



**ITU Forum of the Regional Working Group (RWG) on  
Private Sector Issues – Asia & Pacific Region**



**“Promoting ICT Technologies & Broadband Applications”**

Bangkok, 3-5 August 2005

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Document No. RWG-ASP/09

Version 1.0

3 August 2005

Original: English

# **BACKGROUND PAPER ON LEVIES AND INTERCONNECTION CHARGES**

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August 2005

## 1.0 Background

The Second ITU Forum of the Regional Working Group on Private Sector Issues discussed “Cost of duties and levies”, “Spectrum” and “interconnection” related issues last year in New Delhi. The recommendations of the Forum were oriented towards reduction in the operator’s total cost accruing on account of various levies and duties imposed by the Government and Regulator. The forum proposed certain principles and benchmark ceilings on cost of levies & duties (Annexure 1). The two general principles enunciated were

- Minimizing entry barrier for the take-up of service would lead to greater investment in Telecommunication sector, which in turn will lead to GDP growth.
- Government’s focus should be to accelerate the growth in the Telecom sector and earn revenues from increased usage.

The third forum is envisaged to build on these recommendations in light of new developments and enhanced information sharing.

## LEVIES

### 2.0 Framework of Levies

The Government / Regulatory levies add on as the service provider enters, evolves and matures (Figure 1). Each of these levies has had its own genesis and purpose. Some of these are a result of the Corporate taxation / General

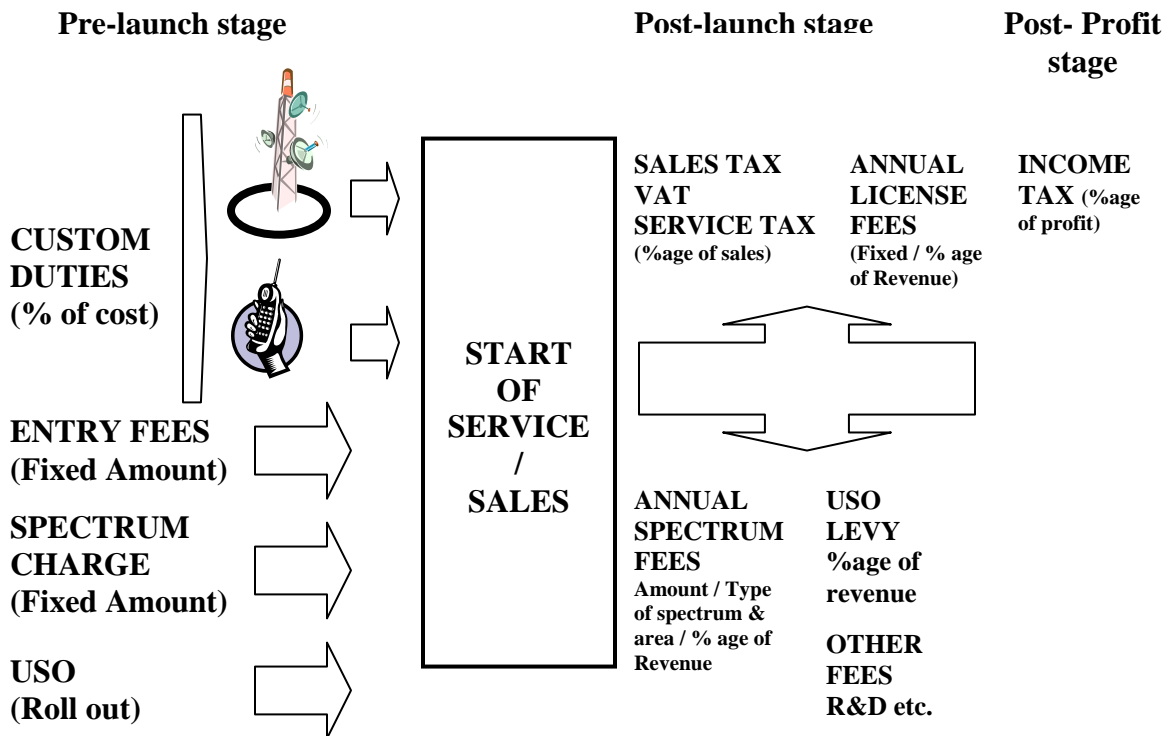


Figure 1: Framework of various levies in the Telecom Sector

Direct / Indirect taxation norms applicable to all or a group of industries while others are sector specific that have traditionally emanated from the specific policy objectives of Government & Regulator pertaining to telecommunication sector. The end result however is a series of levies (Table 1) imposed on service providers, which add on to the costs of service provision eventually getting built in the end user tariffs. The second forum on private sector issues had recommended initiatives to reduce or restructure them.

**Table 1: Various levies imposed on the telecom sector**

<b>General levy</b>	<b>Brief Description</b>	<b>Stage of levy</b>
Sales Tax / VAT / Service Tax	Imposed as the consumer chooses to consume.	Post sale
Corporate Income Tax	Funding Public Service from the profits	Post profit
Custom Duties	Applicable to import of telecom equipment and handsets, support local industry	Pre launch
<b>Sector specific levy</b>		
<b><i>One time charge</i></b>		
Entry Fees	Selection criteria, Government revenue, Avoiding non serious players, Legacy reasons	Pre launch
Spectrum Access Fees	Promote efficient usage, Government revenue, Selection criteria	Pre launch
<b><i>Annual charge</i></b>		
Service License Fees	Source of revenue for the government as a fee, meeting the cost of administration.	Post sale
Spectrum License Fees	Source of revenue for the government as a fee, meeting the cost of administering the spectrum	Post sale
USO Levy	To fund rural development / subsidizing affordable service	Post sale
Other fees, e.g. R&D	To promote specific requirements	Post sale

The reforms in the General Levy have much wider scope and hence have greater ramifications on the government revenues as compared with the sector specific levies. Also, achieving an equitable balance in such a reform spanning across sectors is more difficult when compared with that within the sector.

