

**BELLSOUTH REPLY COMMENTS**

**WC DOCKET NO. 03-173**

**ATTACHMENT 1**

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of )  
 )  
Review of the Commission's Rules Regarding )  
The Pricing of Unbundled Network Elements ) WC Docket No. 03-173  
And the Resale of Service by Incumbent )  
Local Exchange Carriers )

**Reply Declaration of  
NERA Economic Consulting  
On Behalf of  
BellSouth Telecommunications, Inc.**

**January 30, 2004**

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## **I. INTRODUCTION**

### **A. Statement of Qualifications**

1. We are William E. Taylor, Aniruddha Banerjee, and Harold Ware. We are, respectively, Senior Vice President, Vice President, and Vice President with the Communications Practice at NERA Economic Consulting (“NERA”).
2. We filed our initial Declaration on behalf of BellSouth Telecommunications, Inc. in this proceeding on December 16, 2003. Our Statement of Qualifications is contained therein.

### **B. Purpose of Reply Declaration**

3. This Reply Declaration, filed on behalf of BellSouth Telecommunications, Inc. (“BellSouth”), responds to various parties that filed comments in WC Docket No. 03-173 (“this proceeding”) on December 16, 2003. This proceeding was opened as a consequence of the Notice of Proposed Rulemaking (“*NPRM*”) released on September 15, 2003 by the Federal Communications Commission (“FCC”).<sup>1</sup> In that *NPRM*, the FCC reached the tentative conclusion that its methodology for calculating total element long run incremental cost (“*TELRIC*”) should “more closely account for the real-world attributes of the routing and topography of an incumbent’s network in the development of forward-looking costs.”<sup>2</sup> This tentative conclusion is significant because any such reform of the existing *TELRIC* methodology could lead to substantive revisions in the prices currently set for unbundled network elements (“*UNEs*”).
4. Our Reply Declaration has the following objectives. First, we respond to the false alarm raised by several parties that the reform of the *TELRIC* methodology contemplated by the FCC would resurrect costing methodologies that are now

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<sup>1</sup> FCC, *In the Matter of Review of the Commission’s Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Services by Incumbent Local Exchange Carriers*, Notice of Proposed Rulemaking (“*NPRM*”), WC Docket No. 03-173, September 15, 2003.

universally regarded as unacceptable for setting UNE prices. Specifically, we dispute the erroneous contention by those parties that the reformed TELRIC methodology would lead to the calculation of embedded or short run incremental cost (or some variant of cost that is not forward-looking).

5. Second, we reaffirm our belief that the only sensible application of the “efficient carrier” concept that lies at the core of the TELRIC methodology is one that recognizes two important aspects of the circumstances in which incumbent local exchange carriers (“ILECs”) operate.

- Although an ILEC’s cost to provide a UNE should be determined by a “replacement cost” approach, that only means that the cost should be that of a network that assumes existing network routes and plant and equipment locations but places facilities that incorporate forward-looking (i.e., *currently* available) technology. Thus, the ILEC’s replacement network *may* contain elements of its existing network if efficient operations call for doing so, but would otherwise replace existing network elements with next-generation or newer technology.
- The special circumstances of ILECs, e.g., the carrier-of-last-resort (“COLR”) obligation, the requirement to charge averaged (and potentially subsidized) retail prices, and other regulatory constraints, imply that no single efficiency benchmark can possibly apply to both carriers that are in those circumstances and carriers that are not. Common sense suggests that an ILEC with the COLR obligation cannot avoid the (usually higher) costs of maintaining ubiquity and the ability to provide timely service regardless of the type of customer or customer location. In contrast, a competitive local exchange carrier (“CLEC”) not burdened with either that obligation or other regulatory constraints, and free to choose where and how it operates, can avoid or shed many of the costs that the ILEC incurs.

6. Finally, we address in detail several objections raised by other parties to both the FCC’s tentative conclusion and the reforms to the existing TELRIC methodology such a conclusion would entail. These objections span areas of concern such as the (1) measurement of cost in a competitive market, (2) implications for the proposed reformed TELRIC methodology of various network design issues, (3) efficiency and the impacts of price regulation, (4) depreciation, (5) switching cost and rate structure,

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<sup>2</sup> NPRM, at ¶52.

(6) non-recurring charges and alleged barriers to entry, and (7) cost sharing between narrowband and broadband networks.

## II. RESPONSES TO OPPOSING PARTIES

### A. Forward-Looking, Long Run Cost is Still the Standard

7. Predictably, in responding to the FCC's tentative conclusion in the *NPRM*, parties such as AT&T, MCI, and other CLECs ("the opposing parties" hereinafter) advocate retention of the current TELRIC methodology. In so doing, they reject the FCC's call to bring more realism to the TELRIC methodology and launch instead into criticisms of various imagined scenarios concerning the ILECs' reaction to this proceeding. For example, they criticize the ILECs for supposedly advocating the use of embedded cost or other types of cost that are not faithful to the concept of long run forward-looking incremental cost.<sup>3</sup> The criticism by the opposing parties of such "straw men" cost concepts rings hollow. The fact is that, in concurring with the FCC's tentative conclusion that greater use of actual ILEC data would lead to more accurate cost estimates, neither BellSouth nor NERA advocates the use of embedded cost or anything other than long run forward-looking economic cost.
8. Forward-looking cost clearly means that past or sunk costs have no role to play in the development of UNE prices.<sup>4</sup> As is widely understood, forward-looking cost is the cost that an efficient carrier incurs to serve a specified quantity of demand using the "most-efficient, *currently* available" technology and practices. This definition is significant for what it does *not* imply. Specifically, it does not imply that (1) it must be the cost of a carrier that replaces its network instantaneously with all-new facilities and (2) existing technology or practices can never be considered in the forward-looking

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<sup>3</sup> See, e.g., Declaration of Robert D. Willig on behalf of AT&T Corporation ("*Willig Declaration*") in this proceeding, at ¶14, Declaration of Michael D. Pelcovits on behalf of MCI ("*Pelcovits Declaration*") in this proceeding, at 19, or Association of Local Telecommunications Services, "Analysis of Selected Issues Set Forth in the Notice of Proposed Rulemaking Regarding the FCC's Existing UNE Pricing Methodology," at 3.

<sup>4</sup> This does *not*, however, preclude the ILEC from *attempting* recovery of those costs through means other than UNE prices. In fact, the FCC recognizes that ILECs should have alternative avenues for recovering embedded costs. See *NPRM*, at ¶40.

view of an efficient carrier's operations. Unfortunately, the comments of the opposing parties leave little doubt that, in their view, the standard of forward-looking cost embodies these two conditions as well.

9. The opposing parties make a great show of conceding that the existing TELRIC methodology does not literally assume that the ILEC would replace its network instantaneously. For example, AT&T's economist Robert Willig states:

To be sure, incumbents will not in reality rip out all old technology in its network and replace it with new technology whenever it becomes available.<sup>5</sup>

Similarly, MCI's economist Michael Pelcovits asserts:

Economists advocating on behalf of the ILECs have gone to great lengths to create a straw man, sophomorically labeled TSLRIC-BS, claiming that TELRIC assumes instantaneous and complete adoption of new technology. TELRIC assumes no such thing.<sup>6</sup>

10. These statements must, however, be contrasted with the assertion by both that TELRIC requires a re-valuation of the ILEC's network at prices associated with the most efficient technology. Thus, for example, Dr. Willig contends:

The relevant question is how the economic *value* of the technology in the incumbent's network is affected by the availability of new, more efficient technology. And the answer to that question is straightforward: The economic value of the old technology is limited, or "capped," by the forward-looking economic value of the new technology.<sup>7</sup>

Echoing this opinion, Dr. Pelcovits asserts:

The [FCC's] tentative conclusion that it is "more appropriate" to base forward-looking costs and UNE prices on less-than-complete adoption of the most efficient technologies is unwarranted. The Commission appears to be confused over whether the purpose of TELRIC is to predict (1) the pace at which individual firms actually adopt a new technology, or (2) the timing of when market prices are constrained by the availability

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<sup>5</sup> Willig Declaration, at ¶76.

<sup>6</sup> Pelcovits Declaration, at 14.

<sup>7</sup> Willig Declaration, at ¶76.

(even if not the complete adoption) of new technology. The purpose of TELRIC is the latter, not the former. In a competitive market, new technologies constrain prices long before they are ubiquitously adopted. The appropriate standard for the pricing of UNEs should reflect this fact.<sup>8</sup>

11. We do not disagree with the *economic* argument that the economic value of existing facilities in the ILEC's forward-looking network should be constrained by the prices of new/replacement facilities. However, that does not help to address the FCC's question about whether there is any justification for assuming that an incumbent carrier would always deploy new technology ubiquitously and instantaneously in its network.<sup>9</sup> Besides, it is one thing to argue that equipment of an older vintage should not be valued any higher than the price paid for a newer, essentially substitutable, vintage of that equipment.<sup>10</sup> It is another matter entirely to attempt such re-valuation when the "replacement" technology has no antecedent in the carrier's currently installed network<sup>11</sup> or entails the wholesale replacement of perfectly productive facilities currently in operation.<sup>12</sup> Thus, at a *practical* level, the only way the opposing parties' prescription for re-valuation can make sense is to assume that the forward-looking network would comprise all new facilities (that, presumably, a new entrant carrier would be at liberty to install). In effect, only this approach gives the opposing parties the latitude to reaffirm the existing TELRIC methodology and, in the process, pull the FCC back from steering a middle course between "the hypothetical assumptions

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<sup>8</sup> *Pelcovits Declaration*, at 13-14.

<sup>9</sup> *NPRM*, at ¶54 and ¶68.

<sup>10</sup> The somewhat hackneyed example of computers of successive generations falls into this category. See *Willig Declaration*, at ¶77.

<sup>11</sup> A new technology that has no precursor in the installed network cannot be of any help for revaluing any existing facility. At the same time, an existing facility for which no successor is likely to be available in the foreseeable future can only be revalued if well-functioning markets exist for second-hand facilities. That is not always assured for telecommunications equipment.

