

Chapter 30

Moving to Full Liberalisation Under the US *Telecommunications Act of 1996*: Interconnection, Costing, and other Entry Issues

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1.0 Introduction

This is a propitious point in the history of the US telecom industry. Currently under way is the most far reaching federal reform agenda ever undertaken. Its central objective is to utilise the engine of marketplace competition to take full advantage of the opportunities made possible by technological advance. In its wake, liberalisation will become the norm, with all barriers to entry removed. It is hoped that competitive supply will follow.

This effort comes in the aftermath of a decade of innovative, but piecemeal, state initiatives, which were undertaken without federal legislative guidance. But, the US Congress has finally passed a comprehensive liberalisation bill. The Federal Communications Commission (FCC) has been entrusted with putting this new national policy framework into effect. By the end of 1996, the Commission has been instructed to develop implementation rules to replace those that evolved over more than 100 years.

This chapter briefly summarises the industry, state and federal developments leading up to passage of the new legislation. It then examines several Sections of the new Act that are crucial to the success of competitive entry, especially those dealing with resale, unbundling, and interconnection. Reference is made concurrently to implementation of these provisions, in the context of the FCC's Common Carrier (CC) Docket No. 96-98 rulemaking.

A major focus of the analysis is upon Commission costing determinations. The legislation favours liberalisation, but not deregulation. It is the FCC's task to insure that interconnection, service and network element prices developed by the established telcos are just and reasonable, non-discriminatory, and fashioned without resort to cross-subsidisation. Accordingly, considerable discussion is devoted to the costing guidelines provided by the legislation, as well as the detailed implementation methodologies that the FCC has under review. The Appendix to this chapter provides some world-wide examples of the use of incremental costing that support adoption of this approach.

2.0 Overview

The *Telecommunications Act of 1996* affects nearly every aspect of the industry. Perhaps most important, it mandates generalised interconnection, resale and unbundling, and other

terms and conditions that are essential for full competitive entry. For the first time, established telcos are required to open gateway local service areas to all providers, including the local exchange carrier (LEC) telcos from other geographical regions. The decisions that are currently under deliberation by the FCC will shape development of the industry for years to come.

Much can go wrong for entrants during the implementation process. Prospective alternative local exchange carriers (ALECs) must be particularly vigilant, given regulators' past ineffective attempts to implement efficient interconnection. It is perhaps wise to recall that MCI spent the better part of two decades litigating its entry conditions and the pricing of interconnection arrangements. In today's fast changing markets, delayed entry or noneconomic pricing of access, wholesale services, or rights-of-way could portend market failure. In their favour, entrants will not have to face the myriad of operating rules, prices, and terms and conditions of entry that they have faced in the past (sometimes within a multistate area served by the same regional Bell operating company [RBOC]). But the current stakes are much higher.

Likewise, incumbent local exchange carriers (ILECs) have much at risk. Under the Act, achievement of interconnection and other "competitive checklist" stipulations will free the RBOCs from long distance service provisioning and other restrictions resulting from the AT&T divestiture. However, the value of the over 300 billion USD which ILECs have invested in network facilities could be endangered by unfettered competitive entry. Perhaps of more importance, the existing firms' hold on their customer bases will be at risk, along with a market presence and goodwill that has been developed for more than a century.

The stipulations of the new Act will change the ILECs' policy positions and strategy markedly because of trade-offs made during the legislative process. For instance, provisions of Sections 271-276 will relieve the RBOCs of their divestiture related line of business restrictions, but only at a price. In order to be authorised to offer long distance (interLATA) service within their operating regions, the RBOCs will have to meet a competitive checklist of procompetitive conditions. This includes, *inter alia*, requirements to interconnect, make all of their services available for resale, offer nondiscriminatory and unbundled access to local loops, transport, switching, and rights-of-way at cost, and permit connection to company databases and signalling.

The 1996 Act appears to empower the FCC with full responsibility for its implementation, and provides concomitant legal authority to pre-empt contrary state actions. In the new environment, financing universal service obligations (USO) and carrier of last resort (COLR) responsibilities will not fall solely on the shoulders of the ILECs, but will be shared by all providers. The sooner the Act's requirements are met, the earlier restraints (or unequal obligations) will be removed from incumbents. They can then compete with facility-based ALECs or other entrants "head-to-head."¹

Traditional ILEC positions with respect to costing, investment, and pricing positions will be vitiated by the demise of past monopoly or franchise-based supply conditions, as a result of implementation of the Act, along with industry evolution toward potentially full competitive conditions. Both of these factors will force the ILECs to change their pricing and other strategies. For instance, the ILECs can no longer deter facilities-based entry by offering discounted or incremental cost-based access rates, at least not without financial consequences. That is, incumbents will not have the option of

shifting overhead, joint and shared costs to remaining monopoly service customers. The Act specifically prohibits cross-subsidisation. And, of course, in the long-term, all markets will be competitive and all customers will have alternative supply options.

Similarly, infrastructure improvements cannot continue to be directed primarily toward urban or large customer clienteles with impunity, while others are served with inferior capability. The Act requires comparability in infrastructure improvements, with the intent of fostering deployment of advanced infrastructure throughout the public network. The impact of comprehensive competitive market forces should eventually lead to a similar result. All the major players have already advanced revised pricing and costing positions. For example, the incumbent industry now embraces full accounting costing as a basis for rate development in dealing with ALECs and other new entrants. This contrasts with ILECs past use of incremental costing to meet competition. Similarly, new entrants, particularly the IXC, formerly supported shifts of accounting costs to core local exchange services. Now, they generally favour application of an incremental cost approach to rate determination for all services. Clearly, the parties past claims of full support for particular costing positions have not “stood the test of time.”

Under the new Act, industry rationalisation, which is already under way, is likely to be swift and far reaching. These trends include formation of domestic and international alliances (e.g., MCI/BT, Sprint/Deutsche Telecom/France Telecom, and World Partners), and ILEC integration, including even the telephone service elements of the old Bell System (e.g., Bell Atlantic/NYNEX and SBC/Pacific Telesis).²

3.0 Development of the New Legislation

Passage of a new US *Telecommunications Act* has been a tortuous process. Before the 1996 Act became law, national legislative proposals had been advanced for over two decades, starting with the 1976 *Consumer Communications Reform Act* (“Bell Bill”). The goals of these many proposed laws have changed dramatically. Earlier measures were intended to perpetuate monopoly supply, while those advanced in more recent years have taken a procompetitive approach. One common thread of each of these efforts was to persuade the Congress to take the leading role in guiding industry evolution into the next century.

