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CITEL GUIDELINES AND PRACTICES FOR INTERCONNECTION REGULATION

(Item on the Agenda: 16)

(Document submitted by the Executive Secretariat)

[1]. From document PCC.I/doc.920/99

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PCC.I/RES 77 (XI-99)[2/]

CITEL GUIDELINES AND PRACTICES FOR INTERCONNECTION REGULATION

The XI Meeting of the Permanent Consultative Committee I: Public Telecommunication Services,

CONSIDERING:

That the Working Group on the Promotion of the Global Information Infrastructure has approved the attached document PCC.I/doc. 864/99 titled "CITEL Guidelines and Practices for Interconnection Regulation."

RESOLVES:

1. To approve the attached document;

2. To request that the Chairman of PCC.I inform COM/CITEL that these guidelines have been adopted in PCC.I in response to the mandate set forth in the 1998 Summit of the Americas that includes a mandate for CITEL to develop best practices guidelines on interconnection by the end of 1999;

3. Finalize the Rapporteur Group on Interconnection of the Working Group on the Promotion of the Global Information Infrastructure; and

4. Express the appreciation of PCC.I for the excellent contribution made by Ms. Jeanne Gellman in the preparation of the **CITEL Guidelines and Practices for Interconnection Regulation**.

[2]. From document PCC.I/doc.920/99

INSTRUCTS THE EXECUTIVE SECRETARIAT:

To send this document to COM/CITEL.

CITEL GUIDELINES AND PRACTICES FOR INTERCONNECTION REGULATION

DRAFT, JUNE 1999*

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* From document PCC.I/doc.782/99rev.1 (X-99).

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1. INTRODUCTION

Most CITEL member countries have introduced competition into at least one telecommunications sector, and many have expressed commitments to further liberalization. The methods used to reach competition vary, reflecting the need to balance and accommodate a range of social, economic, and political objectives. This document seeks to discuss the terms, principles, and tools that CITEL member countries can use to implement an interconnection regime that promotes competition in tandem with these other important policy objectives.

More specifically, this document contains a set of principles that CITEL members have agreed constitute critical elements for any interconnection regime. It provides concrete examples of existing regulations that CITEL member countries have used to implement these principles. The purpose of this document is not to direct, but rather to assist countries facing the rigorous task of developing and implementing interconnection regulations. This document includes information collected through the CITEL interconnection survey and reflects discussions within the CITEL PCC.I Ad Hoc Working Group on the Study of the Global Information Infrastructure (WGII) and the Interconnection Regulation Seminar held during the Second CITEL PCC.I Forum.

1.1 Purpose of Interconnection Regulation

In the most basic terms, interconnection is the linking of different networks so customers of different networks may call one another. The purpose of an interconnection regime is to benefit users by encouraging competition that will lower the price and improve the scope and quality of services. For competition to be successful at maximizing consumer benefits and innovation in the telecommunications market, carriers must have the opportunity to access all customers, even those customers connected to networks of their competitors.

In the context of the transition from monopoly to competition, however, interconnection becomes more than just the linking of networks. An incumbent telecommunications provider has a vastly superior market position and a strategic interest to keep out or minimize competitors in its market area which means that it has an incentive to limit interconnection. If the incumbent, with the vast majority of customers, does not interconnect with new entrants, the new entrants will have little chance of attracting customers of their own. If promoting competition is an important goal, then interconnection regimes need to be carefully designed to ease the way for firms to enter the telecommunications service industry. Thus, interconnection regimes should be designed in the interest of promoting liberalization of the telecommunications sector and competition among providers.

1.2 Methods of Competitive entry

Before interconnection can occur, to foster a competitive environment, the regulator must allow multiple forms of entry, each with its own form of pricing. Restricting methods and modes of entry can cause investment distortions and result in higher prices to consumers. By allowing the market to select preferred approaches do the regulator encourages efficient entry. There are generally three methods of entry:

(a) Facilities based competition
(b) Unbundling of network elements
(c) Resale

1.2.1 Facilities-Based Competition: When a new entrant constructs a network using its own facilities to reach its customers (*i.e.*, without using the incumbent carrier's network), that type of entry is commonly referred to as "full facilities-based competition." By developing a new network, a facilities-based competitor is not constrained by existing, possibly obsolete embedded plant and instead can install the newest, most efficient technology. As a result, the competitor will be able to supply new or additional services such as faster transmission and switching speeds or higher bandwidth capacity, and may be able to do so at lower costs than the incumbent. Facilities-based competitors not only directly benefit their customers but also create competitive pressure for the incumbent to upgrade its network. In addition, facilities-based entry allows the marketplace to drive competition with less regulatory presence.

Full facilities-based entrants still require interconnection for the mutual exchange of traffic with other providers. New entrants' customers need to be able to communicate with subscribers on other networks, especially the incumbent's network where the majority of users obtain their service. Without the ability to interconnect on fair terms, a new facilities-based competitor cannot survive.

1.2.2 Unbundling of Network Elements: In countries that allow either full or partial facilities-based competition, unbundling of essential facilities (see example 1.2.1A for Canada's view of essential facilities) is an approach to aide competitive entry in various telecommunications service markets and, thereby, bring the benefits of competition, such as better and cheaper service, to the majority of telecommunications users. Such unbundling can increase utilization of the incumbent's network in areas with relatively low teledensity. This increased utilization can spread fixed costs, thereby reducing the unit cost for the incumbent in its provision of service to its users.

Types of conditions a regulator may consider desirable to facilitate unbundling include:

(1) A list of the minimum number and types of technically feasible points of interconnection in the major supplier's network that are considered critical to facilitating entry of competing service providers.