<sup>12</sup> As discussed later, an example of this situation would be the difference between (1) a carrier that overlays a suitably-configured broadband network on its existing, forward-looking narrowband network in order to be able to cater to demand for certain broadband services and (2) a carrier that installs a broadband network to start operations and serves the demand for both voice and data services out of that single network. For an incumbent carrier, doing the latter would require it to "rip out" and discard its existing network, no matter how efficiently it has always operated.

required under [the FCC's] current rules and the replacement cost approach ...."<sup>13</sup>

Contrast this with the FCC' opinion that

it is unlikely that any carrier, no matter how competitive the marketplace, would deploy new technology instantaneously and ubiquitously throughout its network. Even if the objective is to replicate the results of a competitive market, an approach that reconstructs the network over time seems to be more appropriate than one that assumes the instantaneous deployment of 100 percent new technology.<sup>14</sup>

12. Contrary to claims by AT&T, we do not believe that reforming the TELRIC approach (to incorporate a valuation method that reflects the FCC's recognition that networks are deployed over time) amounts to a short-run cost methodology. Consider, for instance, the following assertion by AT&T.

Also flawed is the incumbents' "actual forward-looking" pricing standard. ... This standard should not be confused with a pricing standard based on short run incremental cost. It is textbook economics that short run incremental cost is the efficient level of forward-looking expenditure for production during the time period over which efficient decisions are influenced by the extant assets from the firm's previously expended sunk costs. Invoking the logic of the short run, the incumbents argue that the costs of piecemeal upgrades of existing network capacity should be efficient because existing capacity is sunk; hence, installing a piecemeal upgrade is cheaper than deploying new capacity sufficient to serve all existing demand. But the short-run time horizon has a second, equally important, implication that the incumbents' arguments ignore: inasmuch as most of their investments are sunk, the short- or intermediate-run incremental costs of incumbents providing UNEs are likely quite low, since these forward-looking costs do not include the sunk costs. The opportunity cost of continuing to use sunk investment is zero, since the sunk costs of these assets are irreversible and would not be diminished or enlarged depending on whether the assets are utilized over their remaining lives. The incumbents, however, ask the Commission to allow them to price on the basis of the sum of both the full reproduction cost of the sunk facilities and the higher unit costs of the upgrade. No efficient firm would ever incur this combination of costs "in the real world" – in either the long run or the short run. It would be less costly for a firm to jettison its sunk assets and to start afresh than to

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<sup>13</sup> *NPRM*, at ¶54.

<sup>14</sup> *NPRM*, at ¶68.

pay the sum of both the full replacement cost of the sunk facilities and the higher unit costs of the upgrade.<sup>15</sup>

13. There are several leaps of faith in this assertion. First, BellSouth (or, to the best of our knowledge, any ILEC) has not claimed—nor have we supported any such claim—that the existing TELRIC methodology should be replaced by a short run cost methodology. Second, Dr. Willig makes the incorrect assumption that all existing facilities in an ILEC’s installed capacity represent *sunk* costs, i.e., have zero opportunity cost, and should, therefore, be excluded from any TELRIC calculation. Third, to the best of our knowledge, no ILEC has taken the position ascribed to them by Dr. Willig, namely, that the ILEC’s forward-looking network should be valued as the sum of the full reproduction cost of sunk facilities and the higher average costs of “piecemeal” upgrades or additions made to the existing capacity.
14. The argument that continual adjustments and upgrades to the ILEC’s network, conditional on existing technology and facilities, imply that short run costs are at issue is one that merits more serious examination than is forthcoming from the opposing parties. Those parties agree that incumbent carriers do not have the opportunity to completely replace their networks with all new technology or facilities, yet they prescribe a re-valuation methodology that logically implies such a replacement. The real question is: can a cost study that assumes that a carrier upgrades its network continually based on current demand and currently available technology be forward-looking and long run, even if it means that the carrier sometimes chooses to retain parts of its existing network for future operations? The answer is unequivocally “yes,” and that efficient firms in the real world operate precisely in that manner.<sup>16</sup>
15. Currently available technology *choices* are important in the matter because the incumbent firm (or an entrant that commences with building its network) has an

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<sup>15</sup> *Willig Declaration*, at ¶15. Emphasis in original.

<sup>16</sup> Thus, at any point in time in a dynamically efficient firm’s network, we can observe switches with add-on capacity and cable routes served by multiple cables, even though original switch capacity is cheaper than add-on and one large cable sheath is cheaper per pair than two smaller cables that provide that provide the same capacity.

opportunity to determine whether or not exercising any or all of those choices could be beneficial to it—in both financial and operational terms—in *the long run*. The immediate *planning* horizon of such a firm may be finite because, in the absence of perfect foresight, all planning must proceed with what is, or can reasonably be, known about future choices and contingencies. However, the *business* horizon, i.e., how long it wishes to operate as a business, may be considerably longer, even though its *business prospects* may not be predictable within reason beyond its planning horizon. Despite this, a profit-maximizing firm's long-term business goal cannot be anything less than operating as efficiently as possible because, only by doing so, can it have a reasonable assurance of survival in a competitive world. Therefore, every choice it exercises during its finite planning period must be consistent with its longer-term business goal of pursuing profits and survival through efficiency, innovation, and evolution. That is, the actions that opposing parties characterize as short run adjustments or “piecemeal upgrades” are actually all part of the firm's long run strategy of operating and competing efficiently. To view it any other way would be to deny one of the fundamental precepts of business.

16. Faced with demand and technological uncertainties, *all* carriers should be expected to deploy and upgrade their networks gradually. Moreover, they should *not* be expected to automatically discard their existing facilities when new technologies or practices become available. In some cases, the forward-looking network could well comprise a blend of existing and new facilities when such a combination (adjusted for the costs of transition and network upgrades) represents a more economical way to serve anticipated demand than by a flash-cut to all-new facilities. Thus, the FCC's tentative conclusion to reform the TELRIC methodology to more closely reflect an ILEC's actual forward-looking costs is more consistent with the economic principles of efficient competition in network industries than the all-or-nothing vision of the instantly-replaceable network advanced by the opposing parties.
17. In this environment of continual network evolution, any carrier must constantly monitor what that evolution does to its bottom line. In some instances, the blanket

change to new technology (which replaces completely the technology in place) may make sense, even though the technology would still have to be phased in over time. In other instances, such a change may be cost-prohibitive, particularly if significant and enduring costs have to be incurred to make a seamless transition possible between current and future operations.<sup>17</sup> And, in still other cases, complete replacement of the network would be unlikely because carriers expect even newer and lower-cost technologies to appear on the horizon. As the *NPRM* recognizes repeatedly, the real-world choices and dilemmas that incumbent carriers confront are severely at odds with the ideal of a forward-looking network that can replace its facilities instantaneously. The concession by the opposing parties that real-world networks cannot be expected to replace themselves in that manner is of little consequence if the call for instantaneous re-valuation of networks amounts to the same thing as a call for instantaneous replacement. Rather, instead of deriding the continual evolution of ILEC networks in accordance with their long-term business goals as “piecemeal upgrades,” the opposing parties and the FCC should acknowledge that forward-looking costs can indeed be developed without losing sight of the actual circumstances in which those networks operate. Simply wishing incumbent carriers to make the *same* technology choices as new entrants starting from scratch will not change the fundamental fact that there is no monolithic or single-dimensional yardstick for “efficient operations” for *all* carriers—incumbent and entrant—to follow. We return to this issue of efficiency later in the Reply Declaration.

18. The opposing parties’ argument that the proposed reform to the TELRIC methodology would give rise to short run costs is driven in part by the FCC’s proposal to regard a 3-5 year planning horizon as sufficient for developing long run costs.<sup>18</sup> The opposing parties declare that upgrades over that length of time cannot be anything more than

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<sup>17</sup> While past sunk costs may not be a factor in how an ILEC prices its UNEs, they would surely be an important consideration in whether the transition to completely new facilities can be financially worthwhile in the long run. Just as sunk costs raise barriers to exit, they may also complicate the transition to new ways of doing business.

<sup>18</sup> *NPRM*, at ¶54.

adjustments conducted over a “short-run time horizon,”<sup>19</sup> primarily because the economic lives of most network assets exceed 3-5 years.<sup>20</sup> These blanket assertions are misplaced. The short run cannot be identified with a specific period of time (such as 3-5 years). It also cannot be linked to the useful economic life of any given network asset. Rather, the short run is the length of time during which the scale of operations remains fixed (equivalently, facilities that determine the scale of operations remain fixed).

19. Although BellSouth has not proposed the “3-5 years period” as the long-run *per se*, if that length of time is sufficient for the ILEC to be able to adjust both its scale of production and the mix of technologies in the network, then it should be acceptable for developing forward-looking costs. In our opinion, the purpose of a 3-5 year planning period is to understand and cost out the technology and facilities that the incumbents expect to deploy over that period and then to use the design parameters and cost data *as the basis for* estimating the forward-looking costs of the entire network. The idea is not to argue literally that 3-5 years are enough time for all costs to vary,<sup>21</sup> but to recognize that engineers could reasonably be expected to foresee network evolution using existing and anticipated technologies only for that length of time.
20. To summarize, the opposing parties’ objections to the proposed TELRIC reform cannot be viewed as anything other than an effort to maintain the status quo. Unfortunately, that status quo would lock in the myth of the hypothetical, most-efficient carrier capable of instantaneous replacement of its network. This would result in ILECs continuing to be forced to set UNE prices based on unattainably and artificially low levels of cost. Even Dr. Willig concedes that such a situation would constitute a

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<sup>19</sup> Willig Declaration, at ¶48. Also see ¶62 and ¶¶106-107.

<sup>20</sup> Willig Declaration, at ¶62. Declaration of Richard B. Lee on behalf of AT&T Corporation (“*Lee Declaration*”), at ¶¶11-12.

