



PAKISTAN TELECOMMUNICATION AUTHORITY
HEADQUARTER F-5/1 ISLAMABAD

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DETERMINATION ON DISPUTE BETWEEN PTCL AND LDI OPERATORS
REGARDING
ORIGINATION CHARGES ON 'NON-REVENUE TIME' OF PCCS

1. BACKGROUND

(1) The Pakistan Telecommunication Authority (the "Authority") is a body corporate established pursuant to section 3 of the Pakistan Telecommunication (Re-organization) Act, 1996 (as amended from time to time) (the "Act"), which among others, performs the following functions:

- (i) regulate the establishment, operation and maintenance of telecommunication systems and the provision of telecommunication services in Pakistan;
- (ii) promote and protect the interest of users of telecommunication services in Pakistan;
- (iii) promote the availability of a wide range of high quality, efficient, cost effective and competitive telecommunication services throughout Pakistan;
- (iv) settle disputes between licensees; and
- (v) regulate competition in the telecommunication sector and protect consumer rights.

(2) The Clause (h) of Sub-section (2) of Section 5 of the Act empowers the Authority to provide guidelines for, and determine, the terms of interconnection arrangements between licensees where the parties to those arrangements are

unable to agree upon such terms. Pursuant to the powers given under the said provision of the Act, the Authority issued the Interconnection Guidelines, 2004 (the “Guidelines”). Clause 5 of the Guidelines provides the principles on which interconnection should be established between networks. These include:

- (i) All operators are obliged to provide interconnection to other operators desiring to interconnect.
 - (ii) Interconnection and related services and facilities shall be provided on the basis of unbundled network elements and charged accordingly. A requesting operator shall only pay for the network components or facilities of the interconnection that it requires.
 - (ii) The operators shall not unfairly discriminate the terms of interconnection among different operators. An operator shall offer same interconnection terms to other operators as compared to his own similar operations or affiliates.
 - (iii) Charges for interconnection services shall be cost-oriented.
 - (iv) The operator that causes a cost for interconnection services shall pay for that cost to the other operator when interconnecting.
 - (v) Cost of inefficiencies of an operator should not be passed on to other operators through higher interconnection charges.
 - (vi) Interconnection arrangements should encourage efficient and sustainable competition.
- (3) Under Clause 18.2 of the Interconnection Guidelines, the interconnection charges are to be based on the following principles:

“(a) The structure of interconnection charges shall reflect the behavior of the underlying costs. Relevant interconnection costs may have different relationships

with interconnection activity i.e. some costs may be fixed while others may vary with usage. To the maximum possible extent, fixed costs shall be recovered through fixed charges while variable costs shall be recovered through a per unit charge related to the underlying activity. Moreover, peak and off-peak charges should be set where there is a significant difference in costs.

(b) Interconnection charges shall be set on objective criteria and follow the principle of transparency and cost orientation. The burden of proof that the charges are derived from relevant costs, including a reasonable rate of return on investment, shall lie with the operator providing interconnection to his network. The Authority has the right to demand full justification for the interconnection charges being demanded by the operator providing interconnection. The interconnecting operator may set and charge different rates, terms and conditions for providing interconnection for different categories of telecommunications services, where such differences can be objectively justified on the basis of the type of interconnection provided. The Authority shall ensure that such differences do not result in distortion of competition.

(c) Interconnection charges shall be sufficiently unbundled to ensure that an operator requesting interconnection is not required to pay for network elements or facilities not required for the service to be provided.

(d) Interconnection charges shall not include hidden cross-subsidies, particularly of anti-competitive nature.

(e) Interconnection charges shall include a fair share of joint and common costs and costs incurred in providing equal access and number portability, and of the cost of ensuring essential requirement”.

(4) Sub-rule (12) of Rule 13 of the Pakistan Telecommunication Rules 2000 (the “Rules”) states that if a dispute arises between parties to an interconnection agreement in relation to that interconnection agreement, then either party may refer the dispute to the Authority who shall determine that dispute by written notice, within ninety days after receipt of the notice in accordance with sub-rules (8) to (11). The determination of the Authority shall be final and binding on the parties.

(5) In exercise of the powers conferred under Clause (o) of Sub-section (2) of Section 5 of the Act, the Authority issued Interconnection Disputes Resolution Regulations 2004 (the “IDRR”). Sub-clause (1) of Clause 3 of the IDRR provides that an operator may file a Claim with the Authority if that operator is unable to reach agreement with the other party (a) on an interconnection agreement; or (b) on a dispute arising out of a subsisting interconnection agreement.

(6) Clause 25.1 of Schedule-4 Part I of PTCL license provides that *“Except as expressly provided for in this License, the Licensee shall not, in any manner, show undue preference to or exercise undue discrimination against different persons, groups or classes of customers with respect to the terms, charges or conditions on which it provides any Licensed Service, any interconnection service or terminal equipment. Undue discrimination may also occur if the Licensee charges customers the same price where the costs of supplying them are substantially different”*.