Unfortunately, these initiatives all failed, including several for which a majority of members were in favour of passage.³ The result was that telecom policy was made in a piecemeal fashion by a multiplicity of institutions. These included the FCC, state public utility commissions (PUCs), and the judiciary – particularly the divestiture court presided over by Judge Harold Greene.

One of the difficulties of implementing the current federal mandate involved its being enacted *after* several states had painstakingly developed legislation or regulatory rules opening local exchange service provisioning to competition.⁴ Thus, depending on the locale, suppliers may be currently operating under, *inter alia*, deregulation, social contracts, flexible or incentive regulatory regimes, or traditional rate of return regulation. Of these, the only certainty of the process of putting the new Act into effect is that the rate of return approach will *not* be used to develop charges for interconnection and network elements.⁵

Existing state regulatory regimes cannot hinder FCC implementation of the federal legislation. The Commission believes that the new bill furnishes it with the power

of pre-emption, as is attested to by the legislative history. The intent of the Congress was to provide the requisite procompetitive, de-regulatory *national policy framework* designed to accelerate rapid private sector deployment of advanced telecom and information technologies and services to all Americans by opening all telecom markets to competition.⁶

Some sections of the new Act will have more immediate significance for the transition to competition. Among these are provisions that will remove divestiture related constraints on the RBOCs, i.e., after they achieve certain milestones.⁷ Other key measures focus on the development of competitive markets, especially Sections 251-253. These set forth a blueprint for ending monopolies in local telecom markets by imposing specific obligations on all ILECs to open their networks to competitors.

As the FCC has noted, Section 251(b)(5) requires all carriers, including ALECs, to “establish reciprocal compensation arrangements for the transport and termination of telecommunications.”⁸ These and other requirements of Sections 251-253 are crucial to the implementation process. It is to the specifics of those sections that we now turn.

4.0 The Act’s Entry Provisions and FCC Implementation

In establishing guidelines for development of competitive markets, Sections 251-253 of the 1996 Act distinguish between the obligations of: (1) incumbent local exchange carriers; (2) all providers of local exchange service, including new entrants; and (3) telecom carriers, or those providing any telecom service to the public for hire. The most important standards for entry are targeted at exchange carrier provisioning of interconnection, services, and network elements.

Section 251 imposes service and technical obligations. Carriers are required to open their networks to competitors, establish reciprocal compensation arrangements for the transport and termination of traffic, and permit resale of any service that they provide at retail. The technical aspects of interconnection offer these firms little opportunity to thwart competition.

ILECs have a duty to attach the facilities and equipment of any carrier upon request. This interconnection must be made available at: (1) any technically feasible point within the ILEC network; (2) quality levels that compare both to that provided to the carrier’s internal operations and also to any other party using the firm’s network for similar purposes; and (3) rates, terms and conditions that are “just, reasonable, and nondiscriminatory . . .”⁹ Incumbents must unbundle their network facilities and features so that entrants can essentially “pick and choose” any network elements or services they require.

Of course, legislators were not unaware that it can be an arduous process for carriers to come to agreement on interconnection. This is particularly true where the parties have unequal bargaining positions, and are left to their own devices to reconcile differences. Accordingly, the Act requires all LECs and telecom carriers to participate in interconnection negotiations. Firms must also participate and cooperate with state commissions carrying out arbitration, should that become necessary. As the FCC points out, whatever the situation, all parties must continue to negotiate in “good faith.”¹⁰

Options to interject roadblocks into negotiations are limited. For instance, parties cannot legally refuse to begin (or choose to end) negotiations pending resolution of any issue or prior to satisfaction of any requirement. These situations include demands for the

signing of a nondisclosure agreement, or the limiting of legal remedies should negotiations fail.

As evidenced by agreements already entered into after passage of the Act, many parties seem to believe that it is better to settle matters among themselves. In part, this reflects the fact that if voluntary settlements can be reached respecting interconnection, services, or network elements, Section 252 provides that such agreements need *not* meet the standards of Section 251. These contracts must still be submitted to state commissions, which have the obligation of assessing their adherence to the Act's pricing guidelines. However, in situations not involving voluntary settlements, state regulators may bring negotiations to agreement using compulsory arbitration, subject to the FCC's review.

The RBOCs, in particular, are likely to find the alternative of utilising voluntary agreements compelling. Of course, these can be entered into without the scrutiny (and delay) that the ILECs have experienced in the past as a result of governmental intervention. But, in addition, under the provisions of Section 271, if the RBOCs produce a compliant interconnection agreement (or a statement of generally available interconnections terms and conditions), they could be quickly authorised to offer in-region interLATA long distance services.

Section 253 stipulates that state officials may not enforce existing or new restrictions that have the effect of limiting any entity from offering any interstate or intrastate telecom services. The FCC is required to overturn ("shall pre-empt") any such action or requirement. Under the legislation, it appears that rules which the FCC adopts in these areas will apply to *both* the interstate and intrastate jurisdictions.

This certainly has been the position taken by the Commission. In its April 19, 1996 Notice of Proposed Rulemaking (NOPR), the FCC sought comment respecting implementation rules for Part II of the Act, and specifically Sections 251-253. The notice concludes:

Congress intended sections 251 and 252 to apply to both interstate and intrastate aspects of interconnection, service, and network elements, and thus that our regulations implementing these provisions apply to both aspects as well. It would make little sense, in terms of economics, technology, or jurisdiction, to distinguish between interstate and intrastate components for purposes of sections 251 and 252.¹¹

It is likely that in its order the Commission will assert full authority generally, and respecting interpretations of any of the provisions of the new Act. The agency has already indicated that it favours utilisation of the national rules that it will be establishing, rather than delegation of any substantive aspects of its primary authority. The FCC has found that national rules "would be likely to improve opportunities for local competition by reducing or eliminating inconsistent state regulatory requirements, thereby easing record-keeping and other administrative burdens."¹²

For interconnection, in particular, delegation of pricing authority to the states will be minimal. While the Commission could reserve a substantive role for state authorities, given their experience with these matters, it apparently has decided not to do so. The FCC believes that a national regime will be far superior in facilitating entry, as opposed to the situation where multistate competitors must comply with a variety of possibly conflicting technical and administrative state requirements.

