

*Section 1: CBT's Cost Studies*

*A. TELRIC and LRSIC*

**Q. The Company is presenting studies of both total element long-run incremental costs (TELRIC) and long-run service incremental costs (LRSIC). Before discussing specific cost studies and their results, would you briefly describe the difference between these two kinds of long-run incremental cost studies?**

A. Yes. As early as 1993, the Commission defined the LRSIC of a service as

equal to the cost of increasing the volume of production from zero to a specified level while holding all other product and service volumes constant. [Case No. 92-1149-TP-COI, Alternative Regulation Rules.]

That is, LRSIC cost is limited to the difference between the firm's cost of producing all services including the service in question, and the cost of producing all services excluding the service in question. This definition was adopted in the cost study provisions attached to the Local Service Guidelines adopted by the Commission in Case No. 95-845-TP-COI, Appendix A, B.1. (p. 2.).] The Commission further held that:

[t]he LRSIC of a product or service is the sum of all its volume-sensitive costs and its service-specific fixed costs. [Id., B.1.b.(p. 3.)]

That is, LRSIC includes direct costs only. The Commission further defined direct costs as follows:

Direct costs means the costs directly caused by the production of a product or service. Alternatively, direct costs can be identified as those costs which could be eliminated were a product to be discontinued. In either case, the costs are calculated by holding constant the production of all other products and services. [Id., J.6. (p. 7). (The LRSIC concept was superseded by "TELRIC," discussed below, in the final version of the Guidelines issued after the FCC's TELRIC Order.)]

*LRSIC* is thus 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, and thus focuses attention on the specific costs that are incrementally traceable to the presence or absence of a particular service where other services will be produced in any event. *LRSIC* is the designation in Ohio for the kind of cost that is more typically called *TSLRIC*, or total service long-run incremental cost. I will use the two terms interchangeably, but will generally use the former acronym in this testimony.

*TELRIC* is a term coined by the FCC to describe a similar cost concept that relates to network elements, instead of a service.

**Q. *LRSIC* and *TELRIC* are alike in being long-run economic cost concepts. Do they have any significant differences?**

A. Yes. By coining its own term, *TELRIC*, the FCC has highlighted certain distinctions between its approach to costing network elements and the *LRSIC* concept as it has been applied generally to telecommunications services. First, in its Implementation Order, cited below, the FCC required that a portion of shared or common costs be included in *TELRIC*, even if these costs do not vary with the presence or absence of the element in question. Since the FCC's requirements in this regard are not consistent with the standard definition of *TSLRIC* (*LRSIC*) in its pure form, the FCC has avoided some potential confusion by using the term *TELRIC*. Second, when the *TSLRIC* concept is applied to elements (rather than services), the magnitude of the joint and common cost problem tends to be reduced. As the FCC notes:

*TELRIC*-based pricing of discrete network elements or facilities, such as local loops and switching, is likely to be much more economically rational than *TSLRIC*-based pricing of conventional services, such as interstate access service and local residential or business exchange service. . . . [S]eparate telecommunications services are typically provided over shared network facilities, the costs of which may be joint or common

with respect to some services. . . . By contrast, the network elements, as we have defined them, largely correspond to distinct network facilities. Therefore, the amount of joint and common costs that must be allocated among separate offerings is likely to be much smaller using a TELRIC methodology rather than a TSLRIC approach that measures the costs of conventional services. [*Interconnection Order*, ¶678.]

Stated another way, *total service* incremental cost estimates tend to be greatly depressed because of the dramatic impact of economies of scope. Many costs are incurred in common when producing multiple services; these costs vary little when a particular service is added or deleted from the mix, and thus have little or no impact on LRSIC. By contrast, a *total element* estimate is less likely to be depressed by economies of scope, since most network elements are largely or entirely independent of each other. For example, the FCC notes that

[t]he costs of local loops and their associated line cards in local switches, are common with respect to interstate access service and local exchange service, because once these facilities are installed to provide one service they are able to provide the other at no additional cost. [Id.]

Thus, neither the LRSIC of local service nor the LRSIC of interstate access will include loop and line card costs, and these costs will have to be recovered in rates by cost allocations, markups, or other procedures which are inherently arbitrary and controversial. By contrast, the TELRIC approach largely avoids this problem, since local loops are analyzed as a separate unbundled element, which is not necessarily produced on a joint or common basis with other network elements. Although loops physically connect with switches and other network elements, to a large degree each element is produced separately, rather than on a joint or common basis.