Interconnection and Traffic Termination

Q. Does the 1996 Telecom Act provide any guidance concerning the pricing issues in the phase of the proceeding?

A. Yes. The 1996 Act clearly distinguishes between a "bottom up" approach to pricing, which applies to unbundled service elements and the transport and termination of traffic between carriers (the topics in this phase of the proceeding), and a "top down" approach that applies to incumbent LEC retail services offered at wholesale prices for resale by competing carriers (the topic in Phase II of this proceeding).

Before discussing the bottom up approach in detail, it is worth noting that the differences in the prices set in this phase and those set in Phase II could potentially create profitable opportunities for competitors to pick and choose between wholesale rates for bundled retail services and the rates charged for the unbundled component parts that collectively create those bundled services. While it is always cheaper to buy an assembled automobile than to buy the individual auto parts, that may not always be the case in the telephone industry, under the 1996 Telecom Act.

In the 1996 Telecom Act, the term "wholesale services" is used to describe the offering of an LEC's tariffed retail services (e.g., local exchange service, call waiting service), at a discount which reflects the removal from the retail price of costs the LEC can avoid when providing these services at wholesale. That is, a wholesale price is established based upon the retail price minus the prorated share of the expenses that the LEC can avoid by not selling the service to individual end users. [Section 251(c)(4).] The approach is thus *top-down*, and the avoided costs are calculated on the same basis as the LEC's retail rates. On the other hand, *unbundled elements* (e.g., local loops, switching) are disaggregated parts of the LEC's service operations that can be used by

competing carriers in assembling their own retail offerings. Although unbundled elements (like local loops) are carrier-to-carrier offerings and thus could be classed as "wholesale" in an economic sense, they are not so designated in the language of the Act.

Section 252 (d) of the Act sets forth the pricing standards that the FCC and state commissions must adhere to in pricing interconnection and unbundled network elements:

> 252 (d) PRICING STANDARDS-
> `(2) CHARGES FOR TRANSPORT AND TERMINATION OF TRAFFIC-
> `(A) IN GENERAL- For the purposes of compliance by an incumbent local exchange carrier with section 251(b)(5), a State commission shall not consider the terms and conditions for reciprocal compensation to be just and reasonable unless--
> `(i) such terms and conditions provide for the mutual and reciprocal recovery by each carrier of costs associated with the transport and termination on each carrier's network facilities of calls that originate on the network facilities of the other carrier; and
> `(ii) such terms and conditions determine such costs on the basis of a reasonable approximation of the additional costs of terminating such calls.

While the exact meaning of this language is subject to differing interpretations, it seems clear that Congress did not want regulators setting interconnection and unbundled element rates to take a "business as usual" approach. Most jurisdictions adopt such an approach in the context of a rate-of-return or other rate-based proceeding, and considerable weight is given to embedded cost data. In some jurisdictions, the linkage between embedded cost and rates has at times been very direct and near-absolute: the embedded costs were allocated to various service categories, and this largely determined the rates charged. At least in recent years, however, most jurisdictions have followed procedures in which the linkage is less direct

and more flexible. Embedded costs remain important, but they largely influence or control the overall revenue level, without necessarily controlling the rates charged for specific items. A variety of information is used in determining specific rates, including "economic" cost estimates.

For instance, the target revenue stream is often determined by embedded rate of return data and then divided between the various service categories on the basis of historic rate relationships, value of service patterns, relative levels of economic cost, and other considerations. Many jurisdictions rely increasingly upon some form of estimated economic cost (e.g., long run incremental cost), but regulators have typically allowed a substantial mark-up, or contribution, above cost, to give the carrier an opportunity to earn a fair rate of return on its embedded investment. Accordingly, the language in the 1996 Telecom Act prohibiting "reference to a rate-of-return or other rate-based proceeding" is very significant, since it seems to express the intent of Congress that regulators should not simply apply their standard rate setting methods to the pricing of unbundled network elements.

Given the statutory language prohibiting any reference to "a rate-of-return or other rate-based proceeding, the obvious alternative is to set these rates based upon some form of economic cost, perhaps with an additional mark-up or contribution to cover common costs and to ensure the incumbent is given an opportunity to earn a reasonable profit.

Recently, it seems the form of economic cost that has been gaining the most popularity is *TSLRIC,* which stands for *total service long run incremental cost*. As I explained in my testimony in Phase I of this proceeding, TSLRIC is defined as a firm's long-run total cost of producing all its goods and services except the service in question, subtracted from the firm's long-run total cost of producing all its goods and services

including the service in question. In effect, it measures the difference between producing a service and not producing it.