In the telecom sector specific levies, the trend over the years has been to lower the entry barrier and reduce the annual license fees. The main principle underlying such trend is the growing awareness of the positive impact of communication penetration on the economy. Higher regulatory costs get

reflected in the higher tariffs to the consumers, thereby exhibiting a '**scissor effect**'. On one side the tariff levels continue to hurt the consumers, deter penetration and devoid the economy of the potential benefits, while on the other side its unaffordability deters revenue growth, the corporate sales & profits and hence the tax collection levels. The subsequent sections examine these levies in greater details.

## **2.1 One time charge**

Under Individual Licensing regimes, the right to provide services and the access to scarce resources (spectrum associated inter-alia) were often bundled and then offered at high one time entry fees. This entry fees was usually set through an auction / beauty contest mechanism. The advent of new technologies and its manifestations called for separation of the two elements viz. Authorization to provide service and Access to Scarce Resources (Spectrum, Numbering etc.) to provide greater flexibility.

There emerged a clear trend of reducing the barriers to entry wherein countries chose to adopt low entry fees levels / no entry fees. Some examples include Australia (A\$ 10,000), Malaysia (10,000 RM application fee + 50,000 RM approval fees), EU countries. While accelerating the process of entry barrier reduction, some countries have provided incentives, concessions or staged reduction in license fees (e.g. India, Malaysia, and Singapore) to ensure level playing field between existing licensees and new entrants.

Although the cost of market access is on the decline, the cost of spectrum access still has varying results (Table 2). The experience from even recent results indicates high costs paid by operators. At times these high prices are a result of market based allocation procedures adopted by Regulators to promote efficiency and transparency rather than an effort to maximize revenues.

**Table 2: License fees for 2G license (samples)**

Country	Population	Licensing methodology	Initial license fee (USD) per license	Number of licenses offered	Type of license awarded	Initial duration of license
<b>2004</b>						
Algeria	31.3 million	Auction	421 million	1	3 <sup>rd</sup> GSM	15 years
Iran	65.5 million	Beauty Contest	Not Published	1	2 <sup>nd</sup> GSM	15 years
Jordan	5.3 million	Beauty Contest (fixed fee)	6.6 million	1	3 <sup>rd</sup> mobile	15 years
Oman	2.8 million	Beauty Contest	62.4 million	1	2 <sup>nd</sup> mobile	15 years
Pakistan	159.2 million	Auction	291 million	2	2 <sup>nd</sup> and 3 <sup>rd</sup> mobile	15 years
Saudi Arabia	23.1 million	Beauty Contest	3.25 billion	1	GSM	25 years

Source: Adapted from Trends in Telecommunication Reform 2004/2005

The point to ponder is what are the alternatives to the existing market based mechanism that would keep the cost of spectrum access low, while at the same time meet the regulatory objectives of efficient utilization, transparent allocation and technology & service neutrality.

## 2.2 Annual Charge

The annual charges pertaining to license fees, USO levy and other levies is generally a percentage of revenue. The annual charging mechanism for spectrum however varies from one country to another.

### 2.2.1 Annual License fees

Significant variation exists amongst the countries in the amount of annual license fees levied on operators. In most cases, the annual license fees range from 0.2% to 15%. ITU's **Trends in Telecommunication Reform 2004 / 2005** notes that

*“Recently implemented revenue-sharing schemes usually impose lower rates, ranging from 0.2 per cent to 2 per cent, but significant exceptions still remain”.*

There is a growing trend to reduce the annual recurring fee in a direction where the purpose of the levy would be to cover just the cost of Administration. Table 1.3 provides some international experience on the reduction of entry fees / license fees.

**Table 1.3: Initiatives to reduce annual license fees**

Country	Initiatives to reduce levies
European Union countries	Authorization Directive <a href="#">2002/20/EC</a> required that license fees be charged just to cover the cost of administration
India	License fees (incl. USO) reduced from 15% to 5~10%. Proposal to make it 6 % uniform under consideration.
Pakistan	Reduction of annual license fees from 4% to 1.5% and then to 0.5%
Venezuela	Gradual reduction from 10% to 5.3%

Source: Regulatory Authority websites, ITU Trends in Telecom Reform 2004/05

Annexure 2 provides the annual license fees in a selected number of countries.

### 2.2.2 Annual Spectrum Charge

Annual spectrum charges are normally paid by service providers as a usage charge. These charges are a function of spectrum band, amount of spectrum, shared / dedicated usage, area of exclusive operation etc. Some countries also levy these charges as a percentage of revenue.

The purpose of this charge varies from covering the cost of administering the radio frequencies to promoting efficient usage. In the new EU framework, the purpose of this fee is recognized mostly as one of these two objectives, the Authorization Directive states

“In addition to administrative charges, usage fees may be levied for the use of radio frequencies and numbers as an instrument to ensure the optimal use of such resources. Such fees should not hinder the development of innovative services and competition in the market. This Directive is without prejudice to the purpose for which fees for rights of use are employed. Such fees may for instance be used to finance activities of national regulatory authorities that cannot be covered by administrative charges.”

