has decided to keep this balance in mind. At present, the revenues available from such calls for the objectives of tele-density have been given greater emphasis in view of a need to specify affordable tariffs in the market along with an ADC regime. The Authority has thus decided to specify an access deficit ***charge of Rs. 4.25*** *per minute for these calls for both outgoing and incoming minutes.* ***The Authority will consider lowering this amount over time. This amount would be collected by fixed line service providers on***

their outgoing/incoming calls as mentioned above in the method for collecting the ADC. For ILD calls to/from cellular mobile and WLL (M), the ILDO will collect the relevant access deficit from the access provider for outgoing calls, and pay from its settlement rate for incoming calls, and pass on the ADC amount to BSNL (emphasis in original)

Para 89 states

Since this was only a review exercise of the IUC/ ADC regime notified in January 2003, the Authority has not undertaken any structural changes in the estimation methodology for ADC. Periodic (annual) ADC calculations based on audited results of all service providers are being proposed. The next exercise would consider changes in the ADC regime. In the subsequent years, the Authority would review both the size of the ADC payments as well as who should be the beneficiaries of the ADC regime. It may even consider funding ADC based on a percentage of the Annual Revenues of the operators. Further, the ADC regime should ideally be merged with the USO regime over time, say in about 3 to 5 years. This will also help implement the scheme in terms of a revenue share, and will further reduce any competitive distortions that may be introduced by loading the ADC regime on the minutes of use. However, such a regime can only be introduced after consultations with the Government, which the Authority would initiate. In the post-Accounting Separation scenario, the Authority would also be better equipped for Forward Looking Proxy Models.

Para 100 states

The Authority further noted from examples across various countries that the ADC was made available in general only to the incumbent BSOs and not to the new entrants. The Authority would have liked to implement such a regime here also. The Authority sought detailed information from the BSOs and the same was provided by most of them. The Authority considered this data and based on nor-mated estimates (BSNL monthly rentals for private BSOs and BSNL costs for MTNL), it found that some BSOs would require ADC. A partial implementation of the ADC regime would however, be very difficult and may also generate regulatory incentives/ disincentives which the Authority has addressed in another part of this review. The Authority also did not want to disturb the prevailing structure of the Regime at present, without introducing a larger change in methodology. The Authority has, therefore, decided to provide ADC for BSOs also, but the amount collected through ADC by them would in effect be lower than the proportionate ADC correspondingly received by BSNL. Further the Authority will look in greater detail at the data applicable to BSOs and will move to a regime under which the BSOs will not get ADC funding unless it is proved on the basis of data that such funding is eminently desirable in the interim transitional phase.

1.6 Thus, the Authority has mentioned, inter alia, in its previous Regulation dealing with ADC that it would:

- Achieve a full shift to forward looking long run incremental costs (FLLRIC) in a gradual manner over time, i.e. it would rely more and more on incremental (and thus lower) costs in subsequent reviews;
- Within 3 to 5 years, consider doing away with the ADC regime;
- Costs attributable to cellular mobile services were removed, and no cost increase was taken for WLL(M). This could also be considered as a gradual introduction of FLLRIC;
- Consider phasing out the ADC funding for BSOs other than BSNL after the next review, i.e. after this review;
- Address the issue of grey market ILD calls, while emphasising the need for improving teledensity;
- Consider moving to collection of ADC through a revenue share after the next review, i.e. after this review.

CHAPTER 2

Review of the ADC Regime

2.1 In its IUC Regulation of 29th October, 2003 the Authority had stated that it would periodically (annually) review the ADC calculations based on audited results of all service providers, and that the next exercise would consider changes in the ADC regime. The process of annual review of ADC along with comprehensive exercise on IUC has already been initiated by the Authority, and involves collection of data on a number of parameters, including information on financial parameters (costs, revenues) as well as traffic flows. However, a need to go into these various details depends partly on the methodology arrived at by the Authority for collecting the ADC and the beneficiaries identified for payment of funds to finance access deficit. For instance, if the ADC is to be provided only to the main incumbent which covers not only the lucrative metro areas, and if this is to be funded through a revenue share, then there may not be a need to assess the details of traffic. Likewise, if a revenue share regime is to be implemented for ADC, the statement of the Authority in its IUC Regulation of 29th October, 2003 that it will increasingly keep reducing the impact of stranded costs in relevant costs, a change in the revenue share decided to fund ADC will reflect the Authority's decision on the treatment of stranded costs in comparison to present or forward looking costs to estimate the access deficit. This would also imply that the ADC regime could be based on reasonable estimates of data rather than detailed data from each service provider.

