EXHIBIT 3

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	)	

Declaration of

NERA Economic Consulting

On Behalf of

BellSouth Telecommunications, Inc.

December 16, 2003

TABLE OF CONTENTS

EXECUTIVE SUMMARY III

I. INTRODUCTION 1
A. Statement of Qualifications 1
B. Purpose of Declaration 4

II. FCC'S TENTATIVE CONCLUSION REGARDING MODIFICATION OF THE CURRENT TELRIC METHODOLOGY IS WELL-ADVISED 5

III. SOME OVERARCHING CONSIDERATIONS IN ANY REFORM OF THE TELRIC METHODOLOGY 8

IV. RESPONSES TO THE *NPRM*: UNE PRICING 11
A. Overarching Issues 11
1. Goals of UNE Pricing 11
2. Impact of Triennial Review 16
B. Network Assumptions 21
1. General Theory 21
2. Specific Network Inputs 34
C. Cost of Capital 42
D. Depreciation Expense 45
1. Asset Lives 45
2. Depreciation Rate 47
E. Expense Factors 50
F. Non-Recurring Charges 51
1. Identification of Costs 51
2. Recovery of Costs 53
G. Rate Structure 57
H. Rate Deaveraging 58
I. Rate Changes Over Time 59

V. CONCLUSION: REFORMED UNE PRICING METHODOLOGY WILL PROMOTE EFFICIENT COMPETITION AND GREATER INVESTMENT 59

EXECUTIVE SUMMARY

On September 15, 2003, the Federal Communications Commission ("FCC") issued a Notice of Proposed Rulemaking ("*NPRM*") in WC Docket No. 03-173 regarding the principles of costing and pricing for the unbundled network elements ("UNEs") and resold services that incumbent local exchange carriers ("ILECs") are obliged to supply to competitive local exchange carriers ("CLECs") under Sections 251 and 252 of the Telecommunications Act of 1996. In this *NPRM*, the FCC tentatively concluded that its rules for calculating the ILEC's total element long run incremental cost ("TELRIC") should be reformed to "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."

In this Declaration, we affirm the wisdom in the FCC's tentative conclusion regarding how the TELRIC methodology ought to be reformed. We appreciate especially the FCC's tentative conclusion that TELRIC should be based on an ILEC's actual costs and actual network circumstances, rather than on those of an anonymous and hypothetical carrier that can never be shown to exist and operate in the manner attributed to it. Second, we identify the set of overarching issues that we believe must be kept in view when responding to the *NPRM*. Third, we respond, from an economic perspective, to various issues on which the *NPRM* seeks comment. Finally, we conclude that reform of the TELRIC methodology would improve the manner in which UNEs and unbundled network element-platforms ("UNE-Ps") are priced and enhance the prospects for (1) more efficient competition among ILECs and CLECs and (2) greater investment by both ILECs and CLECs in network facilities and new products and services.

Even as an overhaul of the TELRIC methodology is attempted in this proceeding, it is imperative to acknowledge certain immutable facts about ILECs to whose UNEs and UNE-Ps the reformed methodology would be applied. These considerations have historically been missing from policy debates about, and actual calculations of, TELRIC for ILECs around the country. First, the most significant distinguishing characteristic of an ILEC is its asymmetric set of obligations that no competitor (including a CLEC) is ever likely to face. The principal

such obligation of an ILEC is undoubtedly to serve as the ubiquitous service provider or carrier of last resort ("COLR") within its service territory. Second, the COLR obligation that is unique to ILECs merits rethinking what it means to be an "efficient" carrier or service provider. An ILEC with a COLR obligation and a CLEC with no corresponding obligation can each operate efficiently in its own way without there ever being a convergence of their respective unit costs to provide the same services. Accordingly, in any reformed TELRIC methodology, no single efficiency benchmark can—or should—apply to all carriers, regardless of their special or unique obligations. Third, as the FCC correctly recognizes, the depreciation methodology (comprising the choice of asset lives and the depreciation rate itself) and the method for determining a carrier's true cost of capital are both critically important issues in any new TELRIC methodology. We believe this proceeding offers a valuable opportunity to revisit some of the most controversial aspects of these issues and, in particular, the manner in which they have been treated in past TELRIC-related state and federal proceedings.