The two most common approaches are to charge a fixed amount for the spectrum i.e. per MHz basis or to charge as a percentage of revenue. While the first approach encourages efficiency the second has the advantage of having a lower burden at early stage of operations.

### 2.2.3 USO Levy

All countries have adopted one or more means to subsidize access to commercially unviable regions and to consumers who can not afford completely rebalanced tariffs. Service Providers often have obligations / funding requirements to contribute towards meeting Universal Service objectives. The WTO Reference Paper recognizes the need for USO and states that

“Such obligations will not be regarded as anti-competitive *per se*, provided they are administered in a transparent, non-discriminatory and competitively neutral manner and are not more burdensome than necessary for the kind of universal service defined by the Member.”

The growing trend is to establish a separate transparent USO Fund that is administered in a transparent manner. The contribution by the service providers are generally in the form of a revenue share, and the amount varies with the country. The scope of USO objectives determines the size of levy.

**Table 1.4: USO levy for a few countries**

Country	USO Levy
China	Nil
Colombia	5%
Dominican Republic	2%
India	5%
Malaysia	6%
Pakistan	1.5%
Peru	1%
Russia	2%

Source: ITU Regulatory database, INTELECON Research, country regulators

The importance of the levy was recognized by the Second Forum and the recommendation of the Forum was

*“It is a necessary levy and should be properly utilized exclusively for Rural Telecommunication. Levy to be determined by Government from time to time and to be capped at 5%”*

In recent times, some countries such as Israel have included rural broadband within the framework of USO. On the other side the EU is discussing the following long term financing issues

*“Is a universal service funding scheme an appropriate means to address the objective of social inclusion in a competitive communications environment?  
Is funding from general taxation a viable alternative?”*

### 3.0 General Levies

#### 3.1 Custom duties / Import duties

Custom / Import duties are general levies imposed at the raw material stage and hence they impact the service providers during their nascent stage of operation. Table 1.5 provides the applicable custom duties on Telecom infrastructure and handsets for a few countries.

**Table 1.5: Import duties on telecom in some developing countries**

	Import duties (in %age)	
	Handsets	Infrastructure
China	0	0
Pakistan	0	10
Sri Lanka	0	0
Malaysia	0	0
Singapore	0	0
Hong Kong	0	0
India	5	16

*(Source: Country Regulators / Ministries ITU Regional Working Group Forum, April 26-27, 2004, New Delhi)*

Among the countries of the region, it can be observed that most countries do not impose import duty on the telecommunication handset and equipment.

#### 3.2 GST / Service Tax/ VAT

Service Tax / VAT / Sales TAX are levied on the final purchase of the product i.e., on the final revenue while Corporate Income TAX is levied on the profits. The difference between the two is that while the amount paid by an individual in form of GST depends on his choice to consume the Corporate TAX is levied on his level of income irrespective of his consumption behaviour. These Taxes have

lower impact when compared with the sector specific levies imposed at the pre launch or early stages of the launch. Further, they create less distortion amongst sectors competing for the same dollar of consumer spending. However, they do affect the expected Return on Investment of the operators and get built in the end user tariffs.

#### **4.0 The composite picture**

The emerging practice is to make telecom services more affordable by reducing the cost of levies on the operators and by promoting competition. It is important to have the composite picture of various levies imposed on the service providers as it is the net outgo that reflects in the end user tariffs and the service provider's bottom line. However, the structure of the levies applicable has different impact on operators at different stages. The effort should be to move in a direction where the levies framework is restructured to minimize the cost imposed on the service providers while fulfilling the policy objectives of the Government and Regulator. In one of the studies carried by the Indian Regulator, it was demonstrated that the loss in license fees by way of an immediate reduction in license fee<sup>1</sup> as well as a change in structure would in the long run be more than compensated by the additional revenue generated through increase in volumes.

#### **5.0 ITU initiatives**

ITU's Trends in Telecommunication Reform 2003 & 2004/2005 provide a comprehensive study on the levies pertaining to Universal Access and Licensing & Spectrum respectively. An on-line Spectrum Fees databank has also been set-up, which provides information on the international practices on spectrum management. The Private Sector Forum itself provides an opportunity to discuss issues of common concern and share each others experiences.

#### **6.0 The Third Forum and the way forward**

The Third Forum would carry the discussion further and deliberate on the issues of levies concerning the private sector. The Forum is expected to provide their recommendations to the ITU on the way forward. The key issues to sum up are

1. What is the recommended levy framework that creates a win-win situation for Private sector and the Government?
2. How to keep the levies down where market based allocation is required for the purpose of efficient use and transparency?

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<sup>1</sup> This reduction also included a migration from fixed license fees to a revenue share

## Interconnection Charges

### 7.0 Background

The Second Forum discussed the various elements that comprise an interconnection framework and provided their recommendations on the following key issues (Annexure 1).

- Ensuring effective interconnection to the new entrants in a fair, transparent, timely & nondiscriminatory manner
- Publication of Reference Interconnection Offer & its various elements
- Costing approach for unbundled network elements
- Remedies available to non availability of timely Interconnection
- Role of the Regulator in facilitating effective interconnection
- Quality of interconnection
- Equal Access

Moving further, the Third Forum is focusing with greater depth on the issues of Interconnection charges.