(2) A requirement that major suppliers offer interconnection at any point beyond those identified in a list (as was described in (1)), subject to charges that reflect the cost of construction of necessary additional facilities. These costs might include physical collocation or virtual collocation, or interconnection at a point between the major supplier's and new entrant's network.

(3) A requirement that major suppliers provide unbundled elements for resale in a way that a competing carrier can have access only to elements it requires for its business and not have to pay for elements it does not require. This may also provide a check to gauge whether a major supplier is cross-subsidizing a service.

(4) Requirements that competitors can gain non-discriminatory and reasonable access to key rights of way, often from the major supplier. Often, a major supplier tries to impede a new entrant's access to its network by not offering use of poles, ducts, conduits, and rights-of-way, that are necessary for competitive entry and are owned or controlled by the major supplier. Regulations are often required to create an environment to permit new entrants access to rights of way in order to take advantage of the offer of unbundled elements.

(5) A requirement that major suppliers protect competitors' commercial information obtained in the provision of bottleneck or essential services or interconnection, including in the provision of billing and collections, customer care, operator services, database administration in the carrier selection process, and related services.

Example1.2.2A: In Canada, only "essential facilities", defined as monopoly-controlled facilities that a new entrant requires to provide service but which it cannot duplicate economically or technically, are subject to mandatory unbundling and mandatory pricing (long run incremental cost plus a 25% mark up). These essential facilities are limited to central office codes, subscriber listings and local loops in certain rate bands (e.g., rural and remote areas). However, for an initial 5-year period beginning May 1, 1997, the Commission has mandated that unbundled facilities necessary during the early stages of competition (e.g., local loops in all areas and local traffic transiting services). New entrants' facilities are not subject to mandatory unbundling.

Example 1.2.2.B: In Peru, the Interconnection Rules require the unbundling of essential elements of the network which include: (1) signalling and transfer facilities for the termination of calls, (2) transport in cases where the circuit and equipment necessary for interconnection are in the same place, (3) auxiliary services such as operator services and information needed for billing.

1.2.3 Resale: In the telecommunications context, resale occurs when competitors obtain a service at a discounted or wholesale rate from the underlying, established carrier and then sell the service to their own customers.

Resale can serve a multi-faceted role in promoting and sustaining competition in telecommunications services. Resale may be an effective entry vehicle for new entrants that may initially lack the necessary capital to build their own networks. Resale may also allow small competitors, which will not become facilities-based providers, to offer service.

In addition, resellers may stimulate usage of the incumbent's network, and thus may benefit the incumbent facilities-based provider and further growth of the entire sector. Moreover, this competition may help to keep prices lower for consumers, increase consumer choice, and ultimately stimulate economic growth.

Example 1.2.3.A: In the United States, MCI began as a reseller competing against AT&T in a very narrow market niche. Over time, MCI has made the most of these opportunities, expanded to become facilities owner, and currently is the second largest facilities-based long distance carrier in the United

States.

Example 1.2.3.B: In Canada, resale is not considered a substitute for facilities-based competition. Nevertheless, resale has been authorized for most telecommunications services including long distance and local service.

2. Competitive Safeguards

In most CITEL member countries, the incumbent carrier has considerable market power or dominance, which is often reflected in the following: market share, access to resources, relationships with suppliers, and the ability to exert control over the price of services in the market. An interconnection regime should have safeguards that firmly address the risk that an incumbent carrier with market power may delay or otherwise inappropriately influence negotiations. As competition increases, the continuing relevance of the safeguards will need to be examined. At a minimum, the regime should be able to address the following issues:

- Anti-competitive cross-subsidization should be prohibited.

Example 2.A: In Mexico, the Federal Telecommunications Law prohibits carriers from cross-subsidization of services through their subsidiaries or affiliates.

- Controls on the ability of an operator with substantial market power to misuse that market power for anti-competitive purposes. Some economies rely on general competition laws to provide this safeguard, others address it specifically in telecommunications regulation.
- Controls against misuse of competitors' proprietary information obtained by the major supplier as a result of its control of essential facilities or functions (e.g., billing and collections, carrier selection processing, customer care) that every supplier in the industry must rely on.
- Sanctions for delay and anti-competitive behavior, including pecuniary penalties, license cancellation and suspension.

While many of these issues relate to the incumbent, at least during the period of transition to a competitive environment, the issues can apply to any telecommunications service supplier who has some market power. Unfortunately, none of the safeguards offers certainty in guarding against anticompetitive behavior.

2.1 Separation: In many countries the major supplier offers more than one service, such as local and long distance service. When a company offers multiple services, it effectively charges itself for the different services within its own operation. This charge is called a "transfer price." In such cases, clear lines of separation between the different services offered by the major supplier may help ensure that the transfer price for each service adequately reflects market conditions, and does not allow a carrier to improperly subsidize services provided in a competitive market with revenues from monopoly markets. Anti-competitive subsidization of services in a competitive

market unfairly burdens captive rate payers with the costs of undercutting the major supplier's competitors.

There are a number of methods that may be used to help develop either fair transfer prices or arms-length transactions. The methods listed differ in the degree of severity in separating the different services of a monopoly or dominant provider and may vary in effectiveness. In most cases, independent auditing may be necessary to guarantee fair pricing.

Accounting separation is the weakest method of separation. With enforced accounting separation, separate accounts are kept for lines of business within the incumbent carrier. All of the costs are allocated to the different lines of business. While this method causes the least disruption to the incumbent, one problem with this method is that an incumbent may not know how much a division "pays" for a particular service.