(7) As per Clause 1.4 of main body of approved PTCL RIO *“The Parties agree that the Authority may make amendments in this Interconnection Agreement and this Interconnection Agreement shall, in all respects, be accordingly amended by the Parties”*.

(8) Clause 5.3 of main body of approved PTCL RIO states that *“If there is a difference between a charge for a Service specified in **Schedule 11** and a charge determined by the Authority, the charge determined by the Authority shall prevail”*.

(9) As per Clause 5.4 of main body of approved PTCL RIO “As soon as reasonably practicable following an order, direction, determination or consent by the Authority of a charge (or the means of calculating that charge or a variation of that charge) for any one of the PTCL Services, PTCL shall make any necessary alterations to **Schedule 11** so that it accords with such order, direction, determination or consent. As soon as reasonably practicable following an order, direction, determination or consent by the Authority of a charge (or the means of calculating that charge or a variation of that charge) for any one of the Operator Services, the Operator shall make any necessary alterations to **Schedule 11** so that it accords with such order, direction, determination or consent”.

(10) Clause 5.5 of main body of PTCL RIO provides that “If any charge (or the means of calculating that charge) for a PTCL Service or an Operator Service has retrospective effect (for whatever reason) then PTCL or the Operator (as appropriate) shall, as soon as reasonably practicable following publication in **Schedule 11** or the submission by the Operator of an amended Operator Price List (as appropriate), adjust and recalculate the charge in respect of such PTCL Service or such Operator Service using the new charge”.

(11) According to Clause 5.6 of PTCL RIO “No charges shall be payable under this Interconnection Agreement by one Party to the other unless such charges are specifically referred to in this Interconnection Agreement”.

2. THE ISSUE

(1) PTCL, being the incumbent operator, was required under the Deregulation Policy issued by the Government of Pakistan to draft its Reference Interconnect Offer and to submit the same to the Authority for approval. In this regard, PTCL provided its first draft RIO to the Authority on 15th April 2004 for inclusion in Information Memorandum to be issued to prospective LL and LDI operators. The draft RIO provided the terms and conditions on which PTCL would provide

interconnectivity to other fixed-line operators. The Clause 3.5 of Schedule 11 of the PTCL RIO contained the charging mechanism for using PTCL network by LDI operators for Prepaid Calling Card Service (PCCS). The interconnection charges for Premium Rate Services (PRS), Freephone and '131' internet calls were also covered under the said PTCL RIO.

(2) Later, PTCL submitted its revised RIO to the Authority. However, it was noted that the revised PTCL RIO did not contain the charging mechanism for PCCS. The revised RIO was circulated to all stakeholders for their comments and suggestion. Global telecom, Wise Communication, Microtech Labs and Union Communications specifically raised the issue as to why the Clause 3.5 of Schedule 11 of PTCL RIO dated 15th April 2004 has been removed by PTCL from its new RIO without assigning any reason. Other operators, including World Call and Spell Telecommunication, also enquired about the clear charging mechanism for using PTCL network for 'Non-Revenue Time' traffic for PCCS.

(3) As part of the consultation process, these comments were forwarded by the Authority to PTCL for its views. On the issue of rationale to delete Clause 3.5 of Schedule 11 and the provision of clear arrangement for revenue sharing of 'Non-Revenue Time' and pre-conversation time of PCCS, PTCL did not explain the reason of deleting the PCCS charging mechanism from its revised RIO. PTCL submitted that *"pre-conversation time is charged in the form of lump sum access charge for PCCS O&M"*. On answering an LDI query that *"In case of Pre-Paid Calling Cards Service, the calls will be initially terminated to an Interactive Voice Response (IVR) System, which then allows the caller/subscriber to make calls to further destinations. Will the original termination to the IVR system be considered as start of the successful call, or the start of the secondary call will be considered as the start of the successful call?"*, PTCL commented that *"the pre-call connection duration used for IVR and authentication purpose shall be charged separately"*.

(4) The PTCL RIO was approved by the Authority in December 2004. However, the same was challenged by PTCL in the High Court and was remanded back to the Authority for its decision. After further deliberations with the industry and PTCL, the Authority finally approved the PTCL RIO in May 2005 with necessary modifications. In January 2005, the LDI operators had again approached the Authority on the issue of provision of clear arrangement of revenue sharing of 'Non-Revenue Time' (e.g. balance enquiry) by PTCL as the same is not explicitly covered in the PTCL RIO.

(5) The Authority noted that Clause 5.5 of Schedule 3A (Call Origination Service) of approved PTCL RIO states that *"Successful Calls shall be charged based on the rates for the duration of use of the circuit for the Call Duration of use of a circuit shall start at the time the circuit used for the Call is seized and end at the time the circuit is released"*. Whereas the "Call Duration" is defined in Schedule 13 as *"at the terminating IGS, the time when the IAM is received to the time when the REL is sent or received, or at the originating IGS, the time when the IAM is sent to the time when the REL is sent or received"*.