We believe that uniform national rules for evaluating interconnection arrangements would likely offer several advantages in advancing Congress' desire to create a pro-competitive national policy framework regarding local telephone service. For example, national standards would likely speed the negotiation process by eliminating potential areas of dispute. We note that in the past, disputes before the FCC between LECs and interconnectors have arisen most often where our rules lacked specificity, or where no standards had been adopted.¹³

To put its new found power into effect, the Commission has determined that it must even override long standing jurisdictional cost separations processes that divide total system costs between interstate (FCC) and intrastate jurisdictions. The FCC finds that the Act does “not make jurisdictional distinctions between interstate and intrastate services and facilities...”¹⁴ Accordingly, the pricing rules to be established at the federal level will “not recognise any jurisdictional distinctions, but would be based on some measure of unseparated costs.”^{15 16}

This is not to say that the Commission fails to recognise that there may be specific situations where permitting some variations in its regime would be appropriate. For instance, state or regional differences in interconnection could be warranted by special demographic, technical, geographic or other serving conditions, e.g., reflecting the degree to which network ANI, digital switching, or other advancements are present in a particular locale. And, the Commission may permit variances from its regime for purposes of experimentation.¹⁷

5.0 Unbundling of the Network

The new federal legislation grants entrants greater access to ILEC network facilities and equipment than they have ever enjoyed during the industry's existence. As a benchmark, consider that prior to divestiture, incumbents maintained that even the most minute aspects of interconnection and unbundling had the potential to gravely impair the functioning and reliability of the public network. Now, under the Act, LECs must interconnect with any service of any carrier upon request. The FCC further stipulates that “LECs have the burden of proving that it is technically infeasible to provide access to a particular network element.”¹⁸ And, if an element proves feasible for unbundling anywhere in the industry, then it should be presumed practical for similar situations.

Essentially, LECs have the responsibility to “find a way” to disaggregate their networks. The need for engineering possibility, not carrier efficiency, is the only precondition.

As a matter of law, LECs must provide nondiscriminatory access to network elements on an unbundled basis at any technically feasible point... in a manner that allows requesting carriers to combine such elements in order to provide such telecommunications services.¹⁹

There are few, if any, bounds to unbundling possibilities. As defined by the Act, “network elements” can include physical property, such as plant and equipment, as well as any features or proficiencies that such facilities may have. Presumably, the only limitation on network element specification is that the subject assets have to be used in producing a “telecom service.”

Based on its reading of the Act's conference report, the FCC believes network elements could be unbundled *or* bundled aspects of service provisioning. This extends, without limitation, to transmission, switching, and other capabilities. Among aggregation options are "an entire local loop, for example, could constitute a single network element, or comprise several network elements."²⁰ Under Section 3 of the Act, the Commission can find a network element to be any facility or equipment used in the provision of a telecom service. Such term also includes features, functions, and capabilities that are provided by means of such facility or equipment, including subscriber numbers, databases, signalling systems, and information sufficient for billing and collection or used in the transmission, routing, or other provision of a telecom service.²¹

In specifying which aspects of carrier provisioning should be defined as network elements, the Act provides that the FCC must consider if access is necessary, given the proprietary nature of certain network elements. But the Commission's primary concern appears to be the well being of entrants, and whether "the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer."²² The network efficiency of incumbents seems to have little pertinence to this mission.

The Commission believes its role is to assure that entrants wishing to compete with incumbent LECs can purchase access to those network elements that they do not possess, without paying for elements that they do not require.... [This permits] entrants to enter the LEC's market gradually, building their own networks over time, and purchasing fewer unbundled elements as their own networks develop..., and at the same time build their own facilities only where it would be efficient.²³

To add specificity to the determination of network elements, the Commission has indicated that it will review state experience, since several jurisdictions have already opened up LEC networks to facilities competition and resale. Of course, many IXCs have filed petitions for entry at the state level. For example, AT&T is currently seeking to enter local service provisioning on a resale basis across the country, using its "wholesale tariff" approach.

In seeking interconnection in the states, competitive access providers (CAPs), IXCs, and other entrants have advocated unbundling of loops, switches, transport, and databases. Not infrequently, operator services, signal links, transfer and control points have been advanced as network elements as well, with requests of more than ten network elements by new entrants not being uncommon. In past rulemaking, the FCC itself considered specifying advanced intelligent network elements, including signalling systems and databases.²⁴

Whatever support particular network elements may garner, unbundling, as it relates to the local loop will be of special importance. The concern of the Congress in this area was cited by the legislation's conference report. The Act's competitive checklist for the RBOCs specifically includes access to the loop as a precondition for relief. These firms must provide access and interconnection to "local loop transmission from the central office to the customer's premises, unbundled from local switching or other services."²⁵

6.0 Compensation and Related Issues

Since the time of the original MCI entry application in the 1960s, obtaining reasonably priced access to bottleneck network facilities has constituted a major barrier to entry. Resolution of the pricing or compensation aspects of interconnection has not come swiftly. For instance, accord was reached in pricing specialised common carrier interconnection (for MCI and others) only by the late 1970s. This “accomplishment” encompassed about fifteen years of pleadings, regulatory decisions, court appeals, and more regulatory decisions after MCI’s application was filed. A comparable period has been spent on the process of resolving access compensation issues respecting divested RBOCs’ facilities.

Given this long history, it might be expected that the Congress would provide the clearest instructions possible for framing future rules governing interconnection. A major focus of these legislative guidelines should have been how prices for carrier bottleneck facilities are to be derived. The primary alternatives discussed for the use of exchange plant include demand-based, cost-based, prevailing market, and negotiated rates.