Structural separation would require that separate companies be established to provide the different telecommunications services of the dominant provider while retaining common ownership. The incumbent provider would wholly own these companies. The purpose of structural separation is to force each of the subsidiary companies to operate as a separate line of business and thus to bill each of the other subsidiary companies for services rendered. While this method creates separate businesses and separate accounts that make determining the transfer price between companies more transparent to regulators, common ownership means the incentive to manipulate prices charged to the different subsidiaries still exits.

Divestiture would require separate firms for each service and therefore provides the greatest guarantee that a carrier that controls a bottleneck facility would not use this position to discriminate against competing carriers that require the use of the bottleneck facility. Divestiture relies on market forces to solve the transfer pricing problems by replacing internal transfers with market-determined transactions. While divestiture offers the greatest level of guarantee that interconnect prices will be fair, it also causes the greatest disruption and may reduce or eliminate economies of scope held by the incumbent.

Example 2.1.A.: In the United States, incumbent local exchange carriers are required to separate their books of account into regulated and non-regulated accounts. All monopoly services are governed by regulated accounts whereas competitive services are governed by non-regulated accounts. This separation aims to ensure that revenues from monopoly services are not used to unfairly cross-subsidize competitive services. For example, local exchange carriers that offer enhanced services such as voicemail, caller ID (caller identification), are required to account for revenues and expenses of these services in the non-regulated account, while revenues and expenses for local exchange services are allocated to the regulated account.

Example 2.1.B: In the United States, local exchange carriers that also provide long distance and/or commercial mobile radio service are required to provide such services through a separate corporate subsidiary. This separation aims to guard against cross-subsidy, discrimination and the potential for a predatory price squeeze. In the United States, local exchange carriers are also subject to detailed accounting safeguards to ensure that such conduct does not take place.

Example 2.1.C: In the Dominican Republic, according to article 30 (h), if a carrier provides various telecommunications services to the public, the carrier must maintain separate accounts.

2.2 Price Caps

The problem of cross subsidy arises when a carrier is subject to rate of return regulation. If a carrier's over-all rate of return is fixed, then it has an incentive to raise the price of non-competitive products and set a low price for competitive products to forestall entry. Under price cap regulation, the prices of the monopoly services are capped (indexed to inflation and expected productivity increases). Price cap regulation has a number of advantages, including incentives for the carrier to be more efficient. A carrier that is under price caps has no incentive to offset high returns in one market with low returns in another market because it has no overall constraint on its earnings. Only its prices are capped. Thus in each market the firm has an incentive to set the profit maximizing price.

2.3 Obligations to Interconnect and the Role of the Regulatory Regime

The regulatory regime should take into account that incumbent carriers have strong incentives to limit competitors' interconnection to their networks in order to maintain their dominant position in the market. Therefore, it is important that rules be established or prohibitions exist that prevent a major supplier from taking unreasonable advantage of its market power or its control over essential facilities. Such rules or prohibitions should, however, also provide adequate incentives for ongoing investment in telecommunications services infrastructure. As stated in the reference paper attached to the World Trade Organization's Basic Telecommunications Agreement, major suppliers should provide interconnection in a timely fashion, at any technically feasible point, under non-discriminatory terms and conditions, and at cost-oriented and reasonable rates.

Commercial negotiation is the preferred means for competitors to reach agreements on interconnection. Often, however, commercial negotiations fail in the absence of pro-competitive regulations that articulate the specific terms and conditions of a major supplier's obligation to its competitors to allow them to enter the market. Regulations or general competition law can enhance the likelihood of successful commercial negotiations if they provide the parties with incentives to enter into negotiations in good faith and to reach a constructive interconnection agreement in a timely manner.

Example 2.3.A: In Brazil, Art. 12 of the 1998 rules on interconnection issued in Resolution 33 states that all common carriers are obliged to make their networks available for interconnection when requested by any other common carrier.

Example 2.3.B: In Peru, the obligation to interconnect is considered an essential part of any concession, and the right to interconnect has been declared part of the public and social interest. All common carriers and transport service providers are obligated to interconnect with any other common

carrier upon request.

Example 2.3.C: In Guatemala all commercial operators of telecommunications, that is, all operators that are listed in the "Registro de Telecomunicaciones", have the right to interconnection.

Example 2.3.D: In Chile, the article 25 of the Telecommunications Law established the right to interconnection between licensees of public switched telecommunications services. The Law also states that licensees must provide interconnection according to the technical standards, procedures and time frames established by the Subsecretaria de Telecomunicaciones, SUBTEL, with the objective that a user of a given service can communicate with other users of the same service inside and outside the national territory.

Example 2.3.E: In the Dominican Republic, the General Telecommunications Law states that interconnection of different operators of service on the public switch network is in the public and social interest, and it requires providers of service on the public switch network to provide unrestricted access to their networks and to their services in a non-discriminatory manner.

Example 2.3.F: In El Salvador, according to article 30 of the rules on telecommunications issued by the Superintendencia General de Electricidad y Telecomunicaciones (SIGET), interconnection is an essential resource of the networks and has to be provided to every operator of another network that requests it, without any discrimination, provided that it is technically feasible and that interconnection equipment does not damage or contribute to the malfunctioning of the preexisting network.

In addition, according to Art. 32 of the SIGET's telecommunications regulations, every access service operator will have to establish in each defined local area, at least one point of interconnection for the operators that request the interconnection service. Without invalidating the above, the same interconnection point can permit the access to various local areas, if it is so agreed by both parties.

Example 2.3.G: In Venezuela, article 3 of the Interconnection Regulation states that all operators of a telecommunications network must interconnect with other telecommunications networks when technically and economically feasible.

Example 2.3.H: In Mexico, the Federal Telecommunications Law establishes that licensees of public switched telecommunications services should adopt an open network architecture design to permit interconnection and interoperability of its networks.