<sup>21</sup> This appears to be Dr. Pelcovits’ main concern: “It is also not a cohesive forward-looking study, because it excludes the costs of any network component that does not have to be replaced in the next five years.” *Pelcovits Declaration*, at 27.

subsidy to CLECs that seek UNEs from ILECs.<sup>22</sup> The three main points to note in this regard are:

1. The contention that a series of short run adjustments to the network does not add up to an efficient long run network configuration is certainly false and, moreover, resurrects the notion of instantaneous network re-design (despite AT&T's assertions to the contrary). In the real world, in the face of uncertain demand and technological advances, no firm can set in place a long run, most-efficient configuration that would never need to be changed or upgraded. It is probable that the forward-looking network, even in the long run, would be a blend of efficiently functioning existing and new facilities.
  2. Data for a 3-5 year planning period *can* be used to develop long run costs. That exercise needs to account more realistically for scale and scope economies than merely assuming that some high, blanket level of those economies is available instantaneously to the so-called "efficient ILEC." The 3-5 year period is consistent with the FCC's own view: "This benchmark of forward-looking cost and existing network design most closely represents the incremental costs that incumbents actually expect to incur in making network elements available to new entrants."<sup>23</sup>
  3. Even under the existing TELRIC methodology, long run costs are developed with reference to the most-efficient technology *currently* available. That is, even such TELRIC estimates are likely, in some sense, to resemble short run costs because it is impossible to be certain that the most up-to-date technology that is currently available will remain true to that characterization over the period of time typically associated with the "long run." It is impossible to foresee perfectly what the least-cost or most-efficient technology will be in *every* long run. It is for this reason that real firms with complex networks expand and deploy their networks incrementally.
21. Finally, Dr. Willig contends that the ILECs use terms like "actual costs" and "real-world costs" to characterize not only embedded, reproduction, or short-run incremental costs but also cost models that reflect actual topography, customer locations and network routes more precisely than did the first generation of cost models.<sup>24</sup> We disagree that BellSouth has any of the first three cost concepts in mind. Rather, to the best of our knowledge, BellSouth and the other ILECs only advocate the last

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<sup>22</sup> Willig Declaration, at ¶33.

<sup>23</sup> FCC, *In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996* (CC Docket No. 96-98) and *Interconnection Between Local Exchange Carriers and Commercial Mobile Radio Service Providers* (CC Docket No. 95-185), First Report and Order ("Local Competition Order"), released August 8, 1996, at ¶685.

<sup>24</sup> Willig Declaration, at ¶13.

interpretation, namely, longrun, forward-looking models that better incorporate actual network data. Because the ILECs' suggestions for implementing the proposed reform are not tantamount in any way to the other three cost concepts to which Dr. Willig and other opposing parties take exception, the criticisms of the opposing parties to the proposed reform are largely irrelevant.

## **B. Proposed TELRIC Reform is Valid Even in Contestable Local Exchange Market**

22. Both AT&T and MCI contend strenuously that the existing TELRIC concept was designed specifically for the circumstances of a contestable (even perfectly contestable) local exchange market.<sup>25</sup> As is widely known, a contestable market is one in which the

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<sup>25</sup> Thus, Dr. Willig states:

For markets characterized by large sunk fixed costs and enormous scale and scope economies, the framework for setting prices that allows the incumbent to recover fully the efficient, economic costs of the services it provides but also eliminates supracompetitive prices, is contestable markets. Here, this framework assumes a single incumbent firm that serves the entirety of demand but that faces the potential of instantaneous and frictionless entry by a potential competitor employing the most efficient technology. ... In such a contestable market, the incumbent would not be able to charge rates in excess of LRIC for any service or it would risk displacement by a potential entrant. ... But at the same time, the incumbent would be able to set prices at LRIC without attracting entry and thereby recover its efficiently incurred costs. (*Willig Declaration*, at ¶25)

Similarly, AT&T's other economists remark:

The theoretical market whose performance the TELRIC standard seeks to replicate is not a market of atomistic competition, or even multiple facilities-based competitors, but a *contestable* market ... (Declaration of Lee L. Selwyn on behalf of AT&T Corporation ("*Selwyn Declaration*"), at ¶30)

The relevant economic paradigm that underlies the TELRIC standard is not perfect (or near-perfect) competition, with multiple facilities-based competitors, but perfect contestability, a more general and robust model of competition. (Declaration of Terry L. Murray on behalf of AT&T Corporation ("*Murray Declaration*") in this proceeding, at ¶52)

Finally, Dr. Pelcovits contends:

This benchmark of a contestable market, or, alternatively, a competitive market in long-run equilibrium, is something that the Commission had in mind when it established the TELRIC principles and it remains as valid today as it was then. (*Pelcovits Declaration*, at 15)

salutary effects of competition (principally the absence of supra-competitive prices) can be realized *without* the presence of multiple facilities-based competitors. Those effects can be realized by lowering sunk costs to such an extent (in the limit, to zero) that barriers to entry and exit, for all practical purposes, disappear and even a lone incumbent firm's ability to set prices at supra-competitive levels is checked by the credible threat of hit-and-run entry by opportunistic competitors (no matter how small). In these circumstances, even a market in which the incumbent commands a dominant share of output or revenue and enjoys substantial economies of scale and scope can be *effectively* competitive and protect consumers from supra-competitive prices.<sup>26</sup>

23. The opposing parties are correct to note that a contestable market can be effectively competitive without the presence of multiple facilities-based competitors. We also agree that resale and UNE-based competition—facilitated by the Telecommunications Act of 1996 (“1996 Act”) as alternatives to facilities-based competition—has, in effect, rendered the local exchange market contestable. However, we question the injection by the opposing parties of an artificial and largely irrelevant “contestability vs. competition” debate into the issue of reforming TELRIC to reflect the real-world attributes of the ILEC's network.
24. First, whether the local exchange market is contestable or more conventionally competitive has no bearing on the incorporation of actual network topography, customer locations, and network routes in the TELRIC calculation. No matter what

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<sup>26</sup> In this context, the following assertion by Dr. Willig is puzzling:

For markets characterized by large *sunk* fixed costs and enormous scale and scope economies, the framework for setting prices that allows the incumbent to recover fully the efficient, economic costs of the services it provides but also eliminates supracompetitive prices, is contestable markets. Here, this framework assumes a single incumbent firm that serves the entirety of demand but that faces the potential of instantaneous and frictionless entry by a potential competitor employing the most efficient technology. (*Willig Declaration*, at ¶25; emphasis added)

If entry is predicated on incurring similar *sunk* fixed costs, then a contestable market may *never* emerge. By definition, in a contestable market, entrants must face little or no sunk costs. Perhaps Dr. Willig only means to refer to “large fixed costs,” a condition that could suffice to generate economies of scale. But, see also *Willig Declaration*, at ¶35. He appears to have it both ways: bemoaning the plight of potential entrants that face the prospect of incurring sunk costs at entry, and declaring that the local exchange market is contestable. In light of resale and UNE-based competition, we agree with the latter characterization of the market, but not the former.

shape the market structure took, the determination of TELRIC for UNEs should occur under the aegis of the actual, forward-looking network rather than that of a hypothetical carrier's unattainably most-efficient network.

25. Second, contestability does not necessarily mean that there is no *actual* competition, even if limited. It only means that the threat of *sufficient* potential competition exists to discipline the ILEC's prices for the service or services at issue. In some circumstances, even relatively small, price-taking competitors that seek to expand their supply whenever the incumbent raises its price can have a restraining effect on the incumbent's pricing ability.<sup>27</sup> Competition from resale-based and UNE-based CLECs as well as intermodal competitors must be taken into account, i.e., competition in the *retail* services market does not require the presence of multiple *facilities-based* CLECs. In any event, the effect of such actual competition would be to shrink the ILEC's demand and to diminish correspondingly the economies of scale and scope that it would experience as a monopoly provider.<sup>28</sup> Therefore, the point at issue in the *NPRM* is *not* whether competition from multiple facilities-based CLECs is necessary in a contestable market.<sup>29</sup> Rather, it is whether the presence of multiple facilities-based competitors (that reduce the demand served by the ILEC) requires a rethinking on exactly how much cost savings from scale and scope economies would accrue to the ILEC when determining TELRIC.
26. Third, the competitive reality in local exchange markets must not be over-simplified or ignored. Unlike unregulated CLECs, ILECs face two pervasive constraints: (1) the burden of the COLR obligation and (2) limits on their ability to properly de-average their retail service prices across customer segments or locations in order to reflect variations in network costs and/or market conditions. These factors can offset the benefits of scale and scope economies.

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<sup>27</sup> Economists commonly entertain the "dominant firm, competitive fringe" form of oligopoly for precisely these circumstances. See W. Kip Viscusi, John M. Vernon, and Joseph E. Harrington, Jr., *Economics of Antitrust and Regulation*, 2nd edition, Cambridge, MA: The MIT Press, 1996, at 164-166.

<sup>28</sup> Dr. Willig appears to agree that it is only the ILEC-served demand that matters. *Willig Declaration*, fn. 6.

27. Finally, it is unclear from the opposing parties' arguments how exactly contestability in the local exchange market, i.e., for *retail* services, should translate into an appropriate model of competition for the supply of *wholesale* services like UNEs. The network that an ILEC uses to supply UNEs is the same network that has been designed and sized to also provide retail services. The ILEC does *not* build a separate or discrete network simply to supply UNEs. Therefore, the presence of retail competition and the increasing uncertainty of future retail demand almost guarantee that the ILEC would be unable to capture the full extent of the scale and scope economies that would otherwise be available to it if it were the sole service provider.<sup>30</sup> The FCC's expressed concern in this regard would thus remain valid.

28. The underlying irony in the whole discussion about contestability vs. competition is that the subsidization of CLECs through the provision of UNEs at non-compensatory prices that fail to reflect the ILEC's actual forward-looking costs can itself prevent or, at best, retard the development of facilities-based competition. Indeed, Dr. Willig recognizes this possibility.<sup>31</sup>

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<sup>29</sup> *NPRM*, at ¶¶50-51.

<sup>30</sup> This would be true regardless of whether the retail local exchange market is contestable without the presence of facilities-based competitors or more conventionally competitive with actual—albeit small—facilities-based competitors.