### 8.0 Principles of Interconnection Framework

WTO Reference Paper laid down the basic principles of the interconnection framework (Text Box 1). These principles were manifested in various regulations, agreements, guidelines and arrangements over the years. The three most contentious issues, however, have been the timely availability, unbundled access and the cost based pricing of interconnect resources. Regulators have adopted regulatory measures that impose requirement for incumbents / Dominant Service Providers to publish a Reference Interconnection Offer (RIO) with the terms and conditions duly approved. A number of regulators have also required unbundled access to the network elements of Dominant Service Providers and the basis of regulating the charges for these resources has mostly been the costs incurred.

### 9.0 Interconnection charges

Despite following the same principle of cost orientation, there have been frequent disagreements over the end result, not only between operators but also between Regulator and Operators. The differences vary from the choice of costing methodologies to the cost allocation process.

The gamut of interconnection Charges contains origination, carriage and termination rates. The Carriage charges are either based on distance slabs (e.g. India, Pakistan) or on the number of transits viz., Local, Single or Double (e.g. European Union Countries, Malaysia). Interconnection charges in a few Asia Pacific countries are provided in Annexure 3.

Text Box 1.1: WTO Reference Paper (Sections pertaining to Interconnection)

**Interconnection**

2.1 This section applies to linking with suppliers providing public telecommunications transport networks or services in order to allow the users of one supplier to communicate with users of another supplier and to access services provided by another supplier, where specific commitments are undertaken.

**2.2 Interconnection to be ensured**

Interconnection with a major supplier will be ensured at any technically feasible point in the network. Such interconnection is provided.

(a) under non-discriminatory terms, conditions (including technical standards and specifications) and rates and of a quality no less favourable than that provided for its own like services or for like services of non-affiliated service suppliers or for its subsidiaries or other affiliates;

(b) in a timely fashion, on terms, conditions (including technical standards and specifications) and cost-oriented rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the supplier need not pay for network components or facilities that it does not require for the service to be provided; and

(c) upon request, at points in addition to the network termination points offered to the majority of users, subject to charges that reflect the cost of construction of necessary additional facilities.

**2.3 Public availability of the procedures for interconnection negotiations**

The procedures applicable for interconnection to a major supplier will be made publicly available.

**2.4 Transparency of interconnection arrangements**

It is ensured that a major supplier will make publicly available either its interconnection agreements or a reference interconnection offer.

**2.5 Interconnection: dispute settlement**

A service supplier requesting interconnection with a major supplier will have recourse, either:

(a) at any time or

(b) after a reasonable period of time which has been made publicly known

to an independent domestic body, which may be a regulatory body as referred to in paragraph 5 below, to resolve disputes regarding appropriate terms, conditions and rates for interconnection within a reasonable period of time, to the extent that these have not been established previously.

## 9.1 How are interconnection charges set?

The interconnection charges are either commercially negotiated (subject to regulatory intervention on event of failure to agree) or is set by the Regulator. The guidelines on commercial negotiation in general advocates cost orientation. However, there exist other practices as well. In Botswana, BTA set the interconnection charges based on International Benchmarks. ACCC, the Australian Competition Commission arbitrates on Mobile Termination Charges (MTC), once a dispute is filed with them using the principle of pegging movements in Access Price to the Average Retail Price.

The regulatory practice also varies with the type of service. The extent of regulation on mobile termination charge has been significantly less than that of fixed termination charge. However, in recent times there has been growing intervention by Regulators in the determination of Mobile Termination Charges.

## 9.2 The Costing & Modeling approaches

The foremost choice for determining cost based interconnection charges is the one between a Fully Distributed Cost (FDC) Allocation approach and the Long Run Incremental Cost approach<sup>2</sup> (LRIC). While FDC takes into account the actual costs incurred by the operator, the LRIC concept takes into account the costs that would be incurred by most efficient operations.

Also, there is choice to make between the type of modeling process (Bottom up or Top Down). A study by Europe Economics for the Information Society Directorate-General of the European Commission mentions

“A **top-down** approach uses accounting data of an operator, and allocates costs to different services on the basis of views as to the relationships between costs and services. Assumptions need to be made about the scope for efficiency improvements, and to bring historic costs into line with current values.

A **bottom-up** approach involves the development of engineering-economic models in order to calculate the costs of the network elements required to provide particular services, assuming modern technology and efficient methods of operation.”

For bottom-up modeling, a decision has to be made on whether to use a “Scorched Node” or a “Scorched Earth” approach. While the former assumes optimization of the network without changing the nodes the later adopts a Greenfield approach.

Each of the approaches have their pros and cons. While Fully Allocated Costing Methodology is easier to implement and requires less resources, the LRIC (and its variations) approach takes care of built in inefficiencies. A detailed description

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<sup>2</sup> TSLRIC, TELRIC, LRAIC are variants of the Incremental costing approaches

of costing methodologies and principles for Mobile Operators is provided in the contribution by Mr. Ahmad Nadeem Syed, Director Interconnect Mobilink (Pakistan) available at the Forum's website.

The International trend is to move towards a LRIC approach though FDC still remain practiced in a number of countries in the Asia Pacific Region.