2.4 Nondiscrimination: There are many aspects to non-discrimination. Highlighted here are three of the most important: any-to-any connectivity, fair and equal treatment of calls, and quality of service.

Any-to-any connectivity of a public switched telecommunications network refers to the ability of any user to communicate with any other. No carrier with market power over essential facilities and services should have the power to preclude a telecommunications user from terminating calls on its network

A state of fair and equal treatment of calls exists when a customer experiences no difference between calls originated or terminated on an incumbent's network or its competitor's network, assuming the only variable is the interconnection arrangement. Among the more serious kinds of discriminatory activity related to fair and equal treatment of calls is quality-of-service discrimination. It is especially damaging to new entrants because customers will perceive that calls originating on the new entrant's network are lower quality in comparison to calls originating on the major supplier's network -- even though both types of calls are terminating on the same major supplier's network. As a result, it may be necessary to have arrangements to preclude discrimination in such areas as routing plans, grade of service, post dial delay, transmission media and provisioning intervals, among others..

Example 2.4.A: In Canada, Section 27 of the *Telecommunications Act* further establishes that in providing a telecommunications service, no Canadian carrier can unjustly discriminate or give an undue preference toward any person, including itself, or subject any person to an undue or unreasonable disadvantage.

Example 2.4.B: In Brazil, the 1998 rules on interconnection as found in Resolution 33 specify that interconnection shall ensure compliance with the service's quality standards as stated in the interconnection contract. The providers, however, are not obliged to supply a service quality level superior to that employed in their own operations or established in other interconnection contracts.

Example 2.4.C: In the United States, it is unlawful for any "common carrier" or provider of public telecommunication service to "make any unjust or unreasonable discrimination in charges, practices, classifications, regulations, facilities, or services, for or in connection with like communications service, by any means or device, or to make or give any undue or unreasonable preference or advantage to any particular person or class of persons or locality, or to subject any particular person or class of persons or locality to any undue or unreasonable prejudice or disadvantage." 47 U.S.C. § 202.

Other provisions of the Communications Act also require nondiscriminatory treatment. For example, the Federal Communications Commission has interpreted the nondiscrimination principle of section 251(c)(2) as follows: "The equal in quality standard of section 251(c)(2)(C) requires an incumbent local exchange carrier to provide interconnection between its network and that of a requesting carrier at a level of quality that is at least indistinguishable from that which the incumbent provides itself, a subsidiary, an affiliate or any other party." Section 201(b) requires that: "All charges, practices, classifications, and regulations for or in connection with such communication service, shall be just and reasonable . . . ."

Example 2.4.D: In Peru, the law states that all interconnection agreements must reflect the principles

of neutrality, non-discrimination and equal access. In addition, cross subsidization is expressly prohibited by law, and Peruvian law prohibits business practices that restrict fair competition, and gives OSITEL authority to adopt corrective measures if necessary to guarantee the rules on fair and open competition.

Example 2.4.E: In Venezuela, article 4 of the interconnection regulation states that interconnection agreements must be subject to the principles of neutrality, non-discrimination, and equal access.

3. Transparency

Transparency has an important role in the transition from monopoly environment to a competitive environment. Not only should the interconnection agreements be published or available, but also the entire process by which regulatory decisions are reached should be open, transparent and well defined.

Regulatory oversight or publishing key elements of interconnection agreements concluded with the major supplier, can advance the objectives of a pro-competitive interconnection regime. If a major supplier has a dominant position or control of an element essential to a firm seeking interconnection, the major supplier may have an incentive to leverage its market power in negotiating with other competitors. No clear regulatory oversight or public availability of terms and conditions of interconnection agreements may lead to undesirable results such as a lack of benchmarks for other entrants when dealing with major suppliers, and additional delay in negotiating agreements.

Interconnection agreements made in a transparent environment also help avoid disputes regarding discriminatory practices. The kind of information that would assist competitors in negotiating agreements are the key terms and conditions of previous agreements. Also important to make available are the technical information necessary for a carrier to efficiently interconnect, such as network architecture and signalling protocols.

Example 3.A: In the United States, "dominant," carriers or major suppliers are required to file publicly available tariffs for all interconnection arrangements used to provide interstate service. Thus, all incumbent local exchange carriers are required to file tariffs detailing their access arrangements for terminating interstate calls. The Federal Communications Commission is authorized to reject tariffs that contain unjust or unreasonable "charges, practices, classifications, and regulations for or in connection with" a communications service. The Federal Communications Commission has broadly interpreted these provisions to reject interconnection tariffs that imposed excessive costs and/or unjustified conditions. In addition, carriers are required to make all agreements for local service interconnection available to the public by filing them with the appropriate State Commission. Such agreements must also be approved by the State Commission.

Example 3.B: In Canada, both incumbent and competitive local exchange carriers are required to file interconnection agreements and tariffs with the federal regulator. In addition, because changes made in a network can affect terminals and interconnected networks, all local exchange carriers are required to

provide advance notice of any network modifications that may affect the operations of the networks of other carriers to which they are interconnected. It is also a regulatory requirement that the tariffs of all regulated companies be made publicly available.

Example 3.C: In Bolivia, in accordance with article 127 of the Telecommunications Law, the Superintendent of Telecommunications maintains a registry of interconnection agreements between licensees that provide service on the public switched network. The registry contains information on what parts of the network are interconnected, the type of network used, the date the agreement went into effect and the date of expiration. In addition, the rates included in the agreement are available to the public.

Example 3.D: In Chile, all carriers are required to file their interconnection agreements and tariffs with the regulator, SUBTEL. Although these agreements are not available to the public, the following aspects of the agreements will be made available to the public: technical conditions, time tables, procedures and maximum tariffs that may be applied.