<sup>31</sup> *Willig Declaration*, at ¶33. Dr. Selwyn claims that the 1996 Act neither states a preference for nor establishes the goal of facilities-based competition as the ultimate destination for telecommunications markets. *Selwyn Declaration*, at ¶4. Dr. Selwyn clearly ignores the widespread consensus that facilities-based competition is highly desirable and the best means to deliver to consumers the greatest choice of services and service providers. Consider, e.g., that, recognizing facilities-based competition as an important landmark, Section 271(c)(1)(A) of the 1996 Act made the presence of facilities-based competitors one precondition for granting Bell Operating Companies the authority to offer interLATA long distance services within their service regions. The FCC itself saw the importance of devising resale, interconnection, and unbundling rules that “pave the way for the introduction of facilities-based competition with incumbent LECs.” *Local Competition Order*, ¶172. This importance was further reflected in the FCC's discussion of three possible approaches to setting prices for interconnection and UNEs. *Local Competition Order*, at ¶¶683-685. Referring to the third approach that would determine the ILEC's forward-looking costs with reference to the most-efficient technology deployed at the ILEC's existing wire center locations, the FCC stated: “Moreover, this approach encourages facilities-based competition to the extent that new entrants, by designing more efficient network configurations, are able to provide the service at a lower cost than the incumbent LEC.” *Local Competition Order*, at ¶685. Many of the CLECs (AT&T included), in fact, expressed a desire to use unrestricted access to UNEs as a stepping stone to building their own facilities. *Local Competition Order*, at ¶325. Facilities-based competitors themselves urged the FCC to “focus [its] efforts on encouraging facilities-based competition.” *Local Competition Order*, at ¶882. AT&T's Dr. Willig was among those who called for “a forward-looking incremental cost methodology [that]

### **C. Network Design and "Real World Attributes" in the *NPRM***

29. A central focus of the *NPRM* is to base UNE prices on more realistic (yet efficient and forward-looking) assumptions about network attributes. As we discussed at length in our initial Declaration, greater use of "real-world attributes" would markedly improve the TELRIC calculation and the UNE pricing process. Although they recognize that using more realistic data, e.g., on topography and customer locations, would improve the accuracy of TELRIC studies, the opposing parties claim that using other types of realistic data, e.g., data on real outside plant routes or network design, could transform TELRIC into a short-run or embedded cost methodology. We believe that these concerns should not deter the FCC from requiring the use of more realistic data. Using more realistic data on forward-looking network characteristics would not produce embedded costs or short run costs or otherwise diminish the accuracy of TELRIC-based prices. To the contrary, use of more realistic data would promote economic efficiency by matching UNE prices more closely to the ILECs' forward-looking costs.

#### **1. The opposing parties recognize that more realistic data would be useful**

30. The opposing parties grant that it is worthwhile to reflect more accurately in TELRIC the real-world attributes of ILEC networks. For example, ALTS believes that "reducing the reliance upon truly 'hypothetical' assumptions would substantially

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creates the right investment incentives for competitive facilities-based entry and creates incentives for the market to move towards competition while preserving opportunities for competition even if some network elements prove to be resistant to competition." *Local Competition Order*, at ¶635 and fn. 1534. Finally, the U.S. Circuit Court of Appeals, D.C. Circuit, clearly sensed Congress' intent when it opined:

If competition performed with ubiquitously provided ILEC facilities counts, the more unbundling there is, the more competition. The Commission, here in unison with the ILEC petitioners, evidently assumes that the Commission-imposed prices are highly attractive to CLECs; on that assumption, universal rules encompassing as many elements as possible would indeed generate a rapid spread of "competition." But the Commission never makes the argument in quite so stark a form, unwilling to embrace the idea that such completely synthetic competition would fulfill Congress's purposes.

*United States Telecom Association v. FCC*. 290 F.3d 415 (D.C. Cir. 2002).

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increase the accuracy of the TELRIC cost calculations.”<sup>32</sup> Nevertheless, the opposing parties raise a number of concerns with using real-world attributes.

## **2. Use of real-world data will not reduce study accuracy**

31. The opposing parties claim that use of more realistic data will reduce the accuracy of the study. For example, MCI wrongly claims that

This emphasis on “real-world” network attributes presumes that cost studies based on existing networks will encourage greater accuracy in pricing and reduce arbitrary variance among TELRIC cost results conducted under the existing TELRIC rules. But the proposed alternative to the existing methodology — studies that are derived from “real” as opposed to modeled data — is generally neither practicable nor less reliant on sampling and modeling methodologies than the current rules.<sup>33</sup>

This criticism misses the point. The idea of relying on more realistic data is not to literally capture all of the detail of an ILEC’s planned forward-looking (or embedded) network. The idea is, instead, to model the *right* forward-looking network. Instead of asking “what is the ILEC’s own forward-looking cost?” MCI raises the largely irrelevant question “what does it cost a hypothetical firm to provide UNEs?” Appropriately developed data on actual network routing are preferable to hypothetical data on an imaginary network. For example, properly developed data on actual loop characteristics are preferable to the false precision of a hypothetical loop design model based on a hypothetically-placed network. The actual data can be introduced through statistical samples, geocoding actual customer and network equipment locations, or some other basis. The point is that an ILEC’s network characteristics can be used to determine forward-looking costs that have real relevance to the setting of efficient UNE prices.

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<sup>32</sup> Comments of the Association for Local Telecommunications Services (“*ALTS Comments*”), at 7. Also, see *Pelcovits Declaration*, at 35-40.

<sup>33</sup> *Pelcovits Declaration*, at 17.

**3. Models should (and can) be developed using ILEC data**

32. Similarly incorrect is Dr. Pelcovits' claim that "precise data about actual network investments are not recorded in any fashion that would allow their incorporation into UNE prices." According to him, sufficient data on the real network do not exist (and/or sampling methods do not present an accurate picture of existing network facilities). Therefore, any cost study based on "real-world" data would be just as hypothetical and would "introduce much more subjectivity into the costing process."<sup>34</sup> As described in BellSouth's initial Comments, the goal of using additional real data in the study does not require or even contemplate literally costing out the embedded network.
33. We do not attempt here to address the details of Dr. Pelcovits' claims about specific ILEC efforts to rely on actual data in the past. Rather, we believe that the conceptual problems raised by Mr. Pelcovits can be overcome; and that doing so is necessary to answer the right question, namely, what is the ILEC's own forward-looking cost? Once the right question is posed, it is clear that the data sources and methods needed are different than those on which hypothetical TELRIC studies have been based. It is also clear that cost studies can be developed from real-world records and planning methods of the ILECs.
34. For example, none of the opposing parties has argued against using existing wire center locations in current TELRIC studies. Nor has any opposing party argued in favor of re-positioning each wire center within its boundary to "optimally" place the switching centers. Obviously, using real wire center locations produces more accurate estimates of costs the ILEC incurs than would the use of optimally-placed wire centers. Similarly, an ILEC's forward-looking cable routes follow existing cable routes. Forward-looking network junction points, such as remote terminals, feeder-distribution interfaces, etc. would typically be placed along those existing cable routes at current locations. Cost studies that reflect these more realistic network characteristics and

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<sup>34</sup> *Pelcovits Declaration*, at 21.

locations produce more accurate long run forward-looking costs than studies that depend only upon hypothetical data. As noted, BellSouth has been successful in reflecting several “real-world” attributes in its model: geocoding customer locations and identifying the actual services being provided to those locations.

**4. Appropriately developed data on network routing would be preferable to hypothetical data for an imaginary network**

35. We leave it to SBC and Verizon to address the specifics of Mr. Pelcovits’ criticisms of samples on which they have based their loop characteristics in past TELRIC studies. We are confident, however, that real-world network routing developed from BellSouth data can prove invaluable in any application of the proposed reformed TELRIC methodology, notwithstanding Dr. Pelcovits’ claim that no useful data of that nature exist. There are at least two alternate approaches making use of real data that are preferable to the false precision of a hypothetical loop design model based solely on hypothetical, least-cost assumptions. One would be to use a properly designed sample of loop characteristics, e.g., one selected using appropriate sampling techniques to reflect likely future network design and system characteristics. The other approach, proposed by BellSouth, would make use of geocoded customer locations as well as geocoded network points such as feeder-distribution interfaces, digital loop carrier remote terminal sites, and other actual data that would allow the cost model to more accurately build the forward-looking loop network along the real cable routes of the ILEC. While we cannot address the available data for all ILECs, we understand that these real-world data are available for BellSouth. Moreover, we believe that BellSouth would not simply stop with current loop characteristics and locations; it would apply planning guidelines to modify, as needed, existing configurations to reflect forward-looking configurations.

**5. The BSTLM would be improved by using more realistic data**

36. Dr. Pelcovits comments favorably on the BellSouth Telecommunications Loop Model (“BSTLM<sup>®</sup>”)<sup>35</sup> which relies on a minimum road spanning tree algorithm to lay out loop plant. He specifically notes that “[i]ts primary improvement over other models is the use of data on roads to determine the location for loop plant.”<sup>36</sup> This suggests that Dr. Pelcovits is not averse to using more real-world data to improve the types of least-cost models that he endorses. As explained above, BellSouth believes that its own model should reflect actual network characteristics and is exploring ways to allow its model to better reflect actual cable routes and distances instead of relying on hypothetical routes and designs. Although the BSTLM currently relies on the development of a hypothetical network design similar to other TELRIC proxy models of hypothetical least-cost loop networks, BellSouth believes that the inclusion of more data on actual routes and equipment locations would increase the precision of its cost estimates. As BellSouth explained in its initial Comments, incumbent carriers, unlike those that have no history, are very likely to use the existing cable routes and network junction points in the future as well, even though they would likely use different technologies, e.g., more fiber feeder in place of copper, along those routes. The fact that the BSTLM has been accepted by state commissions implies only that the model’s current version complies with the existing TELRIC methodology, not that it embodies all the real-world attributes.

**6. Reflecting real-world attributes in TELRIC would not amount to a short run cost methodology**

37. While recognizing that real-world data can improve the accuracy of TELRIC estimates—by more closely matching network routing assumptions, for example—ALTS claims nonetheless that relying on other real-world data runs the risk of generating embedded or short run costs instead of long run forward-looking costs.<sup>37</sup>

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<sup>35</sup> 1999 INDETEC International and BellSouth Corporation; 2001 CostQuest Associates, Inc. All rights reserved.

<sup>36</sup> *Pelcovits Declaration*, at 36-37.

<sup>37</sup> *ALTS Comments*, at 6-7.

We believe that the risk of that happening is minimal and clearly worth taking in order to produce a forward-looking economic cost study that accurately reflects the attainable real-world costs of an efficient carrier. The risk is minimal because carriers deploy their networks in the long run through continual adjustments, not by means of a flash cut to a hypothetical optimal network. Thus, using real-world data that are adjusted to reflect expected or planned changes in network design would not likely produce a marked deviation from the essentials of a forward-looking network. In contrast, cost studies that use hypothetical data or, to use Dr. Pelcovits' oxymoronic term, "modeled data," are likely to generate unrealistic cost estimates that disregard real-world network circumstances and reasonable business assumptions.