Another alternative would be to set local interconnection and unbundled element prices based upon long run marginal cost. Marginal cost is the change in total cost resulting from a change in output, and thus it focuses attention on the addition to costs which arises from a specific activity or consumption decision. This approach to costing is inherently consistent with the language of the 1996 Telecom Act, which specifies that state regulators shall "determine such costs on the basis of a reasonable approximation of the additional costs of terminating such calls."

The distinction between TSLRIC and marginal cost in this context is relatively minor. At the risk of oversimplifying, TSLRIC would consider the additional cost of terminating local traffic on an aggregate, average basis, while marginal cost is focused on the change in the total cost resulting from terminating additional traffic. At least when these two cost concepts are studied in the long run planning horizon, one would not expect a substantial difference in estimates of TSLRIC and marginal cost.

Q. Has the FCC made any recent determination with respect to local interconnection (transport and termination) rates?

A. Yes. Paragraph 1054 of the Implementation Order requires interconnecting carriers to use a forward-looking, economic cost-based approach in pricing mutual transport and termination. Furthermore, the Order specifies that the cost of traffic termination must not include loop costs:

> 1057. We find that, once a call has been delivered to the incumbent LEC end office serving the called party, the "additional cost" to the LEC of terminating a call that originates on a competing carrier's network primarily consists of the traffic-sensitive component of local switching. The network elements involved with the termination of traffic include the end-office switch and local loop. The costs of local loops and line ports associated with local switches do not vary in proportion to the number of calls terminated over these facilities.[note deleted] We conclude that such non-traffic sensitive costs should not be considered "additional costs" when a LEC terminates a call that originated on the network of a competing carrier. For the purposes of setting rates under section 252(d)(2), only that portion of the forward-looking, economic cost of end-office switching that is recovered on a usage-sensitive basis constitutes an "additional cost" to be recovered through termination charges.

The FCC's focus on economic costs, as well as its emphasis on usage sensitive costs) is fully consistent with the language of the 1996 Telecom Act, and to that extent the FCC's approach is a reasonable one for the Board to follow, even if the FCC's rules are not binding on the Board. However, the FCC has gone further, and attempted to limit state regulators to just three methods for setting local termination rates:

> 1055. States have three options for establishing transport and termination rate levels. A state commission may conduct a thorough review of economic studies prepared using the TELRIC-based methodology outlined above in the section on the pricing of interconnection and unbundled elements. [note deleted] Alternatively, the state may adopt a default price pursuant to the default proxies outlined below. If the state adopts a default price, it must either commence review of a TELRIC-based economic cost study, request that this Commission review such a study, or subsequently modify the default price in accordance with any revised proxies we may adopt. As previously noted, we intend to commence a future rulemaking on developing proxies using a generic cost model, and to complete such proceeding in the first quarter of 1997. As a third alternative, in some circumstances states may order a "bill and keep" arrangement, as discussed below.

If this language is upheld on appeal, it would preclude consideration of marginal cost, or any type of economic cost estimate other than one prepared in strict conformity with the TELRIC methodology adopted by the FCC.

Q. The FCC's pricing rules have been stayed by the Court of Appeals. As an economist, do you think the Board should follow the FCC's approach to pricing local termination anyway?

A. Yes. While it may not be necessary for the Board to limit its options to the narrow range specified by the FCC, in this instance the general approach adopted by the FCC is a reasonable one, and the TELRIC methodology is unlikely to yield results that deviate greatly from other methodologies which would also be appropriate (e.g., marginal cost). The FCC's TELRIC approach will result in a price of local termination that is a relatively low amount per unit of traffic (e.g., minute). I think this is a reasonable result, because it is consistent with historic patterns of cost recovery in the telecommunications industry, and it will help encourage a more rapid transition towards effective competition, since new entrants will not face the burden of paying enormous amounts to the incumbent carrier in the event their traffic volumes are not in balance.

The FCC's approach to the costing and pricing of local interconnection and termination service will result in a relatively low rate per minute of local traffic, which is appropriate and consistent with historic pricing patterns. Admittedly, a similar result could be achieved by setting prices based upon marginal cost (rather than TELRIC). A marginal cost approach has theoretical appeal, and it may actually conform more closely to the language in the 1996 Telecom Act referencing the "additional cost" of terminating traffic. However, in this context a marginal cost approach is unlikely to yield results that differ substantially from the results of a TELRIC approach. If the Board

uses the FCC's TELRIC methodology, it will not have to revisit the issue in the event this portion of the FCC's Implementation Order is upheld on appeal.