(6) However, the Clause 3.1.1 of Schedule 11 of PTCL RIO provides that charges for origination services, along with termination and transit services, *"shall be based on circuit utilization from the time the called party answers until the time the calling or called party clears, which ever is sooner. The Charges shall be accounted in per second blocks. Only successful Calls are chargeable"*. The Authority noticed that there is inconsistency between the PTCL RIO terms for the charging basis of calls.

(7) The Authority also observed that Clause 1.3 of the main body of the PTCL RIO provides that *"In the event of an inconsistency between the main body of this Interconnection Agreement, the Schedules, Annexures and Attachments, the order of precedence (unless expressly stated to the contrary) shall be as follows:*

- (a) *the main body of this Interconnection Agreement;*
- (b) *Schedule 11 ? Charges;*
- (c) *the other Schedules;*
- (d) *the Annexures;*
- (e) *the Attachments”.*

(8) Keeping in view the aforesaid, the Authority viewed that the terms of Schedule 11 has precedence over Schedule 3 of PTCL RIO. However, the charging mechanism given under Clause 3.1.1 of Schedule 11 is also subject to different interpretation by PTCL and LDI as the definition of “called party” has not been defined in Schedule 13 of PTCL RIO. As a result, PTCL claimed such charges as its receivables, while LDI operators did not pay charges to PTCL for ‘Non-Revenue Time’ on PCCS traffic.

(9) On 31st October 2005, PTCL requested the Authority’s approval, in accordance with its RIO terms, for suspension of interconnection services to few LDI operators on account of non-payment of dues. PTCL also provided the list of disputed issues to the Authority. It was noticed that the largest component of total amount dues, as provided by PTCL, was the charges for ‘Non-Revenue Time’ on PCCS traffic. A number of meetings were held on the issue so as to bring the parties to a common ground. However, the parties were unable to make consensus on the issue.

3. LDI OPERATORS’ POINT OF VIEW

(1) The LDI operators raised concerns as to why PTCL had deleted the charging mechanism for PCCS from its revised RIO without assigning any reason. Had this been covered in the RIO, then the dispute would not have arisen to such extent. Moreover, the business models of all LDIs were built on the assumption that such calls would not be charged by PTCL, which is supported from the PTCL action in deleting the clauses of charging of PCCS from its RIO.

(2) LDI operators also referred to the Clause 3.1.1 of Schedule 11 of approved PTCL RIO, which states that charges “*shall be based on circuit utilization from the time the called party answers until the time the calling or called party clears, which ever is sooner. The Charges shall be accounted in per second blocks. Only successful Calls are chargeable*”. LDI operators were of the view that according to this Clause they are not required to pay for calls with no answer from called party or for non-revenue calls as these are unsuccessful calls as per the terms of PTCL RIO. According to LDI operators, the “called party” is the person to which the call is destined and not the IVR.

(3) LDI operators also highlighted that PTCL is not charging traffic-sensitive rates for ‘Non-Revenue Time’ from PCCS of its O&M partners. Instead, a fixed amount of Rs. 6,000 per E1 per month is charged for such traffic from PTCL O&M contractors. LDI operators demanded that on the principle of non-discrimination, same level of charges should be collected by PTCL from the LDI operators and PTCL O&M partners.

(4) It was also pointed out that PTCL is providing very low ASR to LDI operators (around 20% to 40%), which resulted in considerable amount of unsuccessful calls at PTCL end. The operators were of the view that there is no point in charging such calls for which the fault is at the PTCL side.

(5) LDI operators apprised that there have been considerable delays on part of PTCL in meeting its obligations given in the Deregulation Policy of providing its customers the facilities of call-by-call carrier selection and carrier pre-selection, especially on Alcatel and ZTE exchanges. Due to this, the PCCS is the main service that the LDI operators can provide to their customers. Moreover, the ‘Non-Revenue Time’ in most of the cases is more than 100% of the ‘Revenue Time’ of PCCS, for which the LDI operators are not being paid by the customers. Keeping

these in view, charging of such traffic to LDIs by PTCL would seriously affect the financial viability of LDI operators.

(6) On the proposal by PTCL that LDI operators should charge 'Non-Revenue Time' from their customers, LDI operators pleaded that PTCL itself is not charging such calls from the customers using PTCL calling cards. In this context, LDI operators could not charge 'Non-Revenue Time' from their customers on practical and commercial grounds.

(7) LDI operators also proposed to PTCL that keeping in view the peculiar nature of traffic routing of PCCS traffic, some initial seconds of a call may not be charged by PTCL. This proposal drew its reference from Germany where initial thirty (30) seconds are not charged. Moreover, PTCL itself is using such scheme for payphone operators where initial three (3) seconds of a call are free of charge.