2.2 Further, a number of developments that have taken place since the notification of the IUC Regulation, suggest a review of the ADC regime earlier than envisaged in the IUC Regulation. For example, due to various reasons, implementation of the revised ADC regime was delayed, leading to a continuation of the previous ADC regime for a longer period than anticipated. Any concern regarding such delays in implementing a new regime gets magnified on account of the relatively rapid increase in the subscriber base, which would imply a hastened need for re-evaluation of the prevailing situation. This is especially so in a situation where the ADC is calculated on the basis of past data on revenues and costs, in a situation where over time, costs decrease and the relevant revenues tend to increase. Moreover, the Authority has now repeatedly experienced delays in comprehensive and reasonably accurate data being provided by the service providers, and the verification of such information tends to further delay decision-making and thus the implementation of a revised regime.

2.3 The Authority is therefore of the opinion that a review of the ADC regime should now begin, taking into account the points mentioned above as well as the experience with the prevailing ADC regime. The next Section shows some salient features of the experience with the regime, and suggests that it would be necessary to make fundamental changes in the collection and funding of the ADC.

Experience With the Present ADC Regime

2.4 Though four months have already passed after the implementation of the existing ADC Regime from 1st February 2004, very few settlements appear to have taken place. Reportedly, most of the operators are yet to raise their Bill on other Operators or Carriers. Moreover, informal discussions with BSNL show that the ADC payment response is very poor and in some of the Circles, operators have made claims regarding their call pattern which seem untenable. For instance, some operators have reportedly shown no International calls being made. TRAI has also asked all Operators to furnish ADC collections made by them as well as the payments made to BSNL, but the response is so far limited, and the data would require considerable further analysis.

2.5 The present regime contains a substantial variation of the ADC amounts per minute, and this varies from Rs. 0.30 per minute to Rs. 0.80 per minute for domestic calls, and Rs. 4.25 per minute for international calls. The underlying data required for such collections is detailed and experience has shown that problems are being faced in reconciliation on this account. This variation in the ADC amount creates an incentive to mis-report the category of calls, e.g. for roaming and long distance calls. Further, the bypass issues tends to also give rise to grey traffic, an issues which has again been raised by certain operators with the Authority.

2.6 It has been reported that reconciliation issues also arise on account of ADC being imposed on calls that do not involve fixed line subscribers, and that verification of the information on such calls is difficult.

2.7 The above problem is augmented because of the delay in implementation of the CDR based billing system by BSNL, which is the main access provider in India. The Authority recalls that when the initial IUC/ADC regime was to be implemented, an interim solution had been found for this purpose, with the understanding based on BSNL's agreement, that CDR based billing system would be installed by BSNL this June. Latest information suggests that the billing system is likely to take much more time, and the delay will continue to result in data reconciliation problems for the ADC regime.

2.8 The ADC regime raises technical issues also since the ADC amount is dependent upon distance and is different for Intra-Circle and Inter-Circle traffic. For instance, a Circuit Group for an ADC of Rs. 0.80 per minute should have all SDCA/ LDCA codes in the circuit group corresponding to distance between originating and terminating LDCCs being more than 200Kms. Likewise, for payment and reconciliation, each Access Provider for his outgoing, incoming and even transit traffic is required to measure the traffic in minutes for different ADC values separately and even details are required for all calls for reconciliation. More Circuit Groups are thus required to be created, which becomes a non efficient arrangement as with multiple circuit groups, traffic carried on each becomes less and overall due to lower Erlangs of traffic, more circuits are required to be provided for meeting the Grade of Service requirements. The additional interconnection E1 requirements add to costs and more pressure on the Inter-Carrier Billing System.