Example 3.E: In the Dominican Republic, article 57 of the General Telecommunications Law states that interconnection agreements for public switched services must be submitted to the regulator for its approval. At the same time, the substantial aspects of the agreement should be published in at least one nationally circulated newspaper. Upon publication of the agreement, any interested party affected by this agreement may submit comments to the regulator within 30 calendar days. The regulator has 10 days to review the agreement, at the end of which the agreement will be considered approved. If the regulator finds that the agreement violates any of the rules on interconnection, the regulator will notify the carriers of the specific violations and request that they submit for reconsideration a modified agreement addressing those specific violations.

Example 3.F: In El Salvador, according to articles 44 and 45 of the SIGET's telecommunications regulations, any interconnection contract, and its modifications, will be registered before the SIGET, in the corresponding section of the Electricity and Telecommunication Registry, and will have to comply with all legal and regulatory requirements that may be applicable. The valid interconnection contracts between two operators will be available to be consulted in at any time in the corresponding section of the Electricity and Telecommunication registry of the SIGET by a third operator, with the purpose that the latter will be able to verify whether or not it similar contracting terms, according to Art. 20 of the Law.

Example 3.G: In Mexico, although interconnection agreements are not available to the public, interested parties may solicit information from the agreement by submitting a written request to the regulator expressing the reasons why that party would like this information.

4. Dispute Resolution Mechanisms

Commercial negotiation of interconnection terms and conditions is preferable, and there should be strong incentives for both the major supplier and new entrant to negotiate in good faith and to not always rely on the regulatory authority or the courts to resolve disputes. However, the asymmetric bargaining power between the major supplier and a new entrant due to the major supplier's dominance in the market, means a clear framework for such negotiations must be established. As described in the reference paper attached to the World Trade Organization Basic Telecommunications Agreement, if parties cannot resolve all issues through commercial negotiations in a timely and fair manner, the regulatory regime must include a fair and efficient mechanism for parties to resolve areas of disagreement. Parties should have access to legal mechanisms such as the courts or arbitration when it is clear that a negotiated agreement is not possible for certain issues within a reasonable period of time. Rules on negotiation procedures, arbitration procedures, and obligations of both parties, including strong penalties for failing to negotiate in good faith, assist in creating incentives to reach an agreement without regulatory intervention.

Example 4.A: In Brazil, pursuant to Resolution No. 33, Art. 7, the conditions for network interconnection are the subject of free negotiation between interested parties. According to Art. 43-67, any conflicts that may arise in relation to the application and interpretation of the regulations during the course of the interconnection contract negotiations shall be resolved by ANATEL by means of arbitration. Arbitration of interconnection conditions shall be conducted by an Arbitration Council, composed of three members appointed by the President of ANATEL. The procedure for interconnection arbitration begins with a petition addressed to the President of the Council. Once the Council receives the petition, the petitioning party will be notified to submit information and documents relating to the controversy within the period of 10 days and the Council shall arbitrate the interconnection conditions in fifteen days.

Example 4.B: In Brazil, pursuant to Resolution No. 33, Art. 69, ANATEL may impose sanctions on providers that do not comply with the obligations agreed upon in their interconnection contracts. According to Art. 70, following ANATEL's approval of the interconnection contract, the implementation provided for shall be operational for full interconnection between the networks within ninety days.

Example 4.C: In the United States, incumbent local exchange carriers are under an obligation to negotiate in good faith with competitors. The parties have the right to request mediation of unresolved issues by the State Commission at any time, and may petition the State Commission to arbitrate issues that are unresolved after the 135th day of negotiation. Arbitration may last no longer than 9 months after negotiations were initiated.

In addition, the Federal Communications Commission and many states have established expedited complaint processing procedures to resolve disputes that cannot be (or were not) resolved through negotiations among disputing carriers. The Federal Communications Commission views these rules as vital to ensuring full and fair competition and protecting the interests of consumers.

As a result of the Telecommunications Act of 1996, incumbent local exchange carriers in the United States have entered into one or more interconnection agreements -- either negotiated or arbitrated -- in most of the fifty states. In New York, for example, Bell Atlantic has reached interconnection agreements with over 25 requesting carriers. In its region, Bell Atlantic has well over 100 interconnection agreements.

Note that currently in the United States local-to-local interconnection is treated differently than long distance-to-local interconnection, which is called access and currently is governed by tariffs.

Example 4.D: In Canada, the Canadian Radio-television and Telecommunications Commission (CRTC) has established informal procedures for the purposes of dispute resolution for matters that do not require formal regulatory proceedings. These dispute resolution mechanisms include staff assisted resolution, staff mediation and the appointment of an inquiry officer. Parties are encouraged to make use of these processes, which do not preclude resolution under more formal procedures such as formal proceedings and applications to review and vary CRTC determinations or appeals to the federal Cabinet to vary, rescind or refer back CRTC decisions.

Example 4.E: In Peru, according to the Reglamento de Interconexion, any disagreement that arises over an interconnection contract or the interpretation of the contract can be submitted to OSIPTEL by either party for arbitration.

Example 4.F: In Bolivia, article 126 of the Telecommunications law states that in the event that the parties involved in negotiating interconnection can not come to an agreement, either party can request the help of the Superintendent of Telecommunications to determine the conditions of the agreement. In such cases, the parties will be required to comply with and execute the agreement within 15 days following the Superintendent's issuance of a resolution.