4. PTCL'S POINT OF VIEW

(1) PTCL supported its stance by referring to Clause 5.5 of Schedule 3A of its RIO which states that *"Successful Calls shall be charged based on the rates for the duration of use of the circuit for the Call Duration of use of a circuit shall start at the time the circuit used for the Call is seized and end at the time the circuit is released"*. PTCL was of the opinion that according to the said Clause, the usage of the circuit starts when a PTCL customer using an LDI's calling card reaches the LDI's IN Platform and use of the circuit ends when he goes on-hook. As PTCL resources are being used for this period, PTCL has the right to claim payment for such service.

(2) Regarding the provision of Clause 3.1.1 of Schedule 11 of RIO, PTCL was of the view that for calls such as balance enquiry, the IVR is the "called party". Hence, the call answered by the IVR is the "successful call" under the terms of RIO.

(3) On the issue of discrimination of LDIs vis-à-vis PTCL O&M contractor, PTCL was of the view that its O&M partners are paying 'PTCL retail charges minus discount' to PTCL, which is totally different regime as compared to interconnection charges mentioned in the RIO.

(4) PTCL also referred to the practice prevailing in other countries for charging calls. It was apprised that Singtel is charging interconnection rates for both successful and unsuccessful calls from other operators and the FCC in its Order dated 23rd February 2005 directed AT&T to pay access charges even for inter-state calls while for intra-state calls, the charges were already being paid by AT&T. The Authority, however, noted that these references are not directly comparable with the situation in hand i.e. charging of 'Non-Revenue Time' of calling card traffic.

5. THE HEARINGS

(1) The issue of 'Non-Revenue Time' was first raised by the industry during the consultation process on PTCL RIO in 2004. At that time, a number of meetings were held with the operators as well as PTCL. The operators were concerned as to why PTCL in its revised draft RIO has deleted the charging mechanism for PCCS. PTCL apprised the Authority during consultative meetings that such charges shall be mutually negotiated with the operators, which never materialized.

(2) During the meetings conducted with PTCL and LDI operators on 10th January 2005, 28th February 2005, 31st October 2005 and 6th June 2006; the issue of revenue sharing of 'Non-Revenue Time' was discussed. It was agreed that international best practice shall be studied in order to find out the charging mechanism for such traffic. However, it was noticed that exact comparison of the issue could not be traced at that time with other countries. This point was also agreed by PTCL during its meeting with Callmate Telips, the minutes of which

(No. GM Rev/LDI/2005-06 dated 24th November 2005) state that *“There is no such example with any of regulator or service provider all over the world”*.

(3) PTCL was again invited to discuss the issue in a meeting chaired by Member (Finance), PTA on 10th March 2006, where PTCL was advised to consider the options such as a fixed monthly E1 charge with no origination charge, discount on existing origination charges, no charge for initial few seconds etc. PTCL agreed to consider these proposals or some other viable solution but later apprised through its letter dated 4th April 2006 that PTCL shall continue to charge LDI operators for ‘Non-Revenue Time’ of PCCS traffic.

(4) In order to bridge the gap between the parties, the Authority invited comments on the following two proposed mechanisms from PTCL as well as LDI operators vide its letter No. 15-43/06(CA)/PTA dated 10th August 2006:

- (i) A fixed E1 charge with no origination charges on ‘Revenue Time’ as well as on ‘Non-Revenue Time’.
- (ii) Discount on existing origination charge for both ‘Revenue Time’ and ‘Non-Revenue Time’.

(5) However, PTCL vide its letter No. P&R/DI/02/2005 dated 16th August 2006 provided its comments where it retained its original position by stating that charging of ‘Non-Revenue Time’ of PCCS by PTCL is in accordance with its RIO terms. PTCL also denied the very existence of any dispute or issue in this regard. Surprisingly, PTCL stated that time period given is too little to analyze the proposals without recognizing the fact that these proposals were already conveyed to PTCL by the Authority during the meeting held on 10th March 2006.

(6) LDI operators, on the other hand, provided their viewpoints along with the supporting facts and figures, for which a meeting was arranged with LDI operators on 18th August 2006. Both proposals were discussed at length with the operators from technical, legal and commercial point of view. However, the LDI operators concluded that they are not willing to share cost with PTCL for the service in contravention of the provision of approved PTCL RIO. They demanded that there should be no unfair discrimination between LDIs and PTCL O&M contractors and similar charging mechanism for 'Non-Revenue Time' should be followed for both parties.

6. PCCS OFFERED BY LDI OPERATORS

(1) The prepaid calling card services are provided by the LDI operators through their nationwide interconnection links that are mainly leased from PTCL. Access to IN platform of LDI operators is provided by PTCL through 125X codes.

(2) Once a PTCL subscriber as an LDI's calling card customer dials the 125X access code, PTCL hands over the call to the LDI operator through the interconnection links dedicated for national origination and termination. In some cases the operators have further segregated the E1s for 125X related origination and termination or for 125X origination only. The LDI operator from the Point of Interconnection (PoI) takes the call to its IN Platform, which is generally located at one location in Pakistan. The cost of carrying the call (signaling as well as voice) from the POI to the IN Platform is borne by the LDI operators. After the balance verification process the customer is allowed to dial the NWD and International calls to Fixed or Mobile networks.