The noticeable bias among CLECs in favor of UNE-P-based operations strongly suggests that those CLECs are taking advantage of a pricing distortion that makes the deployment of their own resources (and taking full advantage of the greater flexibility that brings with it) relatively less attractive, at least for now. The fact that major CLECs appear to have abandoned facilities-based entry plans in favor of UNE-P is clear empirical evidence of the failure of UNE prices to send the proper economic signals. Hence, just how efficiently UNE prices are set in the future should be reflected in the downstream and longer-term trends in entry and investment decisions by CLECs.

While the UNE pricing rules ultimately crafted in this proceeding must ensure that the FCC's new impairment standard can be applied fairly and properly, those rules must also be fair to the ILECs that carry the obligation to provide UNEs. For that, an ILEC should be able to recover its forward-looking costs of UNEs based on TELRIC calculations that, as the FCC has tentatively concluded, properly account for the real-world attributes of its network. In trying to ensure that impaired CLECs are able to obtain UNEs from ILECs at cost-based prices, the FCC must not—inadvertently or otherwise—require that ILECs subsidize the entry and investment decisions of the CLECs.

For the first time, the FCC has recognized some serious internal contradictions in the current TELRIC methodology. Specifically,

1. The TELRIC methodology currently assumes that the carrier whose cost has to be estimated has a ubiquitous market presence and enjoys all the economies of scale and scope associated with such a carrier; yet, the methodology also assumes a competitive marketplace with multiple competitors that would effectively reduce the market share of the incumbent carrier and prevent it from actually experiencing those scale and scope economies.

2. The TELRIC methodology currently attempts to simulate a hypothetical network (based on the latest and most efficient technology available) operating in a competitive market; yet, even extremely competitive markets have never been known to consist of firms that replace their facilities instantaneously with every introduction of new or improved technology.

Any new TELRIC methodology that corrects these defects must take full account of an ILEC's actual network (e.g., the actual cable routes, customer and central office locations, remote terminal, cable box, and distribution terminal locations, fill factors and utilization rates, and structure sharing percentages), the COLR and other asymmetric regulatory and public policy obligations of the ILEC, the riskiness of the ILEC's operations and the need to use a risk-adjusted cost of capital, and economic depreciation policies that incorporate realistic economic asset lives and depreciation rates. The reformed TELRIC methodology would break new ground in respect to all of these cost modeling considerations. The end result would be calculation of the ILEC's actual forward-looking costs and the proper basis to set economically efficient UNE prices. In sum, making the reformed TELRIC methodology more consistent with a realistic network that operates under realistic demand conditions would make that network appear different from a hypothetical network in several essential respects. However, from the perspective of a forward-looking cost study, adopting more realistic assumptions for the network would not obviate the goal of operating efficiently and making the changes necessary over time to do so.

We expect the significance of the proposed reform to be twofold. First, we expect UNE prices set according to the reformed TELRIC methodology to result in economically efficient choices by CLECs. Presently, without true, cost-based, and economically efficient UNE prices

in place, competition from CLECs is failing to be efficient. Specifically, CLECs are favoring UNE and UNE-P based competition over facilities-based competition for as long as UNE prices remain artificially low. Second, we expect UNE prices that result from the reformed TELRIC methodology to provide proper signals to guide future investments by ILECs and CLECs alike.

I. INTRODUCTION

A. Statement of Qualifications

Dr. William E. Taylor

1. My name is William E. Taylor. I am Senior Vice President of NERA Economic Consulting ("NERA"), head of its Communications Practice, and head of its Cambridge office located at One Main Street, Cambridge, Massachusetts 02142.