Example 4.G: In Guatemala, the General Telecommunications Law has established arbitration procedures in the event that the parties seeking interconnection can not come to an agreement within a period 40 working days of the request for interconnection, unless both parties mutually agree to extend the period. In the event that the parties want to seek arbitration, they can submit together or separately documentation of the points of disagreement to the Superintendent of Telecommunications (SIT). The SIT will then contract the services of an expert (Perito) to assist in the resolution of the disagreement. The expert will come from a list that the SIT maintains of accredited experts. Within 5 days following the selection of the expert the SIT and the parties requesting arbitration will pay in equal part the cost of contracting the expert. The expert will have 30 days to submit to the SIT an opinion on the appropriate way to resolve each one of the points of disagreement. The SIT will then have 10 days to make a decision on how the disagreement should be handled based on the analysis of the expert.

Example 4.H: In the Dominican Republic article 56 of the General Telecommunications Law

establishes that interconnection agreements will be freely negotiated by the parties following the rules on interconnection. In the event of a disagreement, either party or the regulator may initiate arbitration by the regulator. The regulator is required to determine the preliminary conditions of interconnection within 30 days and fix the terms and conditions of the interconnection charges in accordance with the rules on interconnection pricing.

Example 4.I: In Venezuela, title III of the interconnection regulations states that interconnection agreements are to be negotiated by the parties within a period of 2 months from the date an operator receives the request to provide interconnection. If the parties cannot come to an agreement the Law on Commercial Arbitration (Ley de Arbitraje Comercial) states that either party can request the intervention of the Comision Nacional de Telecomunicaciones (CONATEL).

5. Enforcement

In the event that a carrier refuses to comply with any aspect of the interconnection regime, the regulator must be able to take enforcement action. If there is a need for regulatory intervention, a regulatory regime that is independent of all operators and free from inappropriate political influence is often in the best position to create and enforce an interconnection regime for the benefit of everyone.

Example 5.A: In Peru, failure of any carrier to meet its interconnection obligations is considered extremely serious and that carrier may be subject to fines, and in the event that a carrier accumulates interconnection infractions, OSIPTEL has the authority to revoke that carrier's license.

Example 5.B: In Bolivia, failure to provide interconnection upon requested can result in fines between Bs $2,450,000 and Bs.$36,750,000, the confiscation of equipment and materials, or with a temporary prohibition of the operator to provide service for one year. If a party interconnects without permission to another operator's network, that party will be subject to fines between Bs $490,000 and Bs. $2,450,000, the confiscation of equipment and materials, or with temporary prohibition of that party to provide service for one year.

Example 5.C: In Guatemala, the Superintendent of Telecommunications has the authority to impose fines of up to U.S. $100,000 on an operator that refuses to interconnect.

Example 5.D: In Chile, according to article 36 of the Telecommunications Law, obstructing or refusing to accept or establish interconnection is considered an infraction and can be sanctioned with a fine of no less than U.S. $52,000 and not more than $260,000 per day. At no time should interconnection be interrupted, unless ordered by an administrative or legal entity.

Example 5.E: In the United States, the Communications Act gives the Federal Communications Commission broad authority to fine carriers US$110,000 for a single violation of the Federal Communications Commission's rules and orders, up to a statutory maximum of US$1,000,000 for a continuing single violation. The Federal Communications Commission also has authority to order carriers to pay monetary damages to any entity that can show actual damages suffered as a consequence of any such violation. The Federal Communications Commission has ordered a carrier to pay complaining parties as much as US$80,000,000 in damages, plus interest, for violations of section 201(b) and certain related Federal Communications Commission's rules and orders.

Example 5.F: In El Salvador, the SIGET has the authority to apply economic sanctions to operators for failing to comply with the SIGET's rules on telecommunications. The sanctions vary depending on whether the infraction is considered "less serious," "serious," or "very serious;" and the fine can range from 5,000 colones to 500,000 colones plus a fine per day, if the infraction continues, that can range from 500 colones to 5,000 colones.

Example 5.G: In Mexico, the Federal Telecommunications Law and concession titles establish that the penalties for failure to comply with interconnection obligations may be fines and/or the revoking of the concession.

6. ECONOMIC CONSIDERATIONS AND PRICING

When there is enough competition so that no supplier is dominant, commercially negotiated interconnection prices are preferred. However, in markets where a major supplier has market power or control over bottleneck facilities, regulations are likely necessary to prevent the major supplier from exploiting its market power over other carriers. In a scenario of market power or control of bottleneck facilities, it is therefore necessary to develop interconnection prices through regulatory intervention. These prices may be used as a price ceiling on interconnection, a default in case of failed negotiations, or as a tariff available to all interested parties.

If, in order to encourage competition, interconnection is mandated to encourage competition, then interconnection pricing should be consistent with what would prevail in a competitive market. In a competitive market, a producer charges a customer a price that is close to cost, otherwise another producer will offer the same product at a lower price. A lower cost service provider has the advantage in a competitive market because rates are driven towards cost and the low cost provider can price its services lower. In addition, when making an investment decision, firms predict what the market will be like in the future. Thus, forward-looking cost-based pricing reflects not only a competitive market condition, but also the conditions of an efficient company. For these reasons, interconnection rates that are cost-based give signals to producers and consumers that are more likely to ensure efficient entry and utilization of the telecommunications infrastructure. Such an approach is most likely to simulate the prices that would result if there already were a competitive market.

In markets with a dominant telecommunications service provider, new entrants will need access to the dominant supplier's unbundled essential facilities. For unbundled elements, the level of prices directly affects the viability of competitive networks and the incentives for network investment and development. The challenge for all CITEL member countries is to have unbundled element charges that promote efficient facilities deployment. In an open market, if element charges are set too low, facility based competition will not be realized and there will be an aggregate under-investment in new and augmented infrastructure, both by new entrants and by major suppliers. Under pricing relative to cost therefore will distort investment decisions about infrastructure. On the other hand, if element prices are set too high, there will be either little or no market entry, or there may be increased investment in infrastructure with consequential uneconomic by-pass of major suppliers' facilities. In either case, competition will be distorted, whether because it is delayed or made unsustainable.