(3) The national interconnection links used for origination of traffic on 125X code can also be used for long distance termination from the LDI operator's own PCCS, origination and termination for carrier pre-select, origination and termination for call-by-call carrier selection, transit services, Freephone services,

PRS services and long-distance calling services offered to other Local Loop Operators.

(4) It is noted that a number of LDI operators who are only offering PCCS have dedicated trunks for 12XX access codes. However, other LDI operators have not segregated the trunks for 125X for better utilization of resources for multiple services.

(5) The Authority observed that currently PTCL can not distinguish between the duration of 'Non-Revenue Time' and 'Revenue Time', unless the call is terminating on PTCL's own network, as LDI operators are not providing any signaling to PTCL for indication of the same.

(6) The Authority feels that the 'Non-Revenue Time' is dependent on following factors:

- (i) Type of called network i.e. mobile, fixed-line;
- (ii) Call destination i.e. domestic calls, international call;
- (iii) Time taken to dial the numbers and whether the complete voice recorded messages are listened by the customer;
- (iv) Time to answer a call by the called person after it has been initiated from the IN platform; and
- (v) Reason for unsuccessful calls, which includes, but not limited to, number busy, number not responding, level of ASR etc.

(7) The Authority also noted that access to IN platform of the LDI operator is normally achieved within approximately five (5) seconds when the signal from the IN platform is received to PTCL and it starts charging for origination. However, in the case of normal calls that are made without the 125X take a longer duration than

five (5) seconds to establish a call and in such scenarios, engaged and system congestion based calls are not charged.

7. PCCS UNDER PTCL O&M AGREEMENTS

(1) PTCL is also offering PCCS through O&M Agreements where it gives discount to its O&M partners on total PTCL billing for post balance verified successful calls. Through these O&M Agreements, installation and operations of IN Platform and the marketing and distribution of PCCS is outsourced to the O&M partners. PTCL also has its own PCCS which is marketed as PTCL Calling Card. The billing for these operations is based on normal PTCL tariffs less bulk discounts.

(2) Under the PTCL PCCS, PTCL subscriber who is a customer of PCCS also gets access to the Service Switching Points (SSP) of the IN Platform through 10XX code. The SSPs of O&M partners are located in maximum of 3 locations in Pakistan (Islamabad, Lahore and Karachi). Since the calls either terminate on PTCL's network or other networks through the outbound E1s of the IN Platforms that are connected with PTCL switches, PTCL's billing system can calculate 'Revenue Time' as well as the relevant call charges.

(3) The Authority noted that PTCL bills its O&M partners only for the 'Revenue Time' call duration that is measured when a call is established after the balance verification process from the IN Platform. The origination charges pertaining to the successful calls in the above scenario are inherently built in the tariffs that are charged by the O&M partners. The traffic sensitive charges that an O&M partner has to pay are based on the traffic for which it charges the PCCS customer. Neither the PTCL subscriber nor the O&M partner is obliged to pay for the 'Non-Revenue Time' on the basis of call traffic.

(4) Access to PTCL PCCS is provided through dedicated E1s that are connected with the SSP of the O&M partner. PTCL charges a standard Rs. 6,000 per E1 per month to its O&M partners as capacity charges to cover the cost of 'Non-Revenue Time' as well as cost of carrying call to the SSPs that are located in maximum of 3 locations in Pakistan.

8. COMPARISON OF PTCL PCCS AND LDI PCCS

(1) Both PTCL PCCS and LDI PCCS charge tariffs to their customers for 'Revenue Time' only. LDI PCCS carry traffic on their own leased circuits and have their own tariffs, based on their cost structures. PTCL PCCS on the other hand do not have leased media to carry the long distance and international voice traffic and handover the calls to PTCL's network for call carrying and termination. The tariffs charged by PTCL to its PCCS customers are based on its costs and include the inherent interconnection costs such as origination /termination and Fixed E1 capacity charges.

(2) From customer's point of view both services have no distinguishing feature and selection is made on the basis of quality, tariffs, and availability.

9. INTERNATIONAL PRACTICE

(1) The Authority noticed that internationally, the cost of providing access to IN Platform is mutually negotiated on commercial terms (as is the case in Malaysia). It can also be based on a fixed capacity charge or on per minute charge. This option was also provided to PTCL and the LDI operators time and again, however, both the parties could not make consensus on the issue. The Authority also observed that in UK the customer has to pay for a local call to access the IN Platform of the PCCS provider.

(2) The example of Singtel provided by PTCL was also reviewed by the Authority but was not considered relevant to the dispute on hand as it refers to charging of calls on unsuccessful as well as successful basis which is a totally different regime and for different category of service.

(3) It was also noted that in developed countries, the charging of origination is not based on successful calls rather a call setup charge is applicable at both retail and wholesale level, and therefore the question of 'Non-Revenue Time' does not arise. On the contrary, a majority of countries charge their customers only when the dialed party responds and the call is established.

