

1 *Economic Costs vs. Embedded Costs*

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3 **Q. Please turn to the third section of your testimony. Could you comment on the**
4 **importance of “economic costing” in pricing the network?**

5 A. Certainly. Virtually all parties, including USWC, agree that prices must be based on
6 economic costs to assure a complete transition to an effectively competitive
7 marketplace. According to the Company,

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9 Now that the “marketplace devoid of competition” has been jettisoned in
10 favor of a fully competitive local and interexchange market, the primary
11 rationale for uneconomic pricing has completely fallen. This Commission
12 must now address the issues of economic pricing for local exchange
13 service concurrent with the further opening of the marketplace to
14 competition. [USWC, Wilson Direct, p. 2.]

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16 I agree that this is what the Commission should do. However, while advocating
17 “economic pricing” the Company is actually proposing in this case is not based upon
18 economic costs, nor is it based upon a sound interpretation of economic theory. To an
19 economist, economic costing and pricing involves the type of analysis which I present
20 later in this testimony.

21 The September 1996 NRRI study distinguishes economic costs from
22 embedded or historical costs:

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24 First, in cases before both the Federal Communications Commission
25 (FCC) and state public utilities commissions, parties have argued over the
26 merits of basing rates on incremental (economic) costs versus embedded
27 (historical), fully distributed costs. [*Competition-Enhancing Costing*
28 *and Pricing Standards for Telecommunications Interconnection*,
29 NRRI, p. 1.]

30 And,

31 The notion of the embedded cost of service has less and less meaning in
32 today’s evolving telecommunication markets. [Ibid., p. 15.]

1 The NRRI report is consistent with the widely held view that state commissions
2 should move away from embedded cost allocation approaches, and use economic or
3 incremental costing methods instead. If this is done in this proceeding as I recommend,
4 the Company's rate increases should be rejected, since they are not justified by the
5 available data concerning economic costs.

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7 **Q. Please explain the term "economic cost," as contrasted with "embedded cost."**

8 A. Accountants are concerned primarily with the proper recording and measuring of
9 historical costs based upon a uniform set of rules. The data, recorded in the books and
10 records of a firm, are referred to as "accounting" or "embedded" costs. Economists, on
11 the other hand, have developed a comprehensive set of theories concerning cost, which
12 they use to describe, explain, and predict the behavior of firms and individuals (e.g.,
13 consumers).

14 While embedded costs--the accountant's measure of cost--are quite practical,
15 readily available, and fairly consistent from firm to firm, the economist's idea of cost is
16 more useful in analyzing the critical decisions made by management and government.

17 In some telecommunications jurisdictions, the linkage between embedded cost
18 and telephone rates has at times been very direct and near-absolute: the embedded
19 costs were allocated to various service categories, and this largely determined the rates
20 charged. At least in recent years, however, most jurisdictions have followed procedures
21 in which the linkage is less direct and more flexible. Embedded costs remain important,
22 but they largely influence or control the overall revenue level, without necessarily
23 controlling the rates charged for specific items. A variety of information is used in
24 determining specific rates, including "economic" cost estimates.

1 For instance, the target revenue stream is often determined by embedded rate
2 of return data and then divided between the various service categories on the basis of
3 historic rate relationships, value of service patterns, relative levels of economic cost,
4 and other considerations. Many jurisdictions rely increasingly upon some form of
5 estimated economic cost (e.g., long run incremental cost), but regulators have typically
6 allowed a substantial mark-up, or contribution, above cost, to give the carrier an
7 opportunity to earn a fair rate of return on its embedded investment.

8 Recently, the form of economic cost that has been gaining the most popularity is
9 *TSLRIC*, which stands for *total service long run incremental cost*. As explained at
10 length in Appendix B, “Costing Definitions,” TSLRIC is defined as a firm’s long-run
11 total cost of producing all its goods and services except the service in question,
12 subtracted from the firm’s long-run total cost of producing all its goods and services
13 including the service in question. In effect, it measures the difference between producing
14 a service and not producing it. This is particularly relevant when evaluating claims that,
15 in the aggregate, a service is “subsidized” by other services produced by the same firm.

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17 **Q. Does TSLRIC approximate allocated embedded cost?**

18 A. No. There are many factors contributing to the gap between total embedded cost and
19 TSLRIC, including the impact of changing technology and the fact that long run cost
20 calculations involve a higher degree of optimization or efficiency than can generally be
21 achieved in actual practice.

22 However, the most important factor explaining the gap between TSLRIC and
23 embedded total costs is probably the manner in which certain joint and common costs
24 are treated in TSLRIC calculations. Where network elements are required for multiple

1 telecom services, the cost of these elements may not be reflected in the TSLRIC
2 calculations for any single service. As the FCC explains:

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4 676. Certain types of costs arise from the production of multiple
5 products or services. We use the term "joint costs" to refer to costs
6 incurred when two or more outputs are produced in fixed proportion by
7 the same production process (*i.e.*, when one product is produced, a
8 second product is generated by the same production process at no
9 additional cost).

10
11 Since the second product is generated at no additional joint cost, and TSLRIC
12 only focuses on the additional cost of each product, the joint cost does not appear in
13 the TSLRIC amount. Stated differently, if the cost of a particular network element
14 remains the same regardless of whether or not any particular telecom service is
15 produced using that element, the cost of that element will not be reflected in the
16 TSLRIC of the individual services. In mathematical terms, the cost of the element drops
17 away from the TSLRIC calculations, and thus the TSLRIC of each individual service
18 will exclude the cost of that element.

19 A large gap between TSLRIC and price is typical for most telecom services.
20 For instance, when the TSLRIC concept is applied to a service like Call Waiting, the
21 estimated cost is likely to be just a few pennies per month. Similarly, when the TSLRIC
22 concept is applied to switched access, the same pattern exists: the TSLRIC amount is a
23 small fraction of the established price.

24 Although TSLRIC calculations for individual services do not include the full
25 amount of joint and common (shared) costs that are incurred by the firm, this does not
26 mean these costs cannot be recovered from customers. To the contrary, regulators
27 have generally allowed recovery of joint and common costs when setting the tariffed
28 rates. Whether by allowing a substantial mark-up above TSLRIC, by setting prices on

1 the basis of cost allocation procedures, or by using some other procedure to reconcile
2 rates with the overall embedded revenue requirement, regulators have historically given
3 carriers an opportunity to recover their joint and common costs. While the pattern of
4 joint and common cost recovery under competitive conditions may differ, the overall
5 result is similar to that achieved under regulation: joint and common costs are typically
6 recovered from all services or products that require or benefit from these costs.

7 Under competitive conditions, an efficient firm has an opportunity in the long run
8 to recover its total costs, including its joint and common costs. The extent to which the
9 joint and common costs are recovered through the prices charged for particular
10 services, or recovered from particular groups of consumers will not be uniform,
11 however. Instead, this pattern of cost recovery will be heavily influenced by demand
12 conditions, including relative levels of perceived value, the extent to which close
13 substitutes exist for particular products or services, and the price of those alternatives.

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