The “pricing standards” provisions of the 1996 Act do offer important instructions regarding interconnection, unbundling, and resale compensation.²⁶ Central to these is the determination that the traditional regulatory (and economic) philosophy of *cost-based rates* should be carried forward. Of course, this concept was fundamental to past rate of return regulatory regimes. It contrasts markedly with the requirements of many state initiatives. State regulatory authorities have fostered price regulation (e.g., price caps), “value of service” or demand (elasticity) based algorithms, negotiated charges, and even market-based (deregulated) results.

The legislators were well advised to require use of a cost-based regime. For instance, if the holder of the bottleneck resource was able to base rates on “what the traffic will bear,” or users’ demand characteristics, rather than the underlying costs of service, then most ALECs needing that essential resource could be priced out of the market. Entry would only be feasible for facilities-based providers, and would be quite limited. In particular, alternative supply would succeed only in situations where an entrant’s price (based on the full costs of new equipment) was less than an established firm’s floor price covering only out-of-pocket or marginal costs of embedded plant.

References to use of a costing regime can be found in the legislation in stipulations related to interconnection, transport and traffic termination, wholesale rates for resold services, universal service support, capital recovery, and cross-subsidisation prohibitions. Of these, costing determinations for wholesale rates will be of the most importance over the next few years.

There will be a need for economic wholesale prices by both ALEC facility-based and pure resale entrants. These firms will have to grow from a very small customer base. Their initial market entry will be characterised by low near-term penetration levels, concentration in localised (urban) areas, and substantial or complete dependence on resale of ILEC services. Full facilities-based entry may not be evident until the end of the decade. During the interim, resale will be the engine of competitive growth, assuming cost-based wholesale prices can be devised.

Along with these prices, cost-based reciprocal compensation arrangements will be needed to facilitate the transition to competition. Such arrangements must take into account changing market share and traffic flows. Clearly, the attractiveness of “bill and

keep” arrangements will shift between ILECs and ALECs with changes in their relative market positions. In selecting a compensation methodology in the coming months, the FCC will also be effectively choosing the financial “winners and losers” among the participants. It is hoped that the Commission’s determinations will be cost-based, as the framers of the Act intended. Compensation arrangements will then be as competitively neutral as possible.

7.0 Legislative and Regulatory Costing Guidelines

7.1 Resale “Without Apology” and Avoidable Cost

The framers of the legislation realised the key role that resale would play in fostering competition. Accordingly, they ensured that incumbent carriers and state commissions would have no capacity to thwart resale. And, they provided that a uniform approach would be taken for deriving wholesale rates or the discount afforded to new entrants. For example, respecting resale obligations, Section 251(c)(4) stipulates that:

[I]t is the duty of ILECs to offer for resale at wholesale rates any telecommunications service that the carrier provides at retail to subscribers who are not telecommunications carriers; and not to prohibit, and not to impose unreasonable or discriminatory conditions or limitations on, the resale of such telecommunications service . . .

While the Act does direct that wholesale rates are to be based on cost, this guideline is not, of itself, sufficient to eliminate further dispute. Wholesale rates could be developed from the “bottom up,” i.e., built up from the costs of all functions other than the final retail stage. Alternatively, they could be derived using a “top down” approach, or starting with existing market rates and then subtracting off the costs of the retail function. Only in theory would the results be identical.

This contingency was provided for by the Congress. The Act stipulates that a top down approach should be used to formulate wholesale rates. Section 252(d)(3) requires that in developing wholesale prices for telecom services for the purposes of Section 251(c)(4), an “avoided costs” standard must be employed. That is, i.e.,

[A] state commission shall determine wholesale rates on the basis of retail rates charged to subscribers for the telecommunications service requested, excluding the portion thereof attributable to any marketing, billing, collection, and other costs that will be *avoided* by the local exchange carrier. (Emphasis added.)

The development of wholesale rates and definition of avoidable costs have been addressed in implementing state legislation that preceded passage of the 1996 Act. The IXC’s have already filed resale applications at the state level delineating how they would propose to develop wholesale tariffs. Oftentimes, such tariffs comport with the federal approach, e.g., being based on “exclusion of the identifiable costs associated with applicable retail functions and activities.”²⁷

As identified by resale applicants, avoidable costs should be the marketing, advertising, service ordering, billing and collection, and similar costs associated with the retail function. Estimates of the magnitude of such expenditures are in the range of 30% of service prices to ultimate subscribers.²⁸ These figures have usually been calculated

utilising historical ILEC data and current network configurations, i.e., rather than forecast information or economic based incremental cost calculations.

This use of historical information may reflect the paucity of available incremental data. But, it is also true that entrants are mindful of the time needed to complete new Total Service Long-Run Incremental Cost (TSLRIC) or similar studies versus the near-term value of the “window of opportunity” available for market penetration. With the passage of the new Act, only a short time remains before the formidable RBOCs will be vigorously accelerating their entry into the lucrative home markets of IXC, CATV operators, and the LECs outside current RBOC territory.

Most pure resale entrants and CAPs favour application of TSLRIC to develop wholesale rates on a bottom-up basis, as soon as such studies can be completed. Of course, the support of entrants for TSLRIC is self-serving. Yet, in the last several years, these algorithms have gained acceptance in the US and other countries (see the Appendix, Section II, for a sample listing of TSLRIC applications).

8.0 Costing and Universal Telephone Service

IXCs and other entrants currently champion utilisation of incremental costing. Their support encompasses use of TSLRIC both to establish the rates of the ILEC services that they make use of, and to determine costs attributable to basic exchange offerings. Indeed, the IXCs favour employment of bottom-up costing whether the ILEC offering at issue is a competitive, bottleneck, or “subsidised” service.

On the other hand, ILECs have withdrawn their once strong advocacy of TSLRIC use “across-the-board” for competitive situations. Instead, where markets involve interconnecting carriers, ILECs now favour employment of an historical cost algorithm. This methodology was once anathema for these companies. But, it is now the “methodology of choice,” at least where new entrants are concerned.