2. I have been an economist for over twenty-five years. I earned a Bachelor of Arts degree from Harvard College in 1968, a Master of Arts degree in Statistics from the University of California at Berkeley in 1970, and a Ph.D. from Berkeley in 1974, specializing in Industrial Organization and Econometrics. For the past twenty-five years, I have taught and published research in the areas of microeconomics, theoretical and applied econometrics, which is the study of statistical methods applied to economic data, and telecommunications policy at academic and research institutions. Specifically, I have taught at the Economics Departments of Cornell University, the Catholic University of Louvain in Belgium, and the Massachusetts Institute of Technology. I have also conducted research at Bell Laboratories and Bell Communications Research, Inc. I have participated in telecommunications regulatory proceedings before several state public service commissions.

3. I have also filed testimony before the Federal Communications Commission and the Canadian Radio-television Telecommunications Commission on matters concerning incentive regulation, price cap regulation, productivity, access charges, local competition, interLATA competition, interconnection and pricing for economic efficiency. Recently, I was chosen by the Mexican Federal Telecommunications Commission and Telefonos de Mexico ("Telmex") to arbitrate the renewal of the Telmex price cap plan in Mexico.

4. I have also testified on market power and antitrust issues in federal court. In recent work years, I have studied—and testified on—the competitive effects of mergers among major telecommunications firms and of vertical integration and interconnection of telecommunications networks. Finally, I have appeared as a telecommunications commentator on PBS Radio and on The News Hour with Jim Lehrer.

Dr. Aniruddha Banerjee

5. My name is Aniruddha Banerjee. I am a Vice President with the Communications Practice at NERA.

6. I earned a Bachelor of Arts (with Honors) and a Master of Arts degree in Economics from the University of Delhi, India, in 1975 and 1977, respectively. I received a Ph.D. in Agricultural Economics from the Pennsylvania State University in 1985, and served there subsequently as an Assistant Professor of Economics. I have over eight years of experience teaching undergraduate and graduate courses in various fields of economics and econometrics, and have conducted academic research that has led to publications and conference presentations.

7. Since 1988, I have held various positions in the telecommunications industry. Prior to my present position, I have been an economist in the Market Analysis & Forecasting Division at AT&T Communications, Inc., a Member of Technical Staff at Bell Communications Research (n/k/a Telcordia Technologies), and a Research Economist at BellSouth Telecommunications, Inc. In my present capacity, I have filed expert testimony before the Federal Communications Commission on depreciation requirements of incumbent local exchange carriers, BellSouth's entry into interLATA long distance market in Louisiana, efficient inter-carrier compensation for Internet-bound traffic, and triennial review of unbundling requirements. I have also testified before state regulatory commissions on cost models for unbundled network element pricing, interconnection arrangements and imputation analysis, universal service, reciprocal compensation for Internet-bound traffic, and demand analysis for intraLATA long distance service.

8. I have published articles on telecommunications and finance in academic and industry journals and presented research findings periodically at industry and academic conferences in the U.S. and abroad. Some of my articles have also appeared in books on telecommunications economics.

Dr. Harold Ware

9. My name is Harold Ware. I am a Vice President with the Communications Practice at NERA.

10. I received a B.A. *cum laude* in Economics from the State University of New York at Stony Brook, and M.A. and Ph.D. degrees in Economics from Cornell University. While pursuing graduate studies at Cornell, I taught courses in economics and industrial organization and did research on cellular mobile communications in the Technology Assessment Project of the Program on Science, Technology, and Society. My articles have been published in *Public Utilities Fortnightly*, *The Journal of Regulatory Economics, IEEE Communications,* proceedings of the *Fifth* and *Seventeenth Annual Telecommunication Policy Research Conferences*, and in *Managing Change in the Postal and Delivery Industries*. I am also co-author of three chapters of *Communications for a Mobile Society: An Assessment of New Technology*.

11. Since joining NERA, I have directed studies and prepared testimony for regulatory proceedings and antitrust cases. My telecommunications research has focused on the: costs of network interconnection; competition in the directory assistance, local, interexchange, Centrex/PBX, and private line markets; costs, pricing, and entry policy, and universal service issues associated with the transition to competition; analyses of competitive effects of mergers in wireless telecommunications and between telephone and cable TV companies; and the planning and deployment of new technology in telecommunications networks. I have also studied competition and demand for postal services and the impact of postal rate changes. I have testified before state regulatory commissions and the U.S. Postal Rate Commission, and filed affidavit testimony before the Federal Communications Commission and the Department of Justice. I have

also directed, and was coauthor of, an international comparison of regulation and competition submitted by Telecom New Zealand to the New Zealand Ministerial Inquiry into Telecommunications.