10. THE AUTHORITY'S OBSERVATIONS ON PTCL RIO

(1) The Authority observed that the issue has not been explicitly covered in the PTCL RIO. Moreover, the deletion of Clause 3.5 of Schedule 11 of draft PTCL RIO dated 15th April 2004, which specifically provided the charging mechanism of PCCS without any explanation by PTCL is questionable.

(2) The Authority also noticed that Schedule 11 of PTCL RIO has precedence over the Schedule 3 and the call has to be charged only when the "called party" answers. However, Schedule 13 of current PTCL RIO duly provides the definition of "calling party", whereas the "called party" has not been defined in the whole PTCL RIO, which again resulted in the dispute between PTCL and LDI operators.

(3) The Authority observed that PTCL took considerable time in submitting its RIO to the Authority by claiming that it has engaged an International Consultant for the task. However, it was later discovered that PTCL RIO was mainly adopted from the Singtel RIO and did not fully address the specific circumstances of Pakistan telecom sector. During the consultation process, the industry highlighted a number of points where either the PTCL RIO was not very clear or there were inconsistencies in the document. The operators also claimed that it is an anti-

competitive practice on the part of PTCL to prepare such a huge document which could not be fully analyzed by the industry in the given time period. Although, the Authority made considerable changes in the draft PTCL RIO to make it more transparent, balanced and in accordance with international best practices, however, the issue of charging mechanism of 'Non-Revenue Time' of PCS traffic remained un-addressed.

(4) The Authority also established that the PTCL interconnection charges do not fully comply with the Clause 18.2 (b) of the Interconnection Guidelines which states that *"Interconnection charges shall be set on objective criteria and follow the principle of transparency and cost orientation"*, as PTCL should have covered the charging mechanism of PCCS in its RIO before provision of said service to LDI operators. Moreover, as per Clause 5.7 of the Guidelines *"Cost of inefficiencies of an operator should not be passed on to other operators through higher interconnection charges"*. Hence, failure to cover such charge in its RIO should not result in extra charges to LDI operators for 'Non-Revenue Time'.

(5) Moreover, the cost study presented to the Authority by PTCL in support of its proposed interconnection charges mentioned in the RIO did not include the 'Non-Revenue Time' in the call-minutes due to which the per-minute origination/termination charges were inflated. If 'Non-Revenue Time' was included in the total call-minutes then the origination charges of PTCL would be reduced accordingly.

11. OPTIONS UNDER CONSIDERATIONS

(1) Based on foregoing, the Authority established that the issue could not be resolved through provisions of PTCL RIO and has identified the following options, which could be evaluated to resolve the dispute between the parties:

(i) Option I - Charging of 'Non-Revenue Time' at Existing PTCL Origination Charges

(2) This option conforms to the stance of PTCL. However, based on prevalent low ASR and other reasons as given below for 'Non-Revenue Time', this option would result in significant increase in effective origination charges for 'Revenue Time'. As a result, the input cost of the LDI operators' PCCS will increase, thus making it difficult for them to compete with the (i) PCCS offered by PTCL where this cost is internal and (ii) O&M partners of PTCL whose cost of 'Non-Revenue Time' is relatively insignificant i.e. Rs. 6,000 per E1 per month.

(3) Moreover, it was noted that it takes approximately five (5) seconds to connect to the IN Platform of the LDI, providing PCCS. However, in case of a normal call that does not involve access to IN Platform of the LDI operator, PTCL's network resources are utilized for a longer time due to 'Non-Revenue Time', which under this option includes (i) dialing of at least seven digit number (ii) time to generate answering tone (iii) time taken by the called party to respond (iv) listening to voice recorded message if number is not available (as in the case of mobile numbers etc.) and (v) time taken for unsuccessful calls.

(4) Based on the above, the Authority is of the view that this option cannot be used to resolve the dispute between the parties.

(ii) Option II - Charging of Origination Charges When Call is Established Between the PCCS Customer and the Called Person

(5) This option was put forth by LDI operators and would bring similarity between the charging principles between LDI PCCS and PTCL's own PCCS. However, this could give incentive to LDI operators to offer other services to their customers within the 'Non-Revenue Time', which would place unnecessary burden on PTCL's resources without any compensation.

(6) There is also a limitation that PTCL will have to rely on the signaling from the LDI operators to determine the 'Non-Revenue Time'. Moreover, as the 'Non-Revenue Time' utilizes PTCL's resources, therefore on the principle of cost-orientation PTCL should get some charges from LDI operators. Even in the case of PTCL's O&M Agreements, the O&M partners are paying fixed charges of Rs. 6,000 per E1 per month to PTCL.

(7) Last, but not the least, PTCL has not covered the charging mechanism of 'Non-Revenue Time' in its RIO due to which the business models of LDI operators were built on the assumption that there would be no charges for such service.

(8) Keeping the above into consideration, the Authority is of the view that this option cannot be applied.