These shifting positions of the parties have a direct relationship to the maintenance of universal telephone service. In this regard, it is important to be cognisant of the ILECs’ traditional reliance on core services to ensure recovery of all of their accounting costs. In the past, state administered rate of return regimes permitted ILECs to price their competitive (e.g., intraLATA long distance) offerings below full accounting cost levels. Regulators knew that these firms would be kept financially sound through allocation of the uncovered residuals to core (monopoly local exchange) services.

ILECs’ “rate rebalancing” initiatives over the last decade provide an illustration of such cost shifting. These programs focused on transferring more long distance costs to the local service arena, with the objective of reducing IXCs’ incentives to build their own local exchange facilities. Another example was implementation of the subscriber line charge tax. This assessment burdened monopoly exchange service use with costs attributable to those making long distance calls.

The ILECs formerly supported use of TSLRIC studies because they furnished a means of showing that competitive service rates exceeded their incremental costs, even though falling below levels needed to recover their full accounting costs. This pricing approach was even said to be aiding universal service, since (at least mathematically) any difference between a competitive price and TSLRIC would be better than losing the business. This truly masterful spin on economic theory masks stark reality. Under actual competitive conditions, where there are no monopoly service areas, *every* firm has to

recover its full costs service-by-service, unless it wishes to face dire financial market consequences. Yet, the credibility of this residual pricing/TSLRIC algorithm, or “contributorial” approach, was solidified by repeated support and use by telco monopolies.

Of course, some high cost and disadvantaged local exchange service customers would not be in a position to assimilate the higher rates. Accordingly, on universal service grounds, various funds and other separate subsidy mechanisms have been established over the years. These further subsidies also were charged to the core monopoly services. Because the remaining core service customers have exhibited a high degree of inelastic demand, these subsidies could be absorbed in higher rates.

The new legislative landscape has changed the strategic incentives of both the ILECs and ALECs, and caused them to “swap positions.” ILECs are now quite concerned that as exchange competition takes hold, they will not be in a position to continue to be “made whole” financially for the accounting costs that they are carrying forward into the competitive era. Adherence to TSLRIC for *any* purpose complicates their position. Thus, they have put the concept under vigorous attack. The ILECs’ objective is to have the “lion’s share” of their existing plant made part of the federal universal service fund, and thereby insured against future write down or loss because of competition.

ALECs now favour generalised use of TSLRIC, or bottom-up costing for all services, including core local exchange offerings. A major change in the ALECs’ incentives stems from the fact that under the new legislation, *all* firms will be responsible for recovery of USO subsidies. These will encompass, among other things, essentially all of accounting transfers that ILECs hope to make to the federal universal service fund. Under Section 254(b)(4):

All providers of telecommunications services should make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service.

Beyond these immediate costing aspects of USO, both parties must be concerned with the technical conditions embodied in the Act’s Section 254 requirements. This passage mandates that all consumers have the right to comparable access to service, both in price and quality, whether it is provisioned in rural and high cost areas, or whether consumers have low income or not. In particular, Section 254(b)(3) provides that such rights encompass access to telecom and information services, including interexchange services and advanced telecom and information services, that are reasonably comparable to those services provided in urban areas, and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.

In order to satisfy their legal USO requirements, suppliers will have an ongoing need to direct proportionately greater investment to the US domestic telecom system. If all subscribers are to be served on the same basis, ILEC rural facilities will require upgrading. These technical USO requirements will subsequently translate into capital cost recovery needs. Under competitive conditions, as these events unfold, there is a distinct possibility that write-offs against ILEC stockholders may be necessary.

No doubt, ALECs have contemplated this scenario, and surmised that their allocation of USO financial burdens will be lower if the overall level of “acceptable costs” for inclusion in the federal fund is lower. This surely would energise their support for TSLRIC. Moreover, entrants realise that in the future their net advantage under

TSLRIC will increase as their market shares grow. In short, ALECs are likely to continue their support for general application of TSLRIC.

In contrast, in the future the problem of ongoing recovery of monopoly era embedded costs will diminish in importance to the ILECs. For this reason, and because of the expected ILECs' declining market shares, these companies' current opposition to TSLRIC may waver.

Of course, both ILECs and ALECs will have to cope with the probability that the level of USO requirements placed on the overall industry will increase in the future. This is because the 1996 Act calls for upgrading service standards over time. Section 254(c)(1) stipulates that Universal service is an evolving level of telecom services that the Commission shall establish periodically, taking into account advances in telecom and information technologies and services.

8.1 Cross-subsidisation

The new Act prohibits interservice cross-subsidisation. Implementation of this requirement provides another instance where costing choices will prove crucial. If a TSLRIC regime is utilised for determining wholesale prices, universal service contributions, interconnection, and other purposes, there will be considerable risk that ILECs will not recover their embedded or joint and common costs. To avoid write-offs, while still maintaining competitive rates in markets where entrants appear, only core or not yet fully competitive services will remain as candidates for shouldering the burden of full cost recovery.

These transitional problems for the ILECs may have been foreseen by the framers of the Act, along with the incentives for cross-subsidisation that are created. Nonetheless, the legislation offers no solution for the ILECs. Section 254(k) simply provides that subsidies of competitive services are prohibited.

A telecommunications carrier may not use services that are not competitive to subsidise services that are subject to competition. The Commission, with respect to interstate services, and the States, with respect to intrastate services, shall establish any necessary cost allocation rules, accounting safeguards, and guidelines to ensure that services included in the definition of universal service bear no more than a reasonable share of the joint and common costs of facilities used to provide those services.

These restrictions do not appear to have any "loopholes" that would permit cross-subsidisation between jurisdictions or services. As a result, a considerable portion of the ILECs' 300 billion USD investment could be at risk. By "blocking this exit," the legislation has made the Commission's choice of a costing methodology, as well as its selection of an implementation period (e.g., "flash cut" or a transitional interval), all the more important.