## **7. Examples show that using ILEC-specific data is appropriate**

### **a. Fill factors**

38. AT&T contends that an efficient carrier's fill factors would be higher than those actually reported by ILECs, and attributes actual fill factors to "inefficient operations" based on carrying excess "legacy capacity."<sup>38</sup> AT&T also claims that fill factors under the 3-5 year planning horizon<sup>39</sup> would likely be higher if ILECs are truly facing declines in demand. The fact is that BellSouth's fill factors have stayed fairly constant over several years.<sup>40</sup> With price regulation's efficiency incentives in effect, the relative constancy of the fill factors suggests that even the legacy fill factors (i.e., those in the early days of price regulation) were probably close to efficient levels; otherwise, they would almost surely have risen over the years of price regulation.

### **b. Structure sharing**

39. AT&T also contends that a proper forward-looking TELRIC study would account for substantial structure sharing opportunities that exist for carriers on a going forward

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<sup>38</sup> *Willig Declaration*, at ¶¶82-87.

<sup>39</sup> AT&T characterizes this as a "short-term planning horizon." *Willig Declaration*, at ¶86.

<sup>40</sup> See Exhibit 4 attached to BellSouth's initial Comments.

basis.<sup>41</sup> On the other hand, AT&T contends that structure sharing opportunities based on historical deployments would reduce incumbent carriers' incentives to maximize sharing opportunities in the future and that would result in higher UNE prices. The plain fact is that, under price regulation or even traditional rate of return regulation with a regulatory lag, incumbent carriers have had the incentive to share structure wherever and whenever it has been feasible.<sup>42</sup> However, sharing opportunities are frequently limited for reasons that Dr. Willig ignores. Sharing is constrained by the fact that all networks—whether ILEC, electric distribution, cable TV, or CLEC networks—are deployed incrementally over time and have different priorities and timing constraints. Some or all of those firms could consider deploying their infrastructure all at once in some circumstances, but those would be rare instances (such as when a new development or office park is built). Since structure sharing can allow, and has always allowed, firms to minimize their costs, we have every reason to believe that recent historical sharing percentages of ILECs have considerable predictive value for forward-looking cost studies.

40. Overstating structure sharing opportunities in a TELRIC study can have a very immediate and direct impact on TELRIC-based UNE prices because the cost of structures (poles, buried cable placement, and underground placement) is a large component of the cost of a loop network. Claims by the opposing parties that sharing will increase in the future as facilities-based competition increases is tantamount to them saying to the ILECs, “trust us, we will share in the costs of your structures.” Unfortunately, the higher the sharing percentages in a TELRIC study, the lower the UNE prices would be, and the opposing parties would be even less likely to place their own facilities. Paradoxically, higher sharing percentages would actually guarantee less opportunity for sharing structures with the opposing parties.

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<sup>41</sup> *Willig Declaration*, at ¶¶90-97.

<sup>42</sup> AT&T admits that, to reduce costs and comply with local ordinances, BellSouth, other ILECs, and utility companies already actively seek out opportunities to place structures jointly. Indeed, this is one reason why the utility coordinating committees cited by AT&T were established. (Declaration of Joseph P. Riolo on behalf of AT&T Corporation in this proceeding, at ¶79 and ¶95).

#### **D. The Elusive “Efficiency” Standard and the Impact of Price Regulation**

41. Dr. Willig and Dr. Pelcovits both admit that, in principle, basing a TELRIC study on actual ILEC service area characteristics would be beneficial.<sup>43</sup> We disagree with both, however, on the matter of whether data on an ILEC’s current and planned network characteristics can be used to model an efficient network. We believe that they can and that doing so would not amount to an embedded, reproduction, or short run cost approach. In contrast, the opposing parties cling to the “hypothetical most-efficient firm” standard that underlies the existing TELRIC methodology. For example, Dr. Willig declares:

In competitive and contestable markets, firms can charge rates only up to those based on outlays that would be entailed if the technology employed were the most efficient currently available.... an entrant can select the mix of assets that provides service in the most efficient manner going forward....<sup>44</sup>

42. As is apparent from the *NPRM*, the FCC clearly does not share this view of the issue. In our opinion as well, it makes little sense to apply the same, monolithic standard of efficiency to both an incumbent carrier that bears the burden of a legacy network shaped by important regulatory obligations and constraints and a new entrant that is unencumbered by that burden. Rather, efficiency of a carrier’s operations must be viewed from a more conditional perspective, by taking into account how successfully a carrier—subject to its history and current state of operations—is able to chart the path that allows it to minimize the cost of its future operations. An entrant with no past to temper its choices may well be in a position to opt for technologies and practices that are least-cost for it. Those same choices may not, however, represent the lowest-cost

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<sup>43</sup> According to Dr. Willig: “In any event, more detail in principle is better, all other things (including the transactions costs of collecting and modeling the data) being equal.” *Willig Declaration*, at ¶16. MCI’s economist is less sanguine: “Although the idea that rates will somehow be more ‘accurate’ if more real-world data are used may seem intuitively correct, the universe of available data is not sufficient to bear this intuition out.” *Pelcovits Declaration*, at 26.

<sup>44</sup> *Willig Declaration*, at ¶19.

option for an ILEC that has to continually evolve its network without the luxury of either abandoning it or rebuilding it from scratch.

43. In reality, it is also unlikely that the entrant would be able to build its network to match the scale and scope of the ILEC fast enough so that it would become possible for the value of that network to constrain the value of the ILEC's network. When entrants too have to build their networks incrementally, have to deal with spare capacity, and face the same regulatory burdens as the incumbent, it is doubtful that they would have the costs (or the efficiency level) of the hypothetical entrant that can be instantly sized to serve all available demand as efficiently as possible. Yet, imposing the latter type of new entrant's efficiency strawman on the incumbent would only doom the incumbent to a continuing regimen of failed expectations and forced supply of UNEs at non-compensatory prices. In light of this, the efficiency standard espoused by the opposing parties is not only inconsistent with the FCC's proposed TELRIC reform, it is also simply unattainable by any ILEC or entrant.
44. A typical refrain from the opposing parties is that ILECs today cannot be characterized as being efficient, even after the operation of price or incentive regulation plans at both the federal and the state level for a decade or more and, in some cases, multiple revisions and fine-tuning of those plans.<sup>45</sup> The notion of efficiency employed by each of these parties is, however, left undefined, although the parties freely make unsupported allegations about how price regulation plans certainly do not mitigate—and may, in fact, exacerbate—the incentive for ILECs to engage in anti-competitive behavior.<sup>46</sup> The opposing parties make no effort to provide any benchmarks of their own for the fictional “most-efficient” carrier, nor do they consider how the efficiency

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<sup>45</sup> *Willig Declaration*, at ¶53-57; *Selwyn Declaration*, at ¶12; *Pelcovits Declaration*, at 49-50.

<sup>46</sup> See, e.g., *Selwyn Declaration*, at ¶¶12-14. See, in particular, the statement: “If the price adjustment mechanism does not reasonably reflect actual and achievable productivity gains—which is the typical situation, especially in *state* price cap plans—ILECs can retain the financial benefits of most, if not all, of their efficiency gains, and are then able to divert the excessive profits derived therefrom to support tactics such as *predatory pricing and cross-subsidization*.” *Selwyn Declaration*, at ¶27; emphasis added. While the anticompetitive portion of this assertion is utterly false as a matter of fact and economic theory, the claim appears to concede that ILECs retain the benefits of efficiency gains under price regulation. This fact is the basis for our belief that ILEC network design and practices will be reasonably efficient.

standard would need to be modified when ILECs carry asymmetric burdens like the COLR obligation and limits on their ability to suitably deaverage retail service prices.

45. AT&T claims that because “incumbents have never been subject to the discipline of effective competition,” there can be no basis to presume that ILECs’ existing network design and practices are efficient in spite of many years of price regulation.<sup>47</sup> However, AT&T provides no empirical evidence to support this assertion. It is disingenuous to claim that there is no competition for the ILECs’ core local exchange business at a time when they are experiencing losses of both market share and access lines.<sup>48</sup> It is also absurd to imply (as Dr. Selwyn does) that ILECs do not face competition for long distance and other discretionary services which, in fact, have been reassigned in most states, to the “competitive” or “deregulated” category of price regulation plans precisely because of the demonstrably competitive conditions they face.
46. Furthermore, AT&T’s efforts to establish that price regulation or “price cap” plans actually facilitate opportunities to misallocate costs and cross-subsidize “competitive” with “monopoly” services (along the lines of the discredited rate-of-return regulation plans that preceded them) is nothing more than a red herring<sup>49</sup> and a distortion of the established record of telecommunications price regulation in the U.S. Some of the most egregious examples of such efforts are as follows.
47. First, Dr. Selwyn claims that no state has set an X (or productivity offset) factor of 6.5 percent, as allegedly set in the *CALLS Order*.<sup>50</sup> Hence, Dr Selwyn reasons, ILECs are

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<sup>47</sup> *Willig Declaration*, at ¶52.

<sup>48</sup> According to the FCC, CLECs nationally were serving about 14.7 percent of access lines by June 2003. FCC, *Local Telephone Competition as of June 30, 2003*, December 2003, Table 1. The same report (Tables 1 and 13) also shows that the ILECs lost about 21.7 million access lines from December 2000 through June 2003, while, at the same time, the CLECs gained about 12 million access lines and wireless mobile carriers gained 46.6 million subscribers. FCC data also show that broadband access lines grew by 16.4 million lines (including 10.1 million new cable-modem “lines”). FCC, *High Speed Services for Internet Access: Status as of June 30, 2003*, Table 1. This is clear evidence of strong intramodal and intermodal competition to ILECs’ access lines.

<sup>49</sup> See *Willig Declaration*, at ¶¶51-58, and *Selwyn Declaration*, at ¶¶12-26.

<sup>50</sup> FCC, *In the Matter of Access Charge Reform* (CC Docket No. 96-262), *Price Cap Performance Review for Local Exchange Carriers* (CC Docket No. 94-1), *Low-Volume Long-Distance Users* (CC Docket No. 99-249),

able to significantly boost their earnings from *intrastate* operations in states that do not impose the 6.5 percent X factor by being able to capture their excess gains in productivity. Contrary to Dr. Selwyn's argument, the *CALLS Order* did *not* adopt a *productivity factor* of 6.5 percent. Rather, it set 6.5 percent as an adjustment mechanism to reach a predetermined rate level:

By adopting the reasonable approach set forth in the *CALLS Proposal*, which treats the X-factor not as a productivity estimate but as a method to reduce rates to certain levels, we expect to end the debate over the appropriate size of the X-factor now and for the next five years for participating price cap LECs.<sup>51</sup>

Clearly, the FCC did not determine that the correct *X factor* was 6.5 percent. Moreover, the FCC's earlier decision to use the 6.5 percent factor for interstate price cap purposes had been found to be arbitrary and capricious.<sup>52</sup> Given this history, any suggestion that the *CALLS Order* supports an X factor of 6.5 percent is disingenuous at best. Ironically, regardless of the validity of the FCC's rationale for setting it, an X-factor that is so high would suggest that ILECs are *extremely* efficient (because they allegedly have a total factor productivity that exceeds that of the general economy by 6.5 percent). The fact that states have seen fit to set much lower X-factors would seem to imply that (1) the states do not reach the same conclusion about how much ILECs outperform the general economy, or (2) the states may believe that actual ILEC productivity is higher but are content to let ILECs retain a greater share of the gains from their higher productivity.