2.9 In addition to problems with respect to NLDOs, the fixed service providers face difficulty in verifying the ILDO calls also, if such calls do not involve their network. Since such ADC bypass issues involve mobile to mobile NLD calls and ILD calls from/to mobile, it assumes major importance as the share of mobile subscribers, and therefore minutes of use, increase in total at a much more rapid rate that the corresponding estimates for fixed line.

2.10 The above experience suggests that it would be useful to evolve a simpler method of collecting ADC which does not involve distance based and call based ADC, and may also be subject to easier verification.

Proposed Amendment in the ADC Regime

2.11 The Authority has considered this matter, to develop an ADC regime which would meet the various objectives.

2.12 One option is to have the same ADC charge on all calls, but this would lead to an increase in call charge of calls covering smaller distance, and would still be subject to the problems arising with respect to calls which have ADC but do not involve fixed line.

2.13 Another option is to collect the ADC in the form of a revenue share. This would result in a regime which does not impose differential burden on different types of calls, which implies that the incentive for bypass would be reduced. It would also provide flexibility to the service provider to collect the revenues as it desires in view of the prevailing competition, rather than changing the competitive playing field through ADC charges imposed on certain types of calls in per minute terms. Also, since the service providers would already be making payments of revenue share for their License Fee annually, a basis for calculation and verification of the ADC would be readily available.

2.14 The implementation of such a regime becomes easier if there is only one beneficiary. Otherwise, there is a need to consider the allocation of the total to the various beneficiaries concerned. In its IUC Regulation of 29th October, 2003 the Authority had expressed a need to review also whether any operator other than BSNL should be provided funding for ADC. Relevant points in this regard include the fact that normally ADC funding is provided to the incumbent, prior to the regime being merged with the USO regime. Further, the transition of service providers from Basic Service License to Unified Access Service (UAS) License has led to a reduction in the extent of roll-out requirements for them. In addition, an important factor is that the new entrants are operating with modern networks, and MTNL which has a legacy network is an incumbent in the premium service areas of India; MTNL has both a more lucrative market and a substantially higher monthly rental which, as shown in general terms in Chapter 3, has a major impact in reducing the access deficit.

2.15 Taking these factors into account and the fact that even for BSNL, which accounts for most of the ADC collection and disbursement, the Authority will be phasing out the ADC regime after a few years, the Authority is considering that only BSNL be provided ADC under the new regime. One possibility that may be considered in this regard is whether in a regime where the BSOs do not get any funding for ADC, they should also not be levied any revenue share for collecting the ADC. The various incentives/disincentives related to such a proposal need to be taken into account for reaching a final conclusion.

2.16 The next Chapter discusses the relevant aspects of such an ADC regime, which is the subject of consultation in this paper. In this context, the Authority has also noted a recent representation by one service provider that its international incoming call traffic has seen a major fall after the implementation of the present ADC regime in February, which according to this representation shows a marked increase in grey market international traffic. The Authority has examined this matter and the data shows that the decline in the ILD minutes for the operator concerned is actually a decline in its market share, and the loss in minutes is made up by increase in incoming ILD minutes being handled by other operators. The Authority has also examined the minutes of incoming ILD minutes per subscriber each month, during the last year, up to March 2004. There is a fall in these minutes during January to March, 2004 (the minutes fell in February and increase in March, but were still below the level for January, 2004). The extent of the fall, however, is not more than the declines that have occurred earlier in certain months during the previous year. Furthermore, implementation of the ADC regime from October, 2004 as a revenue share would remove the present feature of the regime which provides an incentive for call bypass or grey market traffic.