8.2 Interconnection Compensation

The institution of acceptable rates by the ILECs for interconnection, services, and unbundled network elements has long been a bellwether of the efficacy of open entry conditions. Section 251(b)(5) stipulates that exchange carriers have the duty to "establish reciprocal compensation arrangements for the transport and termination of

telecommunications.” Further, ILECs are required to interconnect with any requesting carrier at “rates, terms, and conditions that are just, reasonable, and nondiscriminatory.”²⁹ The legislation furnishes detailed costing guidelines for the determination of ILEC compensation. Section 252(d)(1) stipulates that charges for interconnection and network elements

(A) shall be –

- based on the cost (determined without reference to a rate of return or other rate-based proceeding) of providing the interconnection or network element (whichever is applicable), and
- nondiscriminatory, and

B) may include a reasonable profit.

This language stops short of choosing a specific interconnection costing alternative. However, the language of the FCC Notice seems to strongly favour use of TSLRIC, rather than an historical accounting cost approach. This obviously does not bode well for ILECs’ interests in full recovery of their extant investments. In the FCC’s view, the statute appears to contemplate the setting of prices on a forward-looking cost methodology that does not involve the use of an embedded rate base, such as long-run incremental cost (LRIC).³⁰

The Commission offers some recognition of state efforts, insofar as the use of TSLRIC is concerned. For instance, the Notice discusses provisions of the Michigan telecom statute, which includes detailed rules concerning the employment of TSLRIC for deriving ILEC service rates (see the Appendix). But, the FCC also cites the differences found in state approaches, particularly the treatment of shared and common costs. This review is not entirely positive. Notice is taken specifically of the exclusion of such costs under the California Public Utilities Commission’s TSLRIC calculations.

9.0 Other Implementation Issues

In the period since passage of the Act, the Commission has been kept “fully apprised” by the industry that adoption of TSLRIC-based rates could leave a substantial amount of past ILEC expenditures unrecoverable. But, even if the FCC determines that embedded costs should have some role in interconnection and other price determinations, the window of opportunity for recovery of these costs in service rates *should* be closing. That is, the Act charges the FCC with the responsibility to foster creation of local exchange markets that are workably competitive. In such markets, whatever cost recovery opportunity remains at present will no longer exist.

Hopefully, the Commission will not permit the ILECs to use cost recovery arguments to perpetuate inefficiency. These firms should not be permitted to continue to recover their past costs from other suppliers on a “going forward basis.” Instead, at a minimum, costs incurred after passage of the Act should fall under TSLRIC-based rates. The FCC might consider utilising a short (one year) transitional period for embedded cost recovery. ILECs would be required to undertake TSLRIC studies during that interval, and a TSLRIC regime would be implemented at the end of the period.

A considerable portion of the Notice's costing discussion was devoted to alternative means of allocating joint or common costs and ILEC overhead. Not all of this narrative was cost oriented. If only for completeness, perhaps, the FCC even asked respondents to consider use of demand-based approaches, such as the inverse elasticity rule. Under the circumstances it would be a mistake for the Commission to deviate from cost-based methods.

10.0 Next Steps

The breadth and importance of the issues being addressed by the FCC as a result of the US *Telecommunications Act of 1996* ensure a vigorous and voluminous debate. After receiving submissions in response to its Notice, the Commission will issue its implementation decisions. These almost certainly will be appealed to the courts, possibly all the way to the Supreme Court. Whether implementation of the major provisions in the new Act begins in the near future will depend heavily on the courts review of the forthcoming FCC implementation decisions.

Endnotes

¹ In the past, there have been many, seemingly intractable, interconnection negotiations between the BOCs and their CAP, IXC, and resale competitors. After passage of the Act, however, these parties appear to have quickly found "common ground," and have negotiated several major agreements. For instance, Ameritech and MFS, the largest CAP, have come to terms respecting the entrant's request to sell local phone services in that BOC's five state regional operating area. (*Wall Street Journal*, May 23, 1996, p. B3.) Similarly, BellSouth Telecommunications and MCI Metro Access Transmission Services have reached a similar agreement respecting nine states. (See, e.g., *Agreement*, May 14, 1996, filed with Georgia Public Service Commission.) Bell Atlantic and Jones Intercable have completed the first regional Bell/cable operator agreement that is focused on meeting the Act's "competitive checklist." It permits Jones to connect to the telephone network in Virginia. (*New York Times*, June 4, 1996, p. C4.)

² These combinations differ dramatically from the traditional vertical integration model. As attested to by AT&T's spin off of NCR and Lucent Technologies, that model has been largely abandoned.

³ For example, during the 97th Congress, the House of Representatives' reform bill HR 5158 left subcommittee without a single vote being cast in opposition. This proposal was stymied by filibuster during later debate, until no time remained for passage during the legislative session.

⁴ Many jurisdictions have engaged in the process of putting such provisions in place, with 19 having already acted. In eight jurisdictions, new entrants are actually providing switched local service.

⁵ See *Telecommunications Act of 1996* (hereinafter cited as "1996 Act"), Sec. 252, § 252(1).

⁶ Joint Explanatory Statement of the Committee of Conference, *Conference Report, Telecommunications Act of 1996*, 104th Congress, 2nd Session, Report 104-458, House of Representatives, January 31, 1996, p. 113, emphasis added.

⁷ See 1996 Act, Sections 271-276.

⁸ Notice of Proposed Rulemaking [hereinafter cited as "NOPR"], CC Docket No. 96-98, April 19, 1996, para. 14.

⁹ 1996 Act, Sec. 251, § 251(c)(2)(D).

¹⁰ NOPR, p. 17.

¹¹ NOPR, pgs. 14-15.

¹² NOPR, p. 40.

¹³ NOPR, p.18, (footnote omitted).

¹⁴ NOPR, p. 40.

¹⁵ NOPR, p.40, emphasis added.

¹⁶ “Present usage” based cost allocation procedures are a central component of the process of separating the costs of common facilities between the state and federal jurisdictions. After these “separations” have taken place, “second stage” allocations of costs are made in determining the rates for particular services or groups of services, offered either at the state or interstate level.

The type of allocation factors used at the second stage are not always logically compatible with the present usage based cost distributions made at the first stage of allocation. For instance, costs first allocated to the states based on present usage of common facilities by the two groups, all state and all interstate offerings, could subsequently be allocated further between state local services and state long distance services based on forecast usage of the same facilities. These two allocators, present usage and future usage, may have no relation to one another.