Forward-looking principle. New carriers make market entry decisions based on forward-looking costs. If the price of interconnection or unbundled elements is based on embedded or historic costs, new entry into the market may be distorted. This is because the forward-looking cost of some assets will exceed historic costs, and the forward-looking cost of other assets will be less than historic costs.

As an interim strategy, economies with no established approach for interconnection charges can look to other economies that have developed forward-looking models and use those prices as proxies. In general, regulatory regimes should decide on policy goals, choose an approach which can deliver an efficient interconnection price in a timely manner, and proceed on that basis.

6.1 Different costing methodologies

Negotiations between the parties are preferred in the first instance, within an appropriate policy framework. This allows the parties to take into account all factors that might influence prices, and terms and conditions, with more information available to them than is likely to be available to a regulatory regime.

6.1.1 Forward-looking models.: Long-Run Incremental Cost (LRIC) A forward-looking long-run incremental costs (LRIC) based pricing methodology has merit for determining rates designed to facilitate competition because it provides an analytical framework that can be used to obtain an estimate of the cost that would be found in a competitive market. A well-designed LRIC approach seeks to both compensate carriers and promote competition

New entrants make their decisions whether to lease unbundled elements or to build their own facilities based on the relative costs of these options. Since entry is based on forward-looking economic costs, new entrants' investment decisions tend to be distorted if the price of unbundled elements is based on embedded or historic costs.

Prices developed from a LRIC-based methodology give signals that attempt to mimic the market to producers and consumers, and are more likely to promote efficient entry and utilization of the telecommunications infrastructure. Such an approach best simulates the prices for network elements that would result if there already were a competitive market for such elements.

For example, "normal" profits are embodied in forward-looking costs because in calculating forward-looking costs one of the elements is the forward-looking cost of capital, i.e., the price of obtaining debt and equity financing. Thus, a forward-looking incremental cost methodology can create the right investment incentives for competitive facilities-based entry, and can create incentives for the market to move toward competition. In addition, unbundled element prices based on forward-looking economic costs would help prevent incumbents from exploiting their market power at the expense of competitors who are dependent on the incumbents' facilities.

When calculating Long-Run Incremental Costs, it is best to segregate the network into distinct facilities that have little or no common costs with other facilities. For example, building a switch has little common cost with constructing loops. Thus it is appropriate to calculate the LRIC of switching as the LRIC of building a switch and the LRIC of loops as the cost of building loops.

TELRIC, LRAIC, and TSLRIC are all methods that capture this basic idea, that it is best to calculate the cost of individual, distinct facilities, rather than attempt to calculate the "cost" of different retail services such as long distance service and local service where these two "services" have large common costs between them.

Example 6.1.1.A: In the United States, the forward-looking economic costing model preferred by the Federal Communications Commission is a Total Element Long-Run Incremental Cost based model (TELRIC). TELRIC is a forward-looking economic costing methodology that reflects the additional cost a firm will incur in the future to produce an additional quantity of a good. Prices in this system are based on physical elements, and it uses the most efficient technology currently in use. A TELRIC based model includes forward-looking, risk-adjusted cost of capital.

Example 6.1.1.B: In Canada, the Canadian Radio-television and Telecommunications Commission (CRTC) has adopted a forward-looking long run incremental costing methodology as the basis of setting rates for essential services and facilities, including network interconnection. This incremental costing methodology - referred to as "Phase II" – includes all forward-looking incremental causal direct, indirect and variable common costs, based on the most efficient technology in current use. Under this approach, fixed costs are not included and, therefore, must be recovered through a "mark up" which has been set at a level of 25% by the CRTC. Consequently, the rating formula relied on to set rates for interconnection services is Phase II incremental costs plus a 25% mark up.

Example 6.1.1.C: In Chile, the rules on interconnection establish that costs used for the pricing of interconnection should be based on long run incremental costs.

6.1.2 Efficient Component Pricing Rule (ECPR). Under ECPR, an incumbent carrier that sells an essential input service, such as interconnection, to a competing network would set the price of that input service equal to "the input's direct per-unit incremental costs plus the

opportunity cost to the input supplier of the sale of a unit of input."[3] Under the ECPR, competitive entry will not place at greater risk the incumbent's recovery of its overhead costs or any profits that it otherwise would forego due to the entry of the competitor. In other words, the incumbent's profitability would not be diminished by providing interconnection or unbundled elements or both. The ECPR presupposes that the incumbent is the sole provider of a bottleneck service, and seeks to define efficient incentives for incremental entry based on that assumption.

Under the ECPR, competitive entry does not drive prices toward competitive levels, because it permits the incumbent carrier to recover its full opportunity costs, including any monopoly profits. In general, the ECPR framework tends to preclude the opportunity to obtain the advantages of a dynamically competitive marketplace; the monopolist continues to receive monopoly profits; and distortions remain in the price structure.

6.1.3 Fully allocated cost. Fully allocated or distributed costs are, in general, the costs derived from the process of assigning the total embedded or historic costs of the firm to individual products or services. Fully allocated costs typically measure historical costs rather than forward-looking costs.

In many respects, historical costs differ from the current costs that might be faced by a new entrant. First, inflation can create a gap between the original costs and the current cost of acquisition. Second, technological change can cause historical costs to overstate the current value of the capital good. Third, depreciation practices can create an inconsistency between the book cost and the market value of the asset. Finally, past regulations may have created incentives for inefficient investment. These inefficiencies are then passed into any calculations based on historical costs.