48. Second, given several recent years in a row of very low inflation, most price regulation plans with the price cap index for basic services would more likely have caused real

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*and Federal-State Joint Board on Universal Service* (CC Docket No. 96-45), Sixth Report and Order in CC Docket Nos. 96-262 and 94-1, Report and Order in CC Docket No. 99-249, and Eleventh Report and Order in CC Docket No. 96-45 ("*CALLS Order*"), released May 31, 2000.

<sup>51</sup> *CALLS Order*, at ¶40; emphasis added, footnote omitted.

<sup>52</sup> *United States Telephone Association v. FCC*, 188 F.3d 521 (D.C. Cir. 1999). The U.S. Circuit Court of Appeals, D.C. Circuit remanded the issue to the FCC for further review. The *CALLS* decision itself was recently reversed and remanded by the U.S. Circuit Court of Appeals, Fifth Circuit that also found that the 6.5 percent factor "lacked a rational basis." Thus, the 6.5 percent factor, which has been rejected twice in three years by two different appellate courts, should not be used as a productivity benchmark.

decreases in service prices (even with “low” X-factors). At the same time, the price *increases* that Dr. Selwyn claims have occurred for (more competitive or non-basic) services under the guise of pricing flexibility<sup>53</sup> could hardly paint a picture consistent with “increased incentives and opportunities for cross-subsidization” of those same services.

49. Third, in claiming that permissive state regulators have overly indulged price-regulated ILECs by (1) reinitializing their service prices, (2) holding periodic reviews of their price regulation plans, and (3) transferring supposedly “non-competitive services” like special access and yellow pages out of price caps, Dr. Selwyn concocts what amounts to a conspiracy theory regarding states’ supposed favorable treatment of ILECs.<sup>54</sup> His contentions in this regard are totally unsubstantiated.
50. Fourth, as an example of alleged cross-subsidy, Dr. Selwyn claims that ILECs are able to form bundles in which “highly profitable” vertical services cross-subsidize long distance services for which IXC compete.<sup>55</sup> Moreover, Dr. Selwyn alleges that because local service is a component of most such bundles, only IXCs that offer competing local services in bundles of their own can even match the ILECs. This sweeping allegation is backed up with no proof at all, either in terms of specific demonstrations of violations of imputation tests or evidence of the failure of price floors for service bundles.<sup>56</sup> Besides, he conveniently overlooks the fact that every ILEC bundle of regulated services is available for resale. Unencumbered by any obligation to offer actual evidence, Dr. Selwyn then ventures farther afield by alleging

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<sup>53</sup> *Selwyn Declaration*, at ¶21.

<sup>54</sup> *Selwyn Declaration*, at ¶¶21-22.

<sup>55</sup> *Selwyn Declaration*, at ¶22.

<sup>56</sup> For example, Dr. Selwyn claims without presenting support data: “These packages are undoubtedly quite profitable as a whole, *even though the incremental price for the long distance calling feature is, in many cases, less than the applicable access charges.*” *Selwyn Declaration*, at ¶22; emphasis added.

that excessive earnings made possible by ILECs' price cap plans have been diverted by the ILECs toward cross-subsidization and predatory pricing.<sup>57</sup>

51. Finally, none of these wild and unsupported allegations of excessive earnings, regulatory ignorance, and funding anticompetitive behavior contradict the point at issue: whether a decade of price regulation means that ILEC network characteristics can be taken to be reasonably efficient. Even unregulated monopolists—which far from characterize the ILECs—minimize their cost of supplying services.
52. To summarize, the opposing parties have failed to provide persuasive arguments about why ILECs should be considered presumptively inefficient (despite well over a decade of price and incentive regulation) and have, instead, offered numerous unsubstantiated allegations about ILEC incentives to behave anti-competitively under the aegis of such regulation. Moreover, they have not explained why the efficiency standard to which the ILEC should be held is that of the hypothetical entrant built instantly to match the ILEC's scale and scope but not burdened by any of the ILEC's demand and technological uncertainties or regulatory obligations, rather than of the entrant that too would build its network incrementally and deal with real-world constraints in a manner similar to the ILEC. This failure leaves intact the FCC's reasoning behind its tentative conclusion, namely, that TELRIC should reflect the costs of an efficient carrier that is subject to specific real-world attributes of its network.

## **E. Depreciation**

53. The opposing parties agree that economic depreciation should be used in TELRIC studies, but they defend the continued use of regulatory depreciation lives.<sup>58</sup>

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<sup>57</sup> *Selwyn Declaration*, at ¶27. We note in passing that Dr. Selwyn's disparagement of the ILEC intrastate price regulation plans and, in particular, his allegations of anti-competitive behavior by ILECs taking advantage of such plans, rest for the most part on the FCC's *Computer III Remand Order* that dates back to 1991. *Selwyn Declaration*, at ¶18. This was long before significant experience was gained with price regulation plans and state regulators learned to fine-tune those plans or tighten them up with riders about service quality or profit-sharing arrangements like infrastructure commitments.

<sup>58</sup> Comments of MCI ("*MCI Comments*"), at iv, and *Willig Declaration*, at ¶140.

Regulatory depreciation lives were set many years ago, e.g., about a decade ago for BellSouth. Thus, it is almost inconceivable that those lives would reflect the vastly increased competition or the prospects for technological substitution that confront ILECs today. The opposing parties also argue (incorrectly) that GAAP-based lives tend to understate economic lives. As we explain below, BellSouth's approach to implementing GAAP requirements is designed to fully reflect the factors that determine economic lives.

**1. Regulatory depreciation lives are not preferable to GAAP-based depreciation lives**

54. Opposing parties, notably AT&T and MCI, argue that (1) the regulatory depreciation lives or the range of lives last prescribed by the FCC should be used for TELRIC studies,<sup>59</sup> and (2) GAAP-based lives tend to understate economic lives that, in turn, likely contribute to an overstatement of UNE prices.<sup>60</sup> The *NPRM* confirms the FCC's findings in the *Local Competition Order* that the appropriate depreciation method should be based on economic depreciation. We agree, as do other economists.<sup>61</sup> Therefore, the issue is: Which of the two types of depreciation lives (regulatory or GAAP-based) best reflect economic depreciation lives?
55. As Dr. Willig explains, economic depreciation is driven by the factors that erode the value of investments and eventually lead to their ultimate replacement, namely, physical deterioration, technological change, and non-use related loss of value.<sup>62</sup> Thus, to ensure that prices reflect depreciation costs, they must be set based on depreciation lives that capture a realistic, forward-looking view of these three factors. The FCC prescribed current regulatory depreciation lives for BellSouth for four BellSouth states in 1995 and the other five in 1993. Given how rapidly technology and competition

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<sup>59</sup> *Lee Declaration*, at ¶¶29-35; Declaration of Michael J. Majoros, Jr. on behalf of MCI ("*Majoros Declaration*"), at 9-14.

<sup>60</sup> *Lee Declaration*, at ¶36; *Majoros Declaration*, at 23.

<sup>61</sup> See e.g., *Willig Declaration*, at ¶139.

<sup>62</sup> *Willig Declaration*, at ¶¶135-138.

have both evolved over the last decade, it is important that the most up-to-date data be evaluated to determine forward-looking depreciation rates and lives. It is equally important to recognize that regulatory lives prescribed a decade ago are out-of-date and cannot adequately reflect the recent accelerated trends in competition and technological change in the industry. Moreover, they were fashioned at a time when regulators set lives with little or no regard for the pressures of competition. Even the FCC's "safe harbor range" of depreciation lives was set too long ago to adequately capture current forward-looking trends in competition and technological change.<sup>63</sup> For example, the competitive and technological implications of cable telephony, Voice-over-Internet Protocol, and wireless substitution for wireline services<sup>64</sup> have come into much sharper focus in the last five years. Therefore, forward-looking economic lives must be based on more recent explicit analyses of these and other data that determine economic depreciation.

56. In contrast to the outdated regulatory lives described above, BellSouth's depreciation life studies, done for GAAP depreciation purposes, must be kept up-to-date,<sup>65</sup> and they reflect the factors that determine economic lives. That is, as explained in the depreciation study filed as Exhibit 5 to BellSouth's initial Comments in this proceeding, BellSouth's study process takes account of technological change and competition, as well as wear and tear, based on forward-looking analysis of trends in BellSouth's own service area. Moreover, BellSouth's Reply Comments refute the alleged flaws associated with economic lives developed under GAAP, e.g., the

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<sup>63</sup> The FCC's approach to establishing those safe harbor ranges for most asset groups was merely a statistical analysis of prior prescribed lives. These ranges were developed by taking one standard deviation around the mean of the lives that the FCC had prescribed most recently for various ILEC accounts. When ranges were first ordered, they were based on 1990-1992 represcriptions. Lives that were not forward-looking when first prescribed 11-13 years ago could hardly be considered forward-looking today. The adjustment in 1999 to the low end of the life range for digital switching equipment to 12 years was a move in the right direction, but the ranges still remain inadequate for the modern competitive environment.

<sup>64</sup> See fn. 48, *supra*, regarding the shifting pattern of network access from wireline voice services to CLECs, broadband and wireless mobile. The dramatic growth of cable broadband service and accompanying technological developments have made VoIP an increasingly powerful competitive force.