If FCC rules are applied to unseparated costs, this problem should be eliminated. As a result, future development of interconnection service rates should reflect an improved causal relationship between the rates that users have to pay, and the costs that their traffic over common facilities causes suppliers to incur.

¹⁷ NOPR, p. 22.

¹⁸ NOPR, p. 30.

¹⁹ 1996 Act, Sec. 251, § 251(c)(3).

²⁰ NOPR, p. 29.

²¹ 1996 Act, Sec. 3, § 3(a)(45).

²² 1996 Act, Sec. 251, § 251(d)(2)(B).

²³ NOPR, pgs. 26-27.

²⁴ 8 FCC Rcd 6813-4 (1993).

²⁵ 1996 Act, Sec. 271, § 271(c)(2)(B)(iv).

²⁶ 1996 Act, Sec. 252, § 252(d)(1)-(3).

²⁷ Docket No. 6352-U, Order, Georgia Public Service Commission (GPSC), February 6, 1996, p. 2.

²⁸ See, e.g., *Petition of AT&T to*, GPSC Docket No. 6352-U, “Total Wholesale Services Tariff,” December 22, 1995, pp. 5-7.

²⁹ 1996 Act, Sec. 251, § 251(c)(2)(D).

³⁰ NOPR, p.42, footnote omitted. Endnotes

Annex to Chapter 30

Compiled by Walter G. Bolter

World-wide Acceptance of Long-Run Incremental Costing: Sample References in a Governmental Context

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Washington – Washington Utilities and Transportation Commission

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Australia – Australian Telecommunications Authority

I. Utilisation in a Legislative Context

TEXAS: Public Utility Regulatory Act of 1995, enacted by S.B. 319, 74th Legislature, 1995, Amended by H.B. No. 2128, *Sec. 3.359*. Infrastructure Commitment to Certain Entities.

(a)(1)

It is the intent of this section to establish a telecommunications infrastructure that interconnects public entities described in this section. The interconnection of these entities requires ubiquitous, broadband, digital services for voice, video, and data within the local serving area. The ubiquitous nature of these connections must also allow individual networks of these entities to interconnect and interoperate across the broadband digital service infrastructure. The delivery of these advanced telecommunications services also will require collaborations and partnerships of public, private, and commercial telecommunications service network providers.

(b)(1) (F) An electing local exchange company shall provide an entity described in this section with broadband digital special access service to interexchange carriers at no higher than 105 percent of the *long-run incremental cost*, including installation, of such service. (emphasis added).

MICHIGAN: Public Act 179, as amended by 1995 PUBLIC ACT 216, MCL 484.2101 et seq. [*Michigan Telecommunications Act* (amended statute) PA 179; amendments (1995 PA 216) to the *Michigan Telecommunications Act* (1991 PA 179)]

[*Definitions*]

(y) “Reasonable rate” or “just and reasonable rate” means a rate that is not inadequate, excessive, or discriminatory. A rate is inadequate if it is less than the *total service long-run incremental cost* of providing the service. (emphasis added).

(ff) “*Total service long-run incremental cost*” means, given current service demand, including associated costs of every component necessary to provide the service, 1 of the following: (i) The total forward-looking cost of a telecommunication service, relevant group of services, or basic network component, using current least cost technology that would be required if the provider had never offered the service. (ii) The total cost that the provider would incur if the provider were to initially offer the service, group of services, or network component. (emphasis added).

Sec. 202.

In addition to the other powers and duties prescribed by this act, the commission shall do all of the following: (a) Establish by order the manner and form in which telecommunication providers of regulated services within the state keep accounts, books of accounts, and records in order to *determine the total service long-run incremental costs* and imputation requirements of this act of providing a service. The commission requirements under this subdivision shall be consistent with any regulations covering the same subject matter made by the federal communications commission. (emphasis added).

GERMANY: *Telecommunications Act of 1996*, draft, WIK April 1996 analysis, Doll & Nett.

The regulatory authority will grant a compensation to enterprises obliged to provide universal service if the obliged enterprise proves that the *long-run- incremental costs* of an efficient provision including a reasonable return on the capital investment exceed the revenues from the service provided. Compensations (deficits) calculated on this basis will be financed by a universal service fund (§ 20 of the draft Act). All licensees active on the relevant product market of the respective licensed telecommunications service and having a market share of at least 5% of the aggregate turnover in the Federal Republic of Germany in this market have to pay into the fund. {Pages 9-10, emphasis added}.

II. Acceptance\Application by Telecommunications Industry Entities

MAINE: Public Utilities Commission

Submission of NYNEX (New England Telephone), Docket No. 91-200, Maine Marginal Cost Study, April 6, 1992

MCS Overview {Page 1}.

The role of the marginal cost study (MCS), from the Company’s viewpoint, is to . . . [aid] the development of rates. The Company believes that its rates should reflect its *long-run costs*; not only does this send the proper price signals to customers about the cost of various services so that they can choose correctly, but it is also a prerequisite to an efficient and fair competitive marketplace. Consequently, the Company views its MCS as a significant document that will assist in the development of rates which reflect *future costs*. (emphasis added).

CALIFORNIA : Public Utilities Commission

Docket Nos. R. 95-01-020 and R. 95-01-021; January 24, 1995

Comments of Parties {Page 33, *emphasis added*}.

The Coalition proposes that before a new universal service plan is implemented, the LECs first demonstrate the need for subsidized basic exchange services through appropriate *total service long-run incremental cost (TSLRIC)* studies. [13] Second, the LECs must demonstrate that, if the need for a basic service subsidy does exist, the level of competition for basic service must pose a significant threat to the LEC’s ability to fund the identified subsidy requirements. If after such a demonstration it is determined that a significant need for a basic exchange subsidy does exist, the Coalition believes that a competitively neutral universal service funding mechanism is required for the development of effective local exchange competition.

[13]The Coalition defines *TSLRIC* as follows: “ *TSLRIC* means the forward-looking (economic) incremental cost to the LEC caused by providing the entire quantity of the service, network building block/component or group of network building blocks/components in question, using

the most efficient technology deployed most efficiently. The long run means a period long enough so that the cost estimates are based on the assumption that all inputs are variable.” (Coalition’s Comments, p. 3, fn. 4.)