### **9.3 Challenges posed by new interconnection requirements**

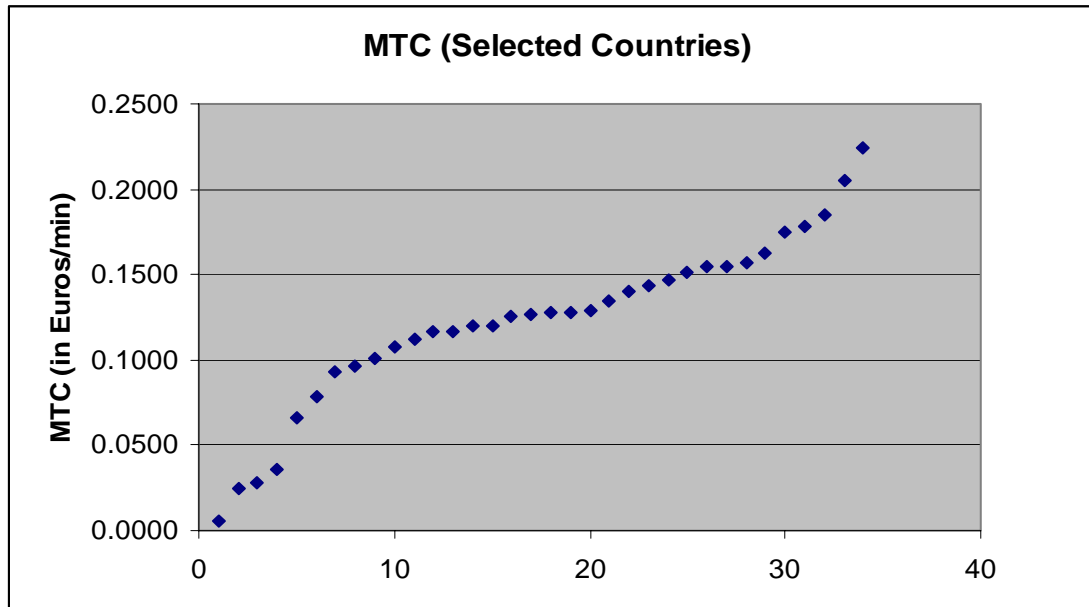
The advent of new services is now posing new challenges to interconnection charge regimes. It is becoming increasingly important that the interconnection charges now reflect the investments made by operators as large number of services now have just access requirements i.e., interconnection requirements are only one way. In case the charges are above cost, it would deter growth of new services while if it is below cost there is no incentive for the access providers to invest. Although the issue is similar to a two way interconnection pricing problem, the negotiation considerations of the two parties in this situation is very different. Internet access is one such example where traffic is both ways but access is one way. As end user services begin to compete (e.g. VOIP) on these two platforms, it would affect the costing structure as well as assumptions made in traditional cost models.

### **9.4 Mobile Termination Charges**

The interconnection charge dispute is more pronounced in the case of Fixed – Mobile as compared with Fixed – Fixed, largely because of dissimilar technical, regulatory and economic structure. Some of the dissimilarities include

- Hierarchical Vs Non hierarchical network structure,
- Non existence of dedicated local loop in mobile network topology as against dedicated local loop in fixed wireline
- Deregulated structure of the mobile sector
- Cost based tariffs of cellular mobile as against regulated social tariffs of fixed
- Higher level of competition in mobile sector as compared with fixed,
- Differences in cost structure

In recent times, Mobile Termination Charges have been the centre of debate in a number of countries. The genesis of the debate can be easily perceived by the variation in these charges across countries (Figure 2).



Source: IRG website, MCMC, PTA, TRCSL, TRAI Study Paper

While on one side, investigations in Europe, New Zealand have revealed above cost pricing of termination, mobile operators in India have been complaining against the low level of MTC. The difficulties in ascertaining the right costs are clearly reflected in a recent report “**Charging alternatives for MNO Termination<sup>3</sup>**” of the Ministry of Transport and Communications, Helsinki, 2005.

The report reads

*“Regulation of mobile network termination charges is based on the cost calculations of call termination. Calculation of cost-based charges is a complicated process and the real cost oriented charge is almost impossible to calculate. All calculation methods include, in addition to costing figures, figures which are impossible to measure.....All calculations include therefore so many presumptions that the resulting “cost-oriented” figure may not have much common with the real cost of the service or market oriented price.”*

#### **9.4.1 Alternatives to cost based pricing**

The report also examines the following possible alternatives to cost oriented pricing

- Competitive pricing of call termination
- Sender Keeps All mechanism
- Termination charges calculated from on-net retail prices
- Termination charges calculated from on-net wholesale prices

<sup>3</sup> The views and proposals in the report are of the author and they do not represent the official position of the Ministry of Transport and Communications, Finland.

- Releasing mobile-to-mobile traffic from regulation
- Releasing fixed-to-mobile traffic from regulation
- Making termination charges visible to callers

The study ends up to a proposal where termination rates of mobile network operators is proposed to be tied with on-net retail call charges.

Then there also exists the ACCC approach of arbitrating in case of disputes using the principle of pegging movements in Access Price to the Retail Price. In some countries, there exists the principle of Reciprocity i.e., same interconnection charges are recovered by either parties.

Despite the alternative approaches mentioned above, a significant number of countries (especially in Asia Pacific region) use costing approaches to regulate MTC. India, Malaysia and Pakistan, are a few to name. TRCSL, the Sri Lankan Regulator has also specified MTC in their proposed migration to a CPP regime based on Fully Allocated Historic Cost (FAHC) methodology.

### **10.0 Interconnection Dispute Resolution**

Interconnection Charge related disputes are a common sight in telecommunication industry. The organization vested with the power to adjudge on these disputes varies from one country to other. In Australia, the Australian Consumer and Competition Commission arbitrates on these disputes, while in India a separate Telecom Dispute Settlement and Appellate Tribunal has been constituted for the purpose. In a number of countries (e.g. Brazil, Jordan, USA), the sector regulator has been assigned this duty while in others the matter is addressed by courts.