(iii) Option III - Waiver of Charges on Initial Few Seconds

(9) The LDI operators have also proposed this option and it was verbally communicated to PTA that in Germany this option is practiced, where first thirty (30) seconds of calls are not charged.

(10) The Authority is of the view that this option may be considered by the parties for future arrangements.

(iv) Option IV - Charging Customers for dialing 12XX codes by PTCL

(11) As practiced in UK, this option was also considered by the Authority. However, the Authority observed that this option cannot be implemented as retrospectively billing to customers would not be possible.

(12) Nevertheless, this option may be considered by the parties for future arrangements.

(v) Option V - Fixed Monthly E1 Charges

(13) The proposal of fixed monthly E1 charges can only be implemented if the E1s of LDI operators are dedicated for 12XX access. However, this is not the case

for all LDI operators. One of the LDI operators has also opposed this idea, as in its opinion this would reduce its flexibility and efficiency of E1 utilization. It was pointed out that PTCL has already dedicated the trunks of LDI operators for international incoming calls, which could otherwise be used for national traffic during off-peak timings on international trunks.

(14) The operators were also unable to make consensus among themselves on the basis for developing a fixed E1 charge.

(15) The Authority, therefore, is of the view that this option cannot be exercised.

(vi) Option VI – Discount on Existing PTCL Origination Charges

(16) Under this option, discounted origination charges will be charged on the ‘Non-Revenue Time’ as well as ‘Revenue Time’ by PTCL.

(17) This option will result in greater certainty and can be applied retrospectively without any foreseeable difficulty. The said option is also easy to implement, as PTCL does not have to rely on LDI operators’ signaling to distinguish ‘Non-Revenue Time’ from ‘Revenue Time’. This option is based on the recognition of the costs involved and thus an equitable sharing mechanism can address the concerns of PTCL as well as LDI operators. Moreover, the need to make retrospective billing adjustment would not be required for retail customers. The Authority, however, recognizes that LDI operators need some time to pay the past accumulated balance of the said charges to PTCL, as the same was not made clear by PTCL in its RIO.

(18) The determination of discount on origination charges mainly depends on ‘Average Non-Revenue Time’. To estimate the ‘Average Non-Revenue Time’, the following variables are required:

- (i) Answer to Seizure Ratio (%);
- (ii) Average Revenue Time (Seconds);

- (iii) Average Non-Revenue Time if the Call is answered by the Called Person (Seconds);
- (iv) Average Non-Revenue Time Related to Unsuccessful Calls (Seconds); and
- (v) Other Non-Revenue Call Time (e.g. balance enquiry etc.) as a percentage of Total Time (%).

(19) Since a generally acceptable range of data is available on the above variables, a methodology can be developed for a solution that can be applied retrospectively as well as for future, unless the operators mutually agree on an alternative arrangement.

Estimating Non-Revenue Time

(20) Based on the discussions and the information provided by the LDI operators, and actual usage of PCCS by the officers of the Authority to estimate the ‘Non-Revenue Time’, following set of inputs have been taken to determine relationship among ‘Non-Revenue Time’, ‘Revenue Time’ and Total Time:

(i) Answer to Seizure Ratio (ASR) (%)	40%
(ii) Average Revenue Time (Seconds)	180
(iii) Average Non-Revenue Time if the Call is answered by the Called Person (Seconds)	45
(iv) Average Non-Revenue Time Related to Unsuccessful calls (Seconds)	50
(v) Other Non-Revenue Call Time (e.g. balance enquiry etc.) as a % of Total Time (%)	3.3%

(21) The results of the methodology show that the ‘Non-Revenue Time’ comes out to be around 42% of the ‘Total Time’. The LDI operators during the meeting submitted that ‘Non-Revenue Time’ is around 43% of the ‘Total Time’. However, one of the operators also claimed this percentage at approximately 60%.

(22) The average time duration for a call based on the above variables is summarized as following:

- ? Non-Revenue Time = 52.2 seconds
- ? Revenue Time = 72 seconds
- ? Total Call Duration = 124.2 seconds

(23) The notional origination cost of 'Revenue Time' and 'Non-Revenue Time' can be derived by multiplying them with the local origination charge of Rs. 0.52 per minute. The results are as following:

Origination Cost

Non-Revenue Time	52.2 * 0.52/60 = Rs. 0.45
Revenue Time	72 * 0.52/60 = Rs. 0.62
Total Call Duration	124.2 * 0.52/60 = Rs. 1.08

(24) To share the 'Non-Revenue Time' between the LDI operators and PTCL the following table evinces a few scenarios regarding discount on origination charges:

	Scenario 1		Scenario 2	
	%	Rs.	%	Rs.
Share of LDI Operator in Non-Revenue Time	40%	0.18	50%	0.225
Share of PTCL in Non-Revenue Time	60%	0.27	50%	0.225
Total Non-Revenue Time	100%	0.45	100%	0.45
Origination Charge per minute	Rs. 0.39		Rs. 0.41	
Discount on Origination Charges	25.21%		21%	
Effective Origination Charge for NRT per minute	Rs. 0.21		Rs. 0.26	

(25) Origination charges for metropolitan zone have been assumed and in actual working any amount of average origination charge based on distance and time slab will result in the same sharing ratio based on the above noted discounts on origination charges. The methodology used is attached as Annex -I to this Determination.