NORTH CAROLINA: Utilities Commission

Staff/BellSouth Telecommunications Price Regulation Stipulation, Docket No. P- 55, Sub 1013, January 17, 1996

II. Definitions

E. *Long-Run Incremental Cost (LRIC)* - The cost the Company would incur (save) if it increases (decreases) the level of production of an existing or new service or group of services. LRIC consists of costs associated with adjusting future production capacity that are causally related to the rate elements being studied. These costs reflect forward-looking technology and operational methods.

V. Pricing Rules

A. General, 7. The price for any individual rate element for any service offered by the Company shall equal or exceed its *LRIC* unless: (1) specifically exempted by the Commission based upon public interest considerations, or (2) BellSouth in good faith prices the service to meet the equally low price of a competitor for an equivalent service. (emphasis added).

GEORGIA: Public Service Commission

Universal Access Fund, Wood Testimony (CATV Assoc.), Docket No. 5825-U, April 5, 1996

Q.How should the “reasonable actual costs” of providing basic local exchange service be calculated?

A.In order to determine whether a subsidy exists (and to quantify any such subsidy), a *Total Service Long-Run Incremental Cost* (“*TSLRIC*”) should be calculated. A *TSLRIC* study includes all costs that are caused by the decision (or requirement) to offer the service being studied. Alternatively stated, a *TSLRIC* is a measure of the costs that are avoided if the service being studied is not offered. *TSLRIC* studies are based on forward looking assumptions, including the assumption that the most efficient available technologies will be used. In this regard, *TSLRIC* is a measure of the costs that would be incurred by a firm operating in an effectively competitive marketplace to provide the service in question. In order to quantify the amount of universal service funding necessary to protect Georgia ratepayers and maintain affordable rates, the Commission should seek an answer to the question “What cost would be incurred by an *efficient* firm to provide basic local exchange service?” A *TSLRIC* study, if properly conducted, provides an answer to this question. {Page 9, emphasis added}.

European Commission (EC)

Bell South Europe Comments, EC Liberalisation Green Paper, March 15, 1995

II. The Need for Economically Efficient Interconnection Charges

A. Development of a Framework for Interconnection

This framework should include the setting of objectives that promote economic efficiency through effective competition. In other words, interconnection charges should:

- Reflect cost causation
- Stimulate efficiency
- Promote effective competition

BellSouth Europe supports the concept that the cost causation principle is inherent in *long-run incremental costs (LRIC)*. Both the WIK/EAC and Arthur Anderson interconnection studies

prepared for the Commission, support the cost causation nature of LRIC. {Page 4, emphasis added}.

III. Comments of Regulatory Commissions

WASHINGTON: Utilities and Transportation Commission
Docket No. UT-950200, April 11, 1996 {Page 82}

The Commission finds, consistent with the presentations of most parties that addressed cost issues, that the appropriate measure of costs is *Total Service Long-Run Incremental Cost (TSLRIC)*. the Commission has found this measure of costs to be appropriate in prior cases. [footnote 43 omitted] Incremental costs are appropriate because they measure the additional costs that are incurred by providing an additional service. TSLRIC therefore represents the economic price floor. If the revenues from a service exceed the *TSLRIC* of that service, then that service is not being cross-subsidized. If the firm were to stop providing that unit, its revenues would fall by more than its costs. [44]

[44] Having prices exceed their respective *TSLRICs* is a necessary but not sufficient condition in determining whether those prices are fair, just, reasonable, and sufficient. That determination requires consideration of a much broader set of factors than the *TSLRIC* of the service. (emphasis added).

ILLINOIS: Illinois Commerce Commission

Implementation of Section 13-507 of the Public Utilities Act, as amended by P.A. 87-856, Docket No. 92-0211, August 17, 1994 {Page 4}

The rule adopts the definition of a new term, “*long-run service incremental cost*” (“*LRSIC*”) as opposed to the term “long-run marginal cost” which was used in the previous version of the statute. *LRSIC* is defined as:

the forward-looking additional cost(s) incurred by the telecommunications carrier (“Carrier”) to provide the entire output of a service, including additional resources such as labor, plant, and equipment. *LRSIC* does not include any costs, including common expenses, that would not be avoided if the entire output of the service were not

LRSIC utilizes the concept of forward-looking costs in an effort to assure that incumbent carriers’ costs are reflective of the costs that would be incurred by an efficient new entrant into the market. The underlying assumption is that a carrier’s non-competitive services are not subsidizing its competitive services as long as its competitive services are priced at or above the level that a new entrant into the non-competitive market would price its services in order to cover its costs. (emphasis added).

CONNECTICUT : Department of Public Utility Control
Docket No. 95-06-1795-06-17, December 7, 1995:

[The DPUC has] expressed its preference, in light of Public Act 94-83, for the *Total Service Long-Run Incremental Cost (TSLRIC) methodology over both LRIC and FDC methodologies whenever possible* in the belief that TSLRIC better demonstrates the relative impact of technological progress and competitive proficiency on current financial commitments of the sponsor. The TSLRIC methodology represents a modification of the LRIC approach by utilizing total demand for a service as the base for calculating the incremental cost of addition, replacement or enhancement to the service. This produces a forward-looking cost similar to the LRIC methodology, but reduces some of the economic distortions that might otherwise emerge using a narrower base of analysis. {Page 12, emphasis added}.

AUSTRALIA: Australian Telecommunications Authority (Austel)
Annual Report 1991-1992, Chapter Two: Competition Issues

We are in the process of acquiring econometric modeling tools to be used to derive costs associated with different parts of the Australian telecommunications network. The acquisition of the models follows an identified need to have the ability to undertake econometric analysis when examining . . . the floor price of telecommunications products or services in cases where we are investigating alleged cross-subsidisation. . . . The econometric models acquired have been developed over many years by Bell Communications Research (Bellcore). . . . The Network Cost Analysis Tool (NCAT) model will take into account both the capital and operating costs of delivering services. The NCAT model has a forward-looking orientation. It examines the *long-run costs of service* provision, including the cost of future investments resulting from increases in demand for services. (Page 16, emphasis added).