Legal course to interconnection charge related disputes is often a time and resources consuming process. Regulators have extensively used ex-ante measures such as mandating a Reference Interconnection Offer on dominant service providers and clarifying interconnection rules through various regulations / order to minimize disputes. Countries such as Canada and Malaysia have constituted industry groups to agree on such issues to encourage self regulation.

It is a usual practice for interconnection agreements to have a clause on dispute settlement through a mutually agreed arbitrator rather than taking it to the Regulator / Courts. A large number of Regulatory authorities employ arbitration frameworks to address disputes. In Jordan such practice is encouraged by the Regulator by recovering the cost of hiring experts from the operators in the event they request Jordan's Telecommunications Regulatory Commission to adjudicate.

As timely redressal of disputes is almost as important as the decision itself, most regulators have set a timeline for negotiation and adjudication.

In EU, Article 20 of the Framework Directive of the EU provides:

*“In the event of a dispute arising in connection with the obligations arising under this Directive between undertakings providing electronic communications networks or services in a Member State, the national regulatory authority concerned, shall, at the request of either party, issue a binding decision to resolve the dispute in the shortest possible time frame and in any case within four months except in exceptional circumstances. The Member State concerned shall require that all parties cooperate fully with the national regulatory authority”.*

## **11.0 Key Issues**

The experience of Regulators and Operators with the contentious process of cost based pricing and the long drawn dispute resolution framework, which almost go hand in hand, call for effective co-operation in instituting a framework. The key issues for discussion on the framework include

- How the interconnection charges are set?
- What should be the principle for setting these charges? In event these are required to be cost based,
  - What is the preferred costing approach?
  - What are the various elements that are very sensitive to the process and how they can be standardized?
- How can the interconnection charge related disputes be minimized?

## **12.0 Role of ITU**

### **12.1 Making resources available**

ITU has been delving with the commercial issues in and around interconnection charges in great detail. A COSITU costing model is publicly available for use and adoption by Members. Also a series of studies have been conducted on interconnection and are available on ITU's website. A few key publications are as follows:

- Interconnection Dispute Resolution 2003  
[http://www.itu.int/ITU-D/treg/Case\\_Studies/Index.html](http://www.itu.int/ITU-D/treg/Case_Studies/Index.html)
- COSITU  
<http://www.itu.int/ITU-D/finance/COSITU>
- 2000 Trends in Telecommunication Reform: Interconnection  
<http://www.itu.int/ITU-D/treg/publications/PublicationIndex.html>
- Regulatory Profiles  
<http://www.itu.int/ITU-D/treg/profiles/guide.asp?lang=en>
- On-line learning resources

### **12.2 Study Group Activities**

Study Group 1 of ITU-D and Study Group 3 of ITU-T are presently studying Interconnection related issues.

**Annexure 1: Recommendations of the Working Group on Cost of Duties & Levies and Interconnection (Second Forum, New Delhi)**

*Duties & Levies*

	Question	Recommendation
1	General	<p>a. No common yardstick can be applied for countries at different stages of economic growth.</p> <p>b. Lowering of Tariffs ensures increase in usage.</p> <p>c. Minimizing entry barrier for the take-up of service would lead to greater investment in Telecommunication sector, which in turn will lead to GDP growth.</p> <p>d. Government focus should be to grow Telecom sector and earn revenues from increased usage.</p>
2	Entry Cost	<p>a. Developed Economies: Charge as determined by Market Forces and Service provider's ability to pay.</p> <p>b. Emerging/ Developing Economies: Nominal to cover Administration charges / Eliminate Non serious players by Eligibility criteria</p> <p>c. Least Developed Economies: Encourage Investment by Nil Entry Fee</p>
3	Annual Fees on Operator	<p>a. To cover the administrative and regulation cost around 1% of Gross Operating Revenue. Excludes Revenue from non-operating sources e.g. Sale of Handsets, etc.</p>
4	USO	<p>a. It is a necessary levy and should be properly utilized exclusively for Rural Telecommunication Levy to be determined by Government from time to time to be capped at 5%.</p>
5	Spectrum Charges	<p>a. Please Refer Recommendation of Working Group on Spectrum Allocation and Pricing.</p>
6	Indirect Taxes on Capital	<p>a. Telecommunication being an important Infrastructure sector preferential treatment to be given. All Indirect Taxes cumulative should not exceed 12%.</p>
7	Handsets, spares, components and accessories	<p>a. Developed Economies: All applicable duties and levies put together should not exceed 10%</p> <p>b. Emerging/Developing Economies: All applicable duties and levies put together should not exceed 10%</p> <p>c. Least Developed Economies: Nil</p>
8	Usage Fees to Subscribers (VAT /Service Tax / GST)	<p>a. Between 5% to 8% depending on the state of economic development of the country</p>
9	Conclusion	<p>a. ITU is requested to study the impact of the above recommendations on Government Revenue vis-à-vis industry growth taking into account price / usage variance. The benefits would be passed on to the consumers; this will result in affordable tariffs resulting in increasing Tele-density and usage. The latter would more than offset any loss of Revenues of the Government due to reduction in Duties and Levies.</p> <p>b. ITU is also requested to study, conclude and recommend a percentage of Operating Revenue, which can act as a ceiling on all Levies and Duties cumulatively.</p>