CHAPTER 3

Proposed ADC Regime Based on Revenue Share

3.1 To obtain clarity on the extent of revenue share that must be collected for the new ADC regime, we need to ascertain:

- The period for which the ADC is to be funded through the new regime;
- The amount of ADC for the period concerned;
- The revenue base which will fund the ADC amount through a revenue share

The period for ADC

3.2 As mentioned earlier, the new ADC regime is being proposed for the period October, 2004 to September, 2005. The month of October, 2004 seems to be a reasonable starting point taking into account the fact that it is the beginning of a quarter, which makes it easier to have consistent estimates of revenues, which are calculated on a quarterly basis for the purpose of revenue share License Fee. Also, the consultation process will take some time and thus the revised scheme cannot be implemented from the quarter starting July, 2004. Considering implementation from the later quarter, i.e. January, 2005, would in the Authority's opinion, likely delay the implementation of a new ADC regime.

3.3 Taking the above period into account, the Authority considers it appropriate to estimate the relevant costs, revenues and subscriber base for that period based on certain reasonable assumptions. The capital costs and certain revenue items that are adjusted from these costs in order to obtain the access deficit are calculated for the period October, 2004 to September 2005. The access deficit so estimated is to be taken as a ratio of the revenue for the period, in order to obtain the revenue share percentage for funding access deficit of BSNL. The revenue is calculated by multiplying the subscriber base in March 2005 (i.e. the middle of the relevant period) with the average revenue per user (ARPU) per month.

The amount of ADC

3.4 The previous Chapter has already noted that obtaining accurate data is a time consuming exercise. However, for implementing ADC based on revenue share, the extent of data required is much less than ADC based on per minute charge, and the Consultation process can begin without detailed information on the extent and direction of traffic, etc. Thus, for the purpose of this Consultation, and perhaps even for the ultimate decision since a revenue share regime is to be proposed, it may be possible to reach a decision on information based on reasonable assumptions about the relevant situation.

3.5 To begin with, we consider the estimates for the IUC Regulation of 29th October, 2003. Table 7 of the Explanatory Memorandum to that Regulation shows the following estimates for the Access Deficit that were calculated for BSNL:

Table 3.1 Summary of the ADC Estimates Under the IUC Regulation of 29th October, 2003

(a)	Total deficit to be taken for estimating ADC	Rs. 8,657 crores
(b)	Deduct from above:	
	- Local call surplus & funding from surplus in Local calls	Rs. 1,456 crores
	- Government compensations	Rs. 1,865 rores
(c)	Net Access Deficit	Rs. 5,335 crores

Notes:
(1) For the reasons mentioned in the Regulation, of the above amount of Rs. 5,335 crores, BSNL was provided about Rs. 4,700 crores as ADC in the scheme that was implemented.
(2) As shown in Table 7 of the Regulation's Explanatory Memorandum, the total deficit to be taken for estimating ADC has been calculated by deducting from the relevant capital expenditure, the amount of rental revenue.

3.6 The extent of ADC for the period of October, 2004 to September, 2005 is to be calculated on the basis of certain reasonable assumptions. The methodology used for this purpose is given below.

3.7 BSNL's relevant capital expenditure is calculated by:

- First take the Capital Employed for 2002-2003 (i.e. the year for which CAPEX was estimated for the exercise culminating in the IUC Regulation of 29th October, 2003), and add three-fourths of the capital works in progress to obtain the initial Capital Employed for installed capacity in 2003-2004. The assumption therefore is that 75% of the work in progress is capitalised at the end of each year, with a spill-over of 25% of the works in the next years.
- For 2003-2004, add the same amount for capital works in progress as that taken for 2002-2003 in the previous calculations on ADC. This is based on the increase in fixed line DELs for BSNL being similar numbers in both the years, i.e. 2002-2003 and 2003-2004. In fact, it is likely to be lower on account of capital expenditure per fixed line DEL tending to decrease with the passage of time.
- For the subsequent two years also, namely, 2004-05 and 2005-2006, estimate Capital Employed using the same methodology/assumptions as above. The data on fixed line growth shows that the Capital Employed calculated above will grow at a smaller rate than that for fixed line DELs of BSNL, thus reflecting a slight decline in capital per subscriber over time.
- Take the average of Capital Employed for 2004-2005 and 2005-2006, to obtain the Capital Employed for the mid-period between these two years, namely October, 2004 to September, 2005.
- Other components of the CAPEX calculation are estimated using the same methodology as for 2002-2003, e.g., a straight line depreciation is calculated for the new Capital base. This provides us with the estimates of CAPEX for the relevant periods.