<sup>65</sup> Under applicable SEC regulations, corporations must review asset lives at least once a year. See 17 C.F.R. §§210.4-01(a)(1), 210.3-01, and 210.2-02(b).

erroneous allegation that GAAP-based lives tend to understate economic lives. Accordingly, we believe that lives developed in accordance with GAAP are far more appropriate than the regulatory lives recommended by the other parties.<sup>66</sup>

## 2. Other depreciation issues

57. Dr. Willig states that the corrections for depreciation under current TELRIC rules proposed by David M. Mandy and William W. Sharkey<sup>67</sup> are conceptually correct, i.e., they follow from their assumptions about levelization and depreciation lives relative to the interval between TELRIC proceedings. However, Dr. Willig believes that “their assumptions are at odds with how TELRIC is actually applied—regulatory asset lives used in UNE rate cases appear to be considerably shorter than the service lives actually projected for local network assets.”<sup>68</sup> Thus, he recommends against adopting their proposal.
58. There are two problems with Dr. Willig’s position on asset lives. First, his statement about regulatory asset lives rests on flawed analyses presented by AT&T declarant Richard Lee.<sup>69</sup> As noted above, the regulatory asset lives that AT&T supports are out-of-date and excessive, whereas GAAP-based lives better reflect current forward-looking views of economic lives. Moreover, as explained in BellSouth’s Reply Comments, Mr. Lee’s claims that the FCC lives take account of all the factors that contribute to economic depreciation and that “...the lives ... prescribed by the FCC have proven to be short enough to compensate for physical exhaustion, technological obsolescence and expected decreases in asset values” are based on *backward*-looking analysis of historical depreciation reserve data.

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<sup>66</sup> A more detailed explanation of the BellSouth approach can be found in Exhibit 5 of its initial Comments.

<sup>67</sup> David M. Mandy and William W. Sharkey, “Dynamic Pricing and Investment from Static Proxy Models,” OSP Working Paper Series No. 40, Office of Strategic Planning and Policy Analysis (FCC), September 2003.

<sup>68</sup> *Willig Declaration*, at ¶144.

<sup>69</sup> Dr. Willig states: “As Mr. Lee and Mr. Klick explain, currently used regulatory asset lives are generally much shorter than the asset lives actually projected.” *Willig Declaration*, at ¶141, citing the *Lee Declaration* and the Declaration of John C. Klick on behalf of various CLECs in this proceeding (“*Klick Declaration*”) on the issue.

59. Second, the assumptions recognized by Dr. Willig as underlying Mandy and Sharkey's analysis are *not* factored into regulatory asset lives. Thus, Dr. Willig's claim that the assumptions behind the adjustment proposed by Mandy and Sharkey are at odds with how TELRIC is actually applied is based on flawed logic. Specifically, regulatory depreciation lives were not set to account for the relationship between the intervals at which UNE prices are set and the length of asset lives. There is no basis to assume that regulatory asset lives, calculated from data primarily for the time period before UNEs were in wide use, would reflect the impact on plant value caused by the phenomenon identified by Mandy and Sharkey. Thus, regulatory lives *cannot* provide what Dr. Willig contends is "the same kind of additive or multiplier that Mandy and Sharkey advocate...."<sup>70</sup>
60. MCI claims that (1) economic depreciation is able to account for equipment price declines in TELRIC and (2) most forward-looking costs of network components that involve substantial labor costs, e.g., the loop, are likely higher than their embedded costs and those of other network components likely have stayed roughly the same.<sup>71</sup> Thus, MCI believes, the ability to recover historic costs using TELRIC is not really a problem, given that the overall network may not be declining in value. This appears to insinuate that TELRIC can be compared with embedded costs. However, this line of argument is at odds with prior claims by the opposing parties that network costs are declining and with claims elsewhere in MCI's filing that embedded network costs cannot be compared with forward-looking network costs.
61. Moreover, although there is reason to believe that installation costs for cable and poles will increase, that does not mean that depreciation lives should be adjusted upward or that depreciation rates should be reduced. As we explained in our initial Declaration, increasing competition is likely to drive down the value of outside plant by larger amounts than foreseen in the FCC-prescribed lives. Those lives were developed prior

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<sup>70</sup> *Willig Declaration*, ¶144.

<sup>71</sup> *MCI Comments*, at 9.

to 1999 and competition has increased substantially since then; thus, FCC-prescribed lives are likely too long.

62. AT&T claims that use of regulatory “equal life group” depreciation already provides the kind of front-loaded depreciation that Mandy and Sharkey suggest is appropriate.<sup>72</sup> Mr. Klick cites the essay by Richard Clarke,<sup>73</sup> which (at section 4) claims that the FCC need not replace current regulatory depreciation policy with front-loaded economic depreciation because, as long as interest rates are low and asset lives are correctly determined, costs can be recovered over the life of the plant. Dr. Clarke also argues that equal life group depreciation produces roughly the same time-profile of depreciation as economic depreciation. Thus, according to Dr. Clarke, regulatory equal life group depreciation is sufficient to mimic the kind of accelerated recovery that economic depreciation typically produces. That, however, is beside the point. Equal life group depreciation is not an accelerated depreciation method. Rather, it is a straight-line method adopted by regulators under Part 32 requirements. The equal life group procedure most closely matches the recovery of investment with consumption of the assets used to provide service.

## **F. Switching cost and rate structure**

### **1. Switch discounts should be based on the actual expected mix of new and growth lines**

63. AT&T and MCI argue that switch prices should be based on the forward-looking mix of new and growth lines that an ILEC would deploy to completely replace its network and continue to grow over the foreseeable future.<sup>74</sup> We agree that switch prices should reflect a forward-looking mix of discounts for new (replacement) and growth

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<sup>72</sup> *Klick Declaration*, at ¶106.

<sup>73</sup> See the compilation of essays titled “Pricing Based on Economic Cost: The Role and Mechanics of TELRIC” filed by AT&T in this proceeding.

<sup>74</sup> *Willig Declaration*, at ¶¶100-103; Declaration of Dr. August H. Ankum Regarding Switching Discounts and Non-Recurring Costs on behalf of MCI (“*Ankum Declaration*”) in this proceeding, at 4-8. .

equipment. However, we disagree with the opposing parties' approach to the implementation of this principle.

64. The opposing parties attempt to show that the cost of at least 92 percent of access lines should be based on new switch prices. This position obviously favors those parties because, in most cases, switch vendors have chosen to apply a larger discount to new or replacement switches than to growth or add-on switch capacity. The opposing parties hope to take advantage of a pricing structure that was effective during a period of rapid line growth by applying that same structure in the present-day environment of minimal growth. In the calculations presented by some opposing parties, the annual growth rates for future years are in the 1-2 percent range. When the new switch discounts were first made available by the vendors to ILECs and others in the late 1980s and 1990s, annual growth rates were in the 4-5 percent range. Vendors were competing aggressively to get as many of their digital ESS switches in the networks as quickly as possible so that they could enjoy continued sales on growth orders. The resultant mix of new and growth lines was much different then than that pictured by Dr. Ankum now.<sup>75</sup>
65. In the late 1980s and 1990s, not only was the environment different in terms of access line growth, the ILECs were also in the midst of brisk switch replacement programs that marked the change from mechanical and analog switches to digital stored program control technology. Recognizing the opportunity to establish or expand market share, the switch vendors exercised their ability to offer high discounts for large volumes of switch sales, despite new technology and associated development costs. For example, it is important to note that, by 1999, almost 97 percent of central offices and 92 percent of lines operated by Bell Companies like BellSouth had been converted to digital stored program control technology.<sup>76</sup>

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<sup>75</sup> *Ankum Declaration*, at 6.

<sup>76</sup> FCC, Industry Analysis Division, Common Carrier Bureau, *Trends in Telephone Service*, August 2001, Table 18.1 "Central Offices and Access Lines by Technology (Bell Operating Companies)," at 18-5.

66. As we understand it, BellSouth's forward-looking costs of switching equipment would arise primarily from upgrades and growth additions. Thus, to reflect the switching costs that BellSouth would actually incur, any cost study should assume the mix of upgrades, growth additions, and new switches that BellSouth expects to purchase on a forward-looking basis. In the past, BellSouth has actually taken a more conservative approach that costs out switches assuming that 100 percent of the getting-started investment receives the new switch discount, and applies a weighted average discount based on the percentage of new and growth lines to the other parts of the switch. This approach (which results in lower cost estimates) avoids the need to make assumptions about the life of a switch, the cost of capital, and a growth rate, all of which the opposing parties would have the FCC require for TELRIC studies. Furthermore, the resulting weighted average discounts produced by BellSouth's calculation would best capture the prices BellSouth expects to pay on a going-forward basis.
67. The opposing parties favor the scenario in which ILECs buy all-new switches to reconstruct their network instantaneously and then assume that only a small portion of the forward-looking costs would stem from growth and upgrades. We disagree strongly with such a scenario.
68. First, neither BellSouth nor any other ILEC that has completed (or almost completed) its transition to digital switching would have any reason, acting efficiently, to engage in such wholesale replacement. Rather, carriers engage in incremental replacement and expansion of switching plant; thus, a realistic TELRIC study should capture the mix of discounts the ILEC would expect to receive using the incremental approach.
69. Second, contrary to the opposing parties' claims, it is not appropriate to assume that the forward looking network would consist primarily of new switches with a small percentage of growth lines added on in the future. This ignores the prospect that, besides growth lines, carriers are likely to constantly upgrade and modify various modules of their switches. Therefore, the discount mix is likely to be different from the hypothetical mix assumed by the opposing parties. In fact, the FCC has argued before the Supreme Court that, contrary to the opposing parties' view, TELRIC "does

*not* assume that an efficient carrier would provide the switching element with large-capacity switches, rather than with a mix of smaller switches and so-called ‘add-on modules.’”<sup>77</sup> Accordingly, we disagree with Dr. Ankum’s claim that it “is not appropriate ... to include the costs of switch upgrades in the switch cost calculations”<sup>78</sup> because, in his view, those costs are only incurred for “older” switches and thus departs from TELRIC assumptions that only the “most currently available technology” should be used. This is, of course, absurd because even currently available technologies will eventually get “older” and would have to be upgraded.