*Interconnection*

	<i>Question</i>	<i>Recommendation</i>
1	The role of the regulator in the event the interconnection seeker & the provider are not able to reach agreement. Whether it should be suo moto or at the request of one or both the parties?	The intervention of the Regulator can be at the request of either party or it can be suo moto.
2	How can a regulator ensure effective interconnection to the new entrants in a fair, transparent, timely & nondiscriminatory manner?	Regulator can ensure effective interconnection by ensuring : <ul style="list-style-type: none"> <li>• It is very important that the Interconnection between the operators should be made <u>mandatory</u>.</li> <li>• Reference Interconnect Offer ( RIO ) to be published by all operators.</li> <li>• The RIO should be based on principles of</li> <li>• <i>Non-Discriminatory interconnect</i>. Terms of interconnection should not discriminate unduly between operators or between a dominant firm's own operators and those of interconnecting competitors. Interconnect agreements between two similar operators must be on the same basis, offering the same terms and conditions.</li> <li>• The non-discriminatory provision must apply to all terms and conditions, including pricing, time for implementation, availability of interconnect points, and technical standards.</li> <li>• It should be transparent.</li> <li>• They should be available in a time-bound manner</li> </ul>
3	What is the relevance / importance of an RIO? Should it be compulsory for an incumbent operator to publish the same & if so when?	The answer to question no. 2 is applicable to Question no. 3 also. Reiterating the fact that the RIO should be mandatory for all the operators including the incumbent. However flexibility should be available for mutual negotiations to arrive at a better commercial arrangement.
4	The corrective/ the remedial measures to be taken in case of non-adherence to the time schedule for providing interconnection related resources to be stipulated. Is there a dispute resolution mechanism whether in interconnect billing or access?	The time schedule for providing the Interconnection should be a part of the RIO. A dispute resolution with regard to interconnection related issues should be left to the jurisdiction of the regulator, and the regulator in-turn should prescribe a time bound process for final resolution.
5	What are the mechanisms available for interconnection seekers to negotiate on equal footing with interconnection providers?	As mentioned above the RIO should be based on the principle of non discrimination. The principle of internal transfer pricing should be followed by the incumbent operator to provide interconnection to its own subsidiary for similar services.
6	<b>Mandating the dominant operator to provide unbundled network element cost to the interconnection seeker. How can</b>	<b>Cost of the unbundled network elements should be part of the RIO. Also the sensitive cost based data can be provided to the Regulator, who in-turn can</b>

	<p>new entrant access interconnection facilities on “cost-based” basis and also in a timely manner? What about security deposit? Shall an access provider impose a security deposit? And at what sum? Should the access provider, provide reciprocal terms to all access seekers?</p>	<p>also make it available non-sensitive data to the interconnection seeker if required. It would also help the Regulator to keep a check on the costs depicted in the RIO. The security deposit can only be for the Interconnection Usage Charges (IUC), and it should be on a reciprocal basis. The deposit can be either a bank deposit or a bank guarantee. The amount of guarantee could be equivalent to 3 months IUC.</p>
7	<p>What are the costing approaches to be adopted in the multi-operator environment emerging globally? The most acceptable methodology to work out the revenue share percentages. Should interconnect capacity be subject to cost based pricing?</p>	<p>The IUC should be fixed by the regulator. The IUC charges should preferably be based on the Long Run Incremental Cost (LRIC) model. However these charges can be reviewed periodically subject to the data made available by the operators. The interconnect capacity should be cost based.</p>
8	<p>An appropriate mechanism necessary for estimation of the cost up-gradation needed by the interconnection providers to meet the requirement of the interconnection seeker. Should this cost be distributed among number of operators seeking interconnection?</p>	<p>For all up-gradation services, including emergency services, the regulator should fix the Interconnect charges, based on the information provided by the Interconnection providers.</p>
9	<p>What is the reasonable time for introducing Carrier Access Code, Pre Selection, and what should be the mechanism for determination of these costs &amp; who should bear these costs for up-gradation needed in the incumbent’s network.</p>	<p>First &amp; foremost, “choice of service” should be made available to the subscriber. Need for Carrier Access Code &amp; Pre-Selection should be examined on the requirements of the country. Least cost proposals for the Carrier Access Code (CAC) &amp; Pre selection should be explored. The incremental cost for these two services should only be taken into account. The incremental cost can be passed on to the subscriber as a surcharge on a per call basis.</p>
10	<p>What should be the principle applied on issues related to charging, billing &amp; settlement procedures? What should be the concept of inter-carrier charged billing, should it be on a call-by-call basis, or on bulk basis?</p>	<p>Call Data Record (CDR) based Inter-carrier billing system should be mandated by the regulator for all operators. The settlement can be on a call by call basis or on a bulk basis as mutually agreed. The above settlement should be on a reciprocal basis.</p>
11	<p>What should be the principles/methodology to be applied for providing of Point of Interconnection (PoI) by the incumbent ?</p>	<p>The guidelines or the level of interconnection should be laid down by the regulator. The provision of PoI’s should be enforced in a time bound manner. The level playing field is very important for provision of PoI’s.</p>
12	<p>What are the appropriate interconnection time frames in case of delays? What should be the penalties?</p>	<p>The time frames, and the penalties as decided by the Regulator should be part of the RIO.</p>
13	<p>In view of the anti-competitive interconnection policies &amp;</p>	<p>Yes, the regulator should intervene.</p>

	actions by incumbent, which is seriously retarding or preventing competition should there be an urgent regulatory intervention?	
14	What is the impact of interconnection on competition & viability of the new entrants?	The interconnection should be made mandatory by the regulator to ensure fair competition & level playing field.
15	What services are regulated or non-regulated? Is non-regulated services subject to non-discriminatory?	Interconnection is required for all types of services in a non-discriminatory manner.
16	Should the access provider be subject to Quality Of Services ( QoS)? At what level? In view of operation and maintenance, what is the rectification process of a down time? What rebate is given to access seekers if such incidence?	All operators should comply with the QoS standards for all services as laid down by the Regulator. Operators should enter into Service Level Agreements for provision of interconnection facilities & services.
<b>Other Recommendations by the Working group on:</b>		
1	Infrastructure Sharing	It should be encouraged by the Regulator / Licensor. Certain type of passive infrastructure needs to be necessarily shared, electronic infrastructure should be left to the mutual negotiations between both parties.
2	Co-location of Equipment	Should be encouraged and should be on a reciprocal basis.