Q. Has BA-NJ provided a cost estimate for local termination which conforms to the FCC's TELRIC approach?

A. Not yet. BA-NJ has indicated that it intends to provide "forward-looking cost studies [completed] in a manner consistent with the FCC Order." [Reply of Bell Atlantic - New Jersey, Inc. to Petition for Arbitration Filed by Sprint Communications Company, L.P., Docket No. T096090670, October 15, 1996, at 21.]

Q. Is the precise level of local termination rates crucial?

A. No. Regardless of whether these rates are based upon TELRIC or marginal cost or some other reasonable estimate of the "additional" (traffic sensitive) costs of completing calls, the rates will likely be less than a cent per minute. Although the exact rate level could vary by a few tenths of a cent per minute, depending upon the costing methodology used and the extent to which a mark-up is allowed, such variations are unlikely to have a substantial impact on the transition to effective competition, assuming the same rates are charged by both the incumbent LEC and the new entrants. Where the rates are symmetrical, the exact rate level will only affect the profitability of each LEC to the extent their originating and terminating traffic are not in balance.

Consider, for example, the situation confronting a competitive LEC with outgoing traffic volumes that differ from their incoming volumes by 20%. If this carrier's average residential and business customers have 480 and 900 minutes, respectively, of outgoing traffic each month, variations in the local termination rate of .1 cent per minute would have a monthly impact of about 10 cents per residential customer and 18 cents

per business customer. Accordingly, if the local termination rates charged by the incumbent and competitive LECs are symmetrical, the precise level of these rates is unlikely to have a substantial impact.

The FCC has concluded that the rates for transport and termination of traffic should be treated as presumptively symmetrical, ¶ 1089, and that the rates for the dominant incumbent LEC, established on the basis of such a cost study, should be the rates for all competing carriers in the incumbent's service area. The rationale advanced by the FCC is as follows:

> Both the incumbent LEC and the interconnecting carriers usually will be providing service in the same geographic area, so the forward-looking economic costs should be similar in most cases. We also conclude that using the incumbent LEC's forward-looking costs for transport and termination of traffic as a proxy for the costs incurred by interconnecting carriers satisfies the requirement of section 252(d)(2) that costs be determined "on the basis of a reasonable approximation of the additional costs of terminating such calls." Using the incumbent LEC's cost studies as proxies for reciprocal compensation is consistent with section 252(d)(2)(B)(ii), which prohibits "establishing with particularity the additional costs of transporting or terminating calls."[note deleted] If both parties are incumbent LECs (*e.g.*, an independent LEC and an adjacent BOC), we conclude that the larger LEC's forward-looking costs should be used to establish the symmetrical rate for transport and termination. We conclude that larger LECs are generally in a better position to conduct a forward-looking economic cost study than smaller carriers. [Implementation Order ¶1085.]

I agree with this reasoning, and believe it is appropriate for the Board to establish symmetrical rates. I would also note that the 1996 Telecom Act specifies that local termination rates are for "mutual and reciprocal recovery" of costs by each carrier. While the costs of termination could potentially differ from carrier to carrier, it is

reasonable to assume that the costs are about the same, absent a showing to the contrary.

Q The 1996 Telecom Act allows regulators to approve bill-and-keep arrangements under some circumstances. Is bill-and-keep (mutual traffic exchange) a reasonable approach in New Jersey?

A. Yes. Bill-and-keep (i.e., mutual traffic exchange) is an economical and administratively simple method for the settling of interconnection charges. Absent clear evidence of cost differentials and traffic imbalances, it is the preferred solution, since it greatly reduces the costs of data collection and billing.

In evaluating the feasibility of using mutual traffic exchange, the central question is whether the traffic moving one way approximates the traffic moving the other way. If the two carriers have similar customer mixes, this should not be a problem. However, where competitors are concentrating in niche markets, traffic may be heavily one-way. Accordingly, while there are benefits to mutual traffic exchange, if this system is adopted, it will be necessary to include provision for periodic reviews to confirm that traffic remains roughly in balance. Where traffic is significantly out of balance (e.g. one LEC's incoming local traffic exceeds its outgoing traffic by more than 20%), it would be appropriate to abandon the exchange mechanism in favor of symmetrical rates. While this would impose additional administrative costs, it would be fairer to the carriers involved. Traffic volumes could be sampled on a periodic basis (e.g. once a day) and then evaluated on a quarterly basis. If two carriers find that their traffic has been significantly and persistently out of balance for several quarters in a row, it would be reasonable to abandon bill and keep in favor of low, symmetrical termination rates. The

latter system would continue in place unless conditions change sufficiently to bring the traffic volumes back into rough balance on a continued basis.