70. Third, there is absolutely no basis for Dr. Ankum’s assumption that “switch upgrades, such as processor and software upgrades would typically be provided without additional charges as part of the current switch vendor prices when new facilities are provided.”<sup>79</sup> Again, this is a short run view that would ignore the ongoing nature of network deployment and operation. Processor upgrades, memory additions, switch fabric replacements, and software updates are purchased according to agreements that are *separate* from those for new switch purchases. In order to continue to provide competitive services in an efficient manner, ILECs such as BellSouth must upgrade switch hardware and software on a regular basis. The most egregious flaw in his argument is the claim that: “Under TELRIC, technology is assumed to be constant. This means that while a system may grow in terms of the number of consumers, it should be assumed to be in steady state as far as technological change is concerned.”<sup>80</sup> This is completely at odds with events in the telecommunications industry. Moreover, the cost of upgrades that switch vendors clearly factor into their contract prices cannot be accounted for by simply revisiting the latest technology every time a TELRIC proceeding is held. Thus, we strongly disagree with Dr. Ankum’s claim that “new switch contracts ensure that the ILECs are continually able to recoup the costs of new

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<sup>77</sup> *Verizon Communications, Inc. v. FCC*, No 00-511, FCC Reply Brief (July 2001), at 9, n.7.

<sup>78</sup> *Ankum Declaration*, at 20.

<sup>79</sup> *Ankum Declaration*, at 20.

<sup>80</sup> *Ankum Declaration*, at 21.

technologies.”<sup>81</sup> Contracts reflect the best efforts by each party to obtain the best possible deal for a given transaction or set of transactions. Once the contract is set, market forces and regulation determine whether the cost of equipment purchased under the contracts can be recovered. Moreover, depreciation policy influences when—and whether—costs of the equipment would be recouped.

71. Dr. Willig asserts that in a contestable market, an efficient ILEC would minimize its switching costs by purchasing “sufficient new capacity, at the lower price, to serve not just current demand, but also to serve at least some future demand, thereby reducing the need later to purchase higher cost add-on equipment.”<sup>82</sup> This would be true if effective switch prices available from vendors were truly cost-based (not distorted by a discounting policy that vendors use to develop loyalty and to sell follow-on additional capacity/growth lines). If all ILECs were to act this way, vendors would very likely begin to offer lower discounts on new switches and steeper discounts on growth capacity, effectively altering the prices that ILECs face.
72. These same considerations explain our disagreement with Dr. Ankum’s claim that switch discounts are explained by “simple economies of scale,”<sup>83</sup> rather than by strategic considerations that may lead switch vendors to set prices for new lines at—or below— incremental costs, based on contract provisions designed to maximize profits on the switches over the lifetime of the installation. Dr. Ankum’s claim that switch vendors will not engage in such strategies because financial markets pressure CEOs to deliver profits even in the short run ignores two considerations: (1) the substantial difference in discounts may not reflect pricing below incremental costs, and (2) financial markets also look carefully at sales growth, market share, and forecasts of future profits.

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<sup>81</sup> *Ankum Declaration*, at 22.

<sup>82</sup> *Willig Declaration*, at ¶102.

<sup>83</sup> *Ankum Declaration*, at 10-11.

**2. Switching rate structure issues—switching rates require a usage component.**

73. As the FCC has long recognized, costs should be recovered in a manner that is consistent with how they are incurred.<sup>84</sup> Thus, to the extent that switch costs vary with usage, they should be recovered via usage-sensitive charges. Failing to do so will lead to inefficient (excessive) usage of the network. BellSouth's engineers and cost modelers have demonstrated that a substantial portion of their switching costs vary with usage.<sup>85</sup> In particular, they explain that:

- Approximately two-thirds of switch costs are incurred by network components that are sized according to usage-dependent variables.
- 5ESS and DMS switches have capacity constraints, e.g., increased usage can cause network blockage in the equipment associated with the getting-started investment and the peripheral unit controller investment.
- Switch design is based on a projected level of total usage. As capacity is increased on the switch processor and other network components to account for greater projected usage, switch costs increase.
- Switch contracts include algorithms to develop *equivalent* line counts, which are based on usage to reflect the need for additional equipment that would be required at higher usage levels. The per-line price that switch vendors charge for a new switch is a per *equivalent* line price. The price per *actual* line increases as the usage increases.

74. Interestingly, AT&T has admitted that as much as 15 percent of switch costs are driven by usage<sup>86</sup>—an amount that BellSouth believes is vastly understated. Therefore, it would clearly be inappropriate to disallow usage-based switching rates. Accordingly, state commissions should have the latitude to permit usage-based switching rates.

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<sup>84</sup> *Local Competition Order*, at ¶743.

<sup>85</sup> See BellSouth's *Reply Comments*.

<sup>86</sup> Comments of AT&T Corporation ("*AT&T Comments*"), at 76.

## **G. Non-Recurring Charges are Not Barriers to Entry**

75. Predictably, both AT&T and MCI sound the alarm about the use of non-recurring charges (“NRCs”) to recover the forward-looking costs of non-recurring or one-time activities that ILECs perform on behalf of CLECs. While Ms. Murray characterizes NRCs as “entrance fees” that can be barriers to entry and make even UNE-based entry uneconomic,<sup>87</sup> Dr. Ankum attempts to justify the elimination of NRCs for a specific category of activities, namely, operations support systems (“OSS”) that ILECs must build to facilitate automated pre-ordering, order processing, billing, and provisioning (among other things) by CLECs.<sup>88</sup>
76. There are obvious flaws in the reasoning underlying these attempts. NRCs can only be barriers to entry if they are experienced asymmetrically by CLECs, not simply if the CLECs experience today what incumbent carriers experienced at an earlier time. Ms. Murray makes much of her belief that ILECs incur no cost to retain a customer, and that all of the “risk” associated with NRCs fall on new entrants (as a result of which, they allegedly experience higher capital costs). Despite the fact that the FCC has made the ILEC’s recovery of non-recurring costs in some instances easy on CLECs (by the institution of amortization and levelized recurring charges), Ms. Murray remains pessimistic about the effects of NRCs on CLECs.
77. Dr. Ankum’s arguments that OSS-related costs are not caused by CLECs, do not only benefit CLECs, and are, indeed, part of the common costs of the ILECs are a considerable stretch of logic. Without the expressed need of CLECs for OSS or similar systems that improve the efficiency with which they can interface with their customers, ILECs would simply avoid incurring the costs of those systems. Moreover, benefit has no place in cost causation: no matter in how roundabout a manner Dr. Ankum believes ILECs benefit from building OSS for CLECs, the fact is that the OSS cost is caused

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<sup>87</sup> *Murray Declaration*, at ¶¶128-133.

<sup>88</sup> *Ankum Declaration*, at 49-52.

entirely by the requesting CLEC. Because it is clear that OSS costs are caused by new entrants, it would be fundamentally wrong to treat OSS-related costs as common costs.

78. As we stated in our initial Declaration, the FCC's own concerns about the potentially detrimental effects of NRCs on CLECs may in some cases be justified, but those concerns need to be balanced against the equally valid concern about CLEC payment default before the payment period is over. The essential issue in the recovery of non-recurring costs remains the tension between ensuring that NRCs do not retard or deter competitive entry and giving ILECs the opportunity to recover fully their forward-looking non-recurring costs of providing one-time services to requesting CLECs. In this regard, we continue to believe that various imaginative mechanisms can be used to both lower the upfront costs of CLECs and alleviate the risks of default and incomplete compensation to ILECs. We proposed a few such mechanisms in our initial Declaration.<sup>89</sup> On this occasion, we would reiterate the importance of maintaining the logic of cost causation throughout the process of designing cost recovery mechanisms, whether through NRCs or recurring charges.

#### **H. Sharing of Costs Between an ILEC's Narrowband and Broadband Networks**

79. Following the FCC's recent decision to restrict the ILEC's unbundling obligation to facilities identified exclusively with the narrowband network,<sup>90</sup> AT&T raises the specter of ILECs taking undue advantage by allocating costs shared by their narrowband and broadband networks so as to subsidize (shift costs away) from their broadband facilities (and services) and raise the prices of their narrowband facilities (and services).<sup>91</sup> To this end, AT&T proposes that subsidy-free prices be set in the range between incremental cost and stand-alone cost (a principle to which we take no

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<sup>89</sup> NERA Declaration, at ¶¶104-107.

<sup>90</sup> See *In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers* (CC Docket No. 01-338), *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996* (CC Docket No. 96-98), and *Deployment of Wireline Services Offering Advanced Telecommunications Capability* (CC Docket No. 98-147), Report and Order and Order on Remand and Further Notice of Proposed Rulemaking ("*Triennial Review Order*"), released August 21, 2003, at 4 and Section VI.A.4.

<sup>91</sup> *AT&T Comments*, at 53-55.

exception), but that the allocation of the shared cost eschew the best-known methods available in economics for the purpose (e.g., Ramsey pricing or similar methods) and to adopt instead what appears very much like a line-based allocator (e.g., the number of voice grade equivalent lines in the two networks). Moreover, with higher growth rates observed in the broadband, rather than the narrowband, network, AT&T expects progressively more shared costs to be recovered by broadband services over time.

80. We disagree with this image of two discrete networks, each with distinct and identifiable stand-alone and incremental costs, within an integrated whole network. It should be remembered that, like with the narrowband network itself, ILECs have rolled out broadband capabilities and services incrementally (as demand developed) rather than on a flash cut basis. The underlying drivers of demand have always been the demand for basic narrowband services. In fact, the entire evolution of the fundamental narrowband network owes itself to the mission to serve this demand. As an overlay and incremental broadband network has developed along the contours of the narrowband network, one fact has remained immutable—the cost of the basic connection (the narrowband loop) remains an integral part of narrowband local exchange service and cannot be allocated away to the incremental broadband network. Rather, the cost of broadband services should be regarded as purely incremental and arising from the additional equipment needed to provide those services (e.g., a specific working plug in a remote terminal needed to turn a plain narrowband copper loop into broadband-capable DSL service).
81. The incremental manner in which the broadband telecommunications network has evolved is analogous to the trend observed in the cable industry, although in that instance, the industry led with broadband (cable TV) service and subsequently delved into cable telephony and lower band services. The fact remains, however, that even the cable industry has developed its “overlay” services (in this case, narrowband) incrementally.
82. Our objection to the AT&T prescription for recovering the shared costs of narrowband and broadband services is primarily that its apparent ultimate goal is to secure lower

UNE prices by shifting costs away from the narrowband network. Because the FCC's *Triennial Review Order* effectively put the ILECs' broadband facilities out of reach of CLECs under unbundled access arrangements, any artificial increase in the ILEC's cost of broadband services is not likely to be of any concern to CLECs. This is all the more reason for shared costs to be distributed efficiently between narrowband and broadband services. While economics provides several demand-based mechanisms for the purpose, the allocation mechanism apparent in AT&T's prescription should not be seriously entertained.

83. This concludes our Reply Declaration.