**Annexure 2: Annual License Fees in selected countries**

Country	Annual non Spectrum Related Fees	Fee Type	Licence Types
Austria	0.1 – 0.2 % of gross turnover	Revenue sharing	All licences
Bahrain	1% of gross revenues	Revenue sharing	Mobile
Bhutan	Pre-determined fixed amount	Annual licensing fee	All licences
Chile	Variable fixed fees	Annual licensing fee	All licences
Croatia	USD 6.6M	Annual licensing fee	3G Mobile
France	1% of 3G revenues	Revenue sharing	3G Mobile
Greece	.025 – 0.5% of gross turnover	Revenue sharing	All licences
Hong Kong, China	15% of gross revenues with escalating annual minimum payment	Revenue sharing	3G Mobile
India	6% - 10% of gross revenues	Revenue sharing	Fixed and mobile
Ireland	0.2% of gross turnover	Revenue sharing	Fixed and Mobile
Italy	EUR 38 million	Annual licensing fee	3G Mobile
Jordan	10% of gross revenues USD 100,000 5% gross revenues	Revenue sharing Annual licensing fee Revenue sharing	Mobile Mobile Fixed monopoly
Kenya	0.5% of gross turnover	Revenue sharing	All licences except paging
Luxembourg	0.2% of gross turnover	Revenue sharing	Mobile
Maldives	5% of gross turnover	Revenue sharing	Mobile, Fixed and ISP's
Oman	12% gross revenues	Revenue sharing	Mobile
Korea (Rep.)	Approximately 1- 3.0% of gross revenues (annual adj.)	Revenue sharing	All licensed operators
Spain	0.2% of gross turnover	Revenue sharing	Fixed and Mobile
Tanzania	1.0% of annual turnover 1.5% of annual turnover	Revenue sharing	Fixed, long distance Mobile
Venezuela	5.3% of gross revenues	Revenue sharing	Mobile

Source: Trends in Telecommunications Reform 2004/2005

**Annexure 3: Interconnection Charges in selected Asia Pacific Countries**

**India**

All amount in Indian Rupee

	Distance Slab			
	Below 50 Kms	50 – 200 Kms	200 – 500 Kms	Above 500 Kms
Carriage charges per minute for Long Distance calls within India	<b>0.20</b>	<b>0.65</b>	<b>0.90</b>	<b>1.10</b>

Termination Charges for Fixed (Local) and Mobile networks Rs 0.30 per minute

**Malaysia**

(a) Fixed Network Origination / Termination Service	Sen. per min., 24 hour average
Local call termination	<b>2.60</b>
Local termination	<b>2.00</b>
Single tandem termination / origination	<b>4.80</b>
Double tandem termination / origination	<b>8.43</b>
Double tandem termination / origination with submarine	<b>19.70</b>
Fixed to Mobile / Mobile to Mobile (local)	<b>11.26</b>
Fixed to Mobile / Mobile to Mobile (long distance)	<b>14.47</b>
Fixed to Mobile / Mobile to Mobile (long distance with submarine)	<b>22.52</b>

Source: Commission Determination on the Mandatory Standard on Access Pricing, Determination No. 1 of 2003

**Pakistan**

All Amounts in Pakistan Rupee

Call Type	Peak Rs./min.	Off Peak - 1 Rs./min.	Off Peak - 2 Rs./min.
Metropolitan	0.52	0.40	0.30
National 25 – 80 Km	0.85	0.43	0.32
National 80 – 160 Km	1.25	0.70	0.35
National > 160 Km	1.35	1.03	0.52

Mobile termination charges are Rs. 2 per minute to be reduced from August 1, 2005 as per the Table below.

Period	Mobile Termination Rate (Rs. per minute)
1 <sup>st</sup> August 2005 – 30 <sup>th</sup> June 2006	1.60
1 <sup>st</sup> July 2006 – 30 <sup>th</sup> June 2007	1.25

Source: DETERMINATION ON FIXED-MOBILE AND MOBILE-MOBILE INTERCONNECTION CHARGES, July 7, 2005, PTA website

**Sri Lanka (Proposed CPP Call Termination Charges)**

Calculated call termination charges

All Amounts in Sri Lanka Rupee per minute

Network	Average	De-average		
		Peak	Off- Peak	Discount
Cellular Mobile	4.30	5.00	4.40	1.60
SLTL – Local	1.40	1.90	1.10	0.80
SLTL – National	2.30	3.00	1.80	1.30
WLL - Average	3.70	4.60	2.70	1.90

Source: TRCSL website, PUBLIC HEARING ON TARIFF FOR CALLING PARTY PAYS SYSTEM UNDER THE SECTION 12 OF THE SRI LANKA TELECOMMUNICATIONS ACT NO. 25 OF 1991 AS AMENDED.