Non-Revenue Time for PTCL PCCS

(26) The fixed E1 charges paid by the PTCL O&M partners includes the 'Non-Revenue Time' as well as the cost of carrying call to the IN platform which is generally located in one to three regions. In many cases, the call during 'Non-Revenue Time' as well as the 'Revenue Time' may not be in the direction of the called number for which 'Revenue Time' is charged.

(27) The E1s dedicated for PTCL's O&M partners are also used for terminating the calls. E1 consists of 30 voice channels and for domestic business the system capacity is built on 350,000 minutes per month per E1 (6.48 hrs use per day per voice channel).

(28) Generally, a ratio of 19 : 11 is observed between incoming and outgoing calls which is reflective of more incoming calls staying on the IN Platform due to 'Non-Revenue Time' related activities such as balance verification etc. For the purpose of prudent calculations, the ratio between incoming and outgoing calls can be assumed at 15 : 15.

(29) The calculation for cost per minute for 'Non-Revenue Time' for PTCL O&M partners is given below:

	Scenario 1	Scenario 2
Cost per channel (Rs.)	6,000	6,000
Incoming Channels	15	15
Minutes per Month	175,000	175,000
NRT (Percentage)	42%	20%
NRT (Minutes)	73,500	35,000
Cost per Minute (Rs.)	0.08	0.17

12. THE DECISION

(1) Keeping in view the foregoing, the Authority hereby determines that provisions of the PTCL RIO are not clear as to how the 'Non-Revenue Time' of PCCS should be charged. The Authority hereby decides that:

(i) PTCL shall charge its existing origination charges to LDI operators for both 'Non-Revenue Time' and 'Revenue Time' on PCCS traffic after giving 25% discount.

(ii) The parties shall make necessary amendments in their interconnect agreements to comply with this Determination. LDI operators shall settle their past accumulated dues with PTCL relating to the issue, for both 'Revenue Time' and 'Non-Revenue Time' of PCCS traffic, at discounted origination charges within six (6) months of this Determination.

(2) The Authority is currently reviewing the PTCL RIO for Fixed-line operators with consultation of all stakeholders. PTCL as well as the operators may submit their proposals on the subject of charging mechanism of 'Non-Revenue Time' of PCCS along with supporting details to the Authority so that the same can be covered in the forthcoming PTCL RIO.

(3) This Determination shall come into force with immediate effect from the date of issuance and shall be applied retrospectively i.e. the date of signing of interconnection agreement between PTCL and respective LDI operator.

(4) In case of any doubt with regard to the interpretation of any provision of this Determination, the decision of the Authority shall be final.

Maj. Gen. (R) Shahzada Alam Malik
Chairman
Pakistan Telecommunication Authority

S. Nasrul Karim A. Ghaznavi
Member (Finance)
Pakistan Telecommunication Authority

This determination is signed on this 21st day of August 2006
and comprises of 27 pages including Annex-I

METHODOLOGY FOR DETERMINATION OF DISPUTE ON ORINATION CHARGES ON PCCS

Answer to Seizure Ratio (ASR)	40%
Average Revenue Time (Seconds)	180
Average Non-Revenue Time if the Call is Answered by the Called Person (Seconds)	45
Percentage of Unsuccessful Calls (1 minus ASR)	60%
Average Non-Revenue Time Related to Unsuccessful Calls (Seconds)	50
Origination Charge per minute (Rs.)	0.52
Percentage Sharing of NRT (%)	59%
Discount on Origination Charges (%)	25%
Origination Charge per minutes after discount (Rs.)	0.39

Minutes Distribution by Traffic Composition	Seconds	Charges	Discounted Charges
Revenue Time (RT) [1 x 2]	72	0.62	0.47
Average Non-Revenue Time if the Call is Answered by the Called Person [1 x3]	18	0.16	0.12
Average Non-Revenue Time Related to Unsuccessful Calls [4 x5]	30	0.26	0.20
Average Total Time (Based on Post Balance Verification ASR) [10+11+12]	120.0	1.04	0.78
Average NRT for Balance Enquiry/Other Calls upto IVR	4.4	0.04	0.03
Average Total Time (Total NRT + RT)	124.4	1.08	0.81
Total Non-Revenue Time [11+12+14]	52.4	0.45	0.34
Total Revenue Time	72.0	0.62	0.47
Total Time [16+17]	124.4	1.08	0.81
Effective Charge Per minute for Revenue Time (Rs.)		0.898	0.674
Savings after discount (Rs.) [0.898 - 0.709]			0.27
Savings (%)			59.4%
Effective Origination Charge per NRT Minute (Rs.)			0.21