- From the estimate of CAPEX, allocate certain portion of the costs towards mobile services, to remove joint and common CAPEX for these services in the balance sheet of BSNL. With the rapid growth of mobile services offered by BSNL, we consider a proportion of 20% for this purpose.
- In the previous ADC exercise, the Authority had taken an average monthly rental of Rs. 156/-. While this figure is used as one of the estimates for monthly rental revenue, there is now a possibility of higher rentals in view of tariff forbearance by the Authority. Thus, the average monthly rental to be taken into consideration would be higher. We have taken a monthly rental amount of Rs. 200/- for this purpose. This is based on the fact that now the Authority has given tariff forbearance except for rural tariffs, and there are a number of tariff schemes with higher monthly rentals.
- The monthly rental has to be multiplied by the average subscriber base for the period, i.e. the subscriber base for March 2005. This is estimated by applying to the BSNL subscriber base in March 2004, the rate of growth of subscriber over the previous year, i.e. March 2003 to March 2004.
- Based on the above, the relevant amount of total deficit to be considered for estimating ADC (i.e. corresponding to item (a) in Table 3.1), for October, 2004 to September, 2005 would be as follows:

	20% allocated to mobile
(i) Monthly rental of Rs. 200/-	Rs. 4,156 crores
(ii) Monthly rental of Rs. 156/-	Rs. 6,190 crores

3.8 To obtain the relevant ADC estimate from the above amounts, we need to deduct Government compensation and the Local call surplus and funding from surplus in termination charge. The components of Government compensation considered in the previous exercise were re-imbursement of License Fee and Spectrum Charges, VPT Grants, USO payments, and adjustments due to the weighted average cost of capital (WACC) being lower for ADC than for normal return to investment (this last item reflects the effect of government grants/concessions to BSNL). The last item among these components needs to be removed from the amount allocated for Government compensation because that amount was relevant for the previous calculation but not this one: the numbers given above have been calculated using the WACC applicable for the ADC calculation that was applied in the previous ADC exercise, namely, 12.21%. For the other items, the same amounts as for the previous exercise are taken for our period also. It is likely that the actual amount may be slightly higher because of a higher revenue base and USO activity, but since the change in the nature of the overall result is unlikely to be a major one due to the variation in these amounts, we consider the same amounts as for the previous ADC exercise. With the above situation, the amount of Government compensation (i.e. corresponding to the second item under (b) in Table 3.1), would be Rs. 870 crores.

3.9 Regarding Local Call surplus and funding from surplus in termination charge, we need to make certain changes due to an increase in the subscriber base and higher average tariffs for local calls under the revised tariff regimes (please see below). This is done as follows:

- The change in BSNL fixed line subscriber base is taken on the assumption that the annual rate of subscriber increase would be the same as in the year up to March 2004. Based on this, we obtain the subscriber base for March 2005.
- As a first step, this rate of increase in subscriber base is applied to the amount of local call surplus of Rs. 1,456 crores considered in the previous exercise on ADC (i.e. to the first item under (b) in Table 3.1 above). The basic assumption is that the revenues and costs for local calls increase at the same rate as for subscriber base. For this too, there is likely to be some overestimate because the average costs of local call are unlikely to increase at the same pace as revenues; the average cost of local calls is based on fixed line operational costs per minute, and the rate of growth in this gets reduced due to an increase in minutes of usage arising from higher subscriber base of all networks and greater usage resulting from reduction in long distance call charges and calling party pays.
- A second step is included in the analysis, by taking the effect of a small rise in average tariffs over time for such local calls. This arises due to a combined effect of the reduction in free call allowance, and higher tariffs for calls from fixed line to other services. A small increase of 5% in the local call revenues is considered for this purpose, even though the data suggests slightly higher rise in effective local call tariffs due to the two factors mentioned above .
- Taking the effect of the two steps mentioned above, the relevant amount for adjustment due to Local call surplus etc. becomes about Rs. 2,100 crores.