New entrants generally make their entry decisions based on current costs and upon what they believe will happen in the future, thus new entrants' investment decisions may tend to be distorted if the price of unbundled elements is based on embedded or historic costs. Therefore, if the purpose of an interconnection regime is to promote competition by encouraging new entry in the market, using a fully-allocated cost may not achieve this objective in a timely manner.

6.1.4 Revenue Sharing. In many developing economies the information necessary for a regulatory regime to determine interconnect charges is only partially or completely unavailable. For this reason, the regulatory authority, which is often constrained by tight budget and tight supply of qualified staff, may prefer to use an interim costing methodology for interconnect service. One such approach is "revenue sharing arrangement". However, this type of arrangement is not a surrogate for estimating costs, but instead a means of allocating profits. Such a revenue sharing arrangement may not encourage new entrants to enter the market since interconnection prices under such a regime would likely be far above cost.

6.2 Implementation

There are a variety of procedures employed by those regulatory regimes which have a role in determining interconnection price levels. In keeping with the ideas expressed in the reference paper attached to the World Trade Organization Basic Telecommunications Agreement, the

[3] William Baumol & Gregory Sidak, *The Pricing of Inputs Sold to Competitors*, 11 Yale J. on Reg. at 178.

development of interconnection rates should be transparent, cost-oriented, and have regard to economic feasibility. Procedures that encourage broad consultation among interested parties and open public discussion are more likely to be able to achieve these objectives.

Example 6.2.A: In Canada, following established regulatory procedures, the Canadian Radio-television and Telecommunications Commission (CRTC) has initiated a number of public proceedings to examine proposed rate levels for interconnection services and essential facilities. These proceedings typically involve a comprehensive review of all data and assumptions used to determine the long run incremental cost of the service or facility under consideration. Rates are typically set on an interim basis until the Commission modifies the rates, if necessary, and gives final approval.

7. OTHER RELATED ISSUES

7.1 Universal Service and Access. Work on universal service and access in the Americas is already being handled in the Working Group on Basic and Universal Services. However, it is important to note that among CITEL countries that believe there is a need to provide universal access to telecommunications services, universal access and interconnection charges have sometimes been linked. For some CITEL countries, interconnection charges contain implicit subsidies that generate revenue in excess of cost from some services that can be used to financially support services that may not be commercially viable. However, views on policies to promote universal access have evolved to an emerging international consensus that using market forces to expand the reach of the communications network may be more effective than relying on traditional monopoly providers. For example, in the reference paper attached to the WTO states that "any Member has a the right to define the kind of universal service obligation it wishes to maintain…provided they are administered in a transparent, non-discriminatory and competitively neutral manner…"

Example 7.1.A: In Peru, the 1993 Telecommunications Law established the Fund for Investment in Telecommunications (FITEL). FITEL, which is administered by the telecom regulator, OSIPTEL, derives its fund from a transparent 1 percent tax on the gross revenues of all telecommunications companies. OSIPTEL allocates FITEL funds through a competitive bidding process.

Example 7.1.B: In Chile, since cross-subsidies are not permitted,1994 Telecommunications Law established the Rural Telecommunications Development (RTD) Fund that provides "direct" and "transparent" subsidies to companies that submit proposals to provide public payphone telephones to rural areas and low income urban areas RTD funds come from the annual government budget and are allocated to SUBTEL. These earmarked funds come from the general government revenues that are raised through income taxes and other sources. The RTD is administered by SUBTEL through an annual competitive bidding process. SUBTEL assigns an "RTD subsidy" for each project. RTD funds can be used by the selected companies to subsidize between 1/3 and ¼ of the initial investment costs of rural projects. The remaining costs are borne by the companies and can be recovered through revenues raised from providing service.

7.2 Rate rebalancing

Historically, many countries allegedly have relied on an internal cross-subsidy mechanism to finance the development of a public network and the provision of basic telecommunications services to users at affordable prices. Under this mechanism, the dominant, vertically integrated operator uses revenues from the more profitable services, such as international, long-distance and business services, to subsidize the provision of other services, such as residential local service and service to rural areas, at rates that may be below the cost of providing the service.

This cross-subsidy mechanism is not sustainable under a competitive regime because new entrants target the more lucrative segments of the market that have been used to subsidize the provision of other services. Competitive pressures would drive down the prices of international, long-distance and business services, thus reducing the margins available from such services. Furthermore, a social policy that artificially constrains carriers to offer some services at below-cost prices thwarts competition in the market for such services by reducing incentives to enter that market and to invest in more innovative technologies for service provision.

Therefore, if the objective of a regulatory regime is to bring the benefits of competition to the telecommunications market, it is essential to allow rebalancing of the rates faced by users to levels that more closely reflect the cost of providing services. A policy of prohibiting or restricting rate rebalancing, which may include a rise in local service rates, may hinder the realization of the benefits of competition in the telecommunications market. Such a policy also may be unfair to the incumbent provider, if the incumbent is required to provide some services at below-cost prices.

Although competitive market pressures will force such rebalancing to occur automatically once the provision of services is opened to new entrants, it is far better to accomplish this rebalancing in advance of opening the market to competition. Otherwise, the incumbent provider has an incentive to try to exploit the rebalancing process to its own advantage after competition is introduced. In particular, the incumbent may rely on claims that it continues to under-recover its costs in the residential local market as a justification for maintaining artificially high interconnection rates. If the regulator supports the incumbent's position, the effect would be to deter entry and harm competitors under the guise of supporting the provision of socially important services.

If the regulator is concerned that rebalancing of rates will lead to unaffordably high prices for socially important services, a universal service program that subsidizes these rates may assist in bringing rates for socially important services to more affordable levels. As described in the section on universal access, the calculation, collection and distribution of the subsidies should be transparent and competitively neutral to be most effective.