3.10 Now we are in a position to get the Net Access Deficit, i.e. the amount corresponding to item (c) in Table 3.1 above. This ranges as follows.

	20% allocated to mobile
(i) Monthly rental of Rs. 200/-	Rs. 1,402 crores
(ii) Monthly rental of Rs. 156/-	Rs. 3,436 crores

<u>Revenues for the Relevant Period</u>

3.11 The revenues for the period are calculated by taking the average subscriber base at the mid-point of the period, namely end of March, 2005, and multiplying it by the monthly Average Revenue Per User (ARPU) taking account of all revenues of access providers and the long distance operators, including both the national and international long distance operators, and all fixed and mobile service providers. This is shown in Table 3.2 below.

Table 3.2 Subscriber base March 2003 to March 2005

Month	Fixed	MOBILE
Mar'03	41491053	12990498
Dec'03	42089419	28385555
Jan'04	42166024	29997289
Feb'04	42301489	31663429
Mar'04	42842607	33612896
Apr'04	42927258	34970000
May'04	43132342	36300000
Jun'04	43342623	38040905
July'04	43553928	39865301
Aug'04	43766264	41777193
Sept'04	43979636	43780777
Oct'04	44194047	45880451
Nov'04	44409504	48080823
Dec'04	44626011	50386721
Jan'05	44843573	52803208
Feb'05	45062197	55335587
Mar'05	45281886	57989416

3.12 For the overall subscriber base in Table 3.2, the numbers till May 2004 are actual number of subscribers. For each subsequent month, the estimates are calculated by applying the monthly increase for the first five months of 2004. For fixed line, this rate of growth is similar to that taken for BSNL subscriber base projections above. For mobile, the rate of growth is lower than that achieved during the previous year, but that is to be expected in view of the increase in the subscriber base over time.

3.13 The subscriber base calculated for March 2005 has to be multiplied by ARPU to get the overall amount of revenue for the twelve months October, 2004 to September, 2005. The Authority has noted that the overall ARPU has been declining over time, but still ranges about Rs. 575/- per month (this ARPU includes the revenues of long distance service providers also). Since this amount is likely to decline, we consider somewhat lower estimates for ARPU, namely an ARPU of Rs. 525/- per month.

3.14 Based on the above, we obtain an overall adjusted gross revenue base of about Rs. 65,000 crores. The net deficit calculated above can be estimated as a percentage revenue share of this total revenue amount for the period under consideration. These revenue share percentages of the adjusted gross revenues are as follows.

	20% allocated to mobile
(i) Monthly rental of Rs. 200/-	2.2 %
(ii) Monthly rental of Rs. 156/-	5.3%

3.15 The above range is wide. Our discussion on the various estimates shows that we are likely to have taken an over-estimate of costs in a number of cases. This suggests that the revenue share percentage is likely to below the upper limit of the range given above.

3.16 The Authority has further considered one possibility, namely that the recent increase in mobile subscriber base, though relatively high, has been somewhat lower than expected. In this background, if we take the average absolute increase in monthly subscriber base for January to May 2004, instead of an average monthly rate of growth, the subscriber base for mobile in March 2005 would be lower. It would be approximated by the subscriber base similar to that shown for January 2005 in Table 3.2 above. Even with this change, however, there is no fundamental amendment needed in the estimates of revenue share for ADC that is shown above.

CHAPTER 4

QUESTIONS

1. What may be the shortcomings of an ADC regime based on revenue share?

2. Should the ADC funding under the proposed regime be provided only to BSNL or also to other Basic Service Operators? If so, what should be the criteria for selection of such operators, and how should the ADC funding be achieved? Would it be reasonable to consider not funding the ADC for other Basic Operators but at the same time not charging them for ADC also? Please give reasons for your response.

3. Please comment on the methodology and estimates of the ADC regime proposed in this paper. Please substantiate your response with factual information and any other basis that would imply a reconsideration of the proposal. If a suggestion is made for any amendment, please also propose an alternative for consideration of the Authority.