B. Purpose of Declaration

12. This declaration, filed on behalf of BellSouth Telecommunications, Inc. ("BellSouth"), responds to the Notice of Proposed Rulemaking ("*NPRM*") released by the Federal Communications Commission ("FCC") in WC Docket No. 03-173, ("this proceeding"), dated September 15, 2003.

13. Our Declaration has the following objectives. First, we affirm the wisdom in the FCC's tentative conclusion about how the methodology for calculating the total element long run incremental cost ("TELRIC") should change in order to accommodate the real-world attributes of the incumbent carrier's network. Second, given the large number of issues on which the *NPRM* seeks comment, we identify the set of overarching issues that we believe must be kept in view when responding to the *NPRM*. Third, we respond, from an economic perspective, to various issues on which the *NPRM* seeks comment. Finally, we conclude that reform of the TELRIC methodology would improve the manner in which unbundled network elements ("UNEs") and unbundled network element-platforms ("UNE-Ps") are priced and enhance the prospects for (1) more efficient competition among incumbent local exchange carriers ("ILECs") like BellSouth and competitive local exchange carriers ("CLECs") and (2) greater investment in network facilities and new products and services.[1]

[1] While adoption of the changes recommended in this Declaration would enable ILECs to offer UNE-Ps at more efficient prices (based on the actual costs to provide them), we are not endorsing the provision of combinations of network elements on an unbundled basis. It is not economically efficient to continue the obligation that ILECs currently have to offer UNE-P, even at prices based on actual costs. This proceeding, however, is not the appropriate forum for that argument.

II. FCC'S TENTATIVE CONCLUSION REGARDING MODIFICATION OF THE CURRENT TELRIC METHODOLOGY IS WELL-ADVISED

14. In launching its first comprehensive review of the TELRIC methodology that underlies its UNE pricing rules, the FCC has taken a long overdue step in the right direction. Over seven years since the passage of the Telecommunications Act of 1996 ("1996 Act") and subsequent codification of the 1996 Act in the *Local Competition Order*,[2] the FCC is taking stock of the state of local exchange competition through this and other proceedings.[3] A significant part of that inquiry concerns the *modes of competitive entry* that CLECs may choose (namely, resale of the ILEC's services, leasing of UNEs or UNE-Ps, or deployment of self-supplied network facilities, or some combination of the three) and the *extent of competitive entry* (namely entry by CLECs as well as by other sources of competing services—called "intermodal competitors"—who employ alternative means to provide those services, including cable, wireless, and satellite networks).

15. Within the broader context of whether significant local exchange competition (particularly of the facilities-based kind) has materialized since the passage of the 1996 Act, this *NPRM* addresses the FCC's particular concern that the TELRIC methodology that underlies the pricing of UNEs and UNE-Ps has remained unreviewed since its inception seven years ago. Reflecting on this matter, the FCC notes:

> Our concerns in evaluating the TELRIC pricing rules are somewhat different than those present at the time the Commission adopted its *Local Competition Order*. At that time, local competition was largely a theoretical exercise and we placed a premium on the need to stimulate entry into the local exchange market.

---

[2] FCC, *In the Matter of Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, First Report and Order ("*Local Competition Order*"), released August 19, 1996, *aff'd in part and vacated in part sub nom. Comp. Tel. Assoc. v. FCC*, 8th Circuit Court of Appeals, 1997, and *Iowa Utilities Board v. FCC*, 8th Circuit Court of Appeals, 1997, *aff'd in part and remanded in part, AT&T v. Iowa Utilities Board*, 1999, *on remand Iowa Utilities Board v. FCC*, 8th Circuit Court of Appeals, 2000, *reversed in part sub nom. Verizon Communications, Inc. v. FCC*, 2002.

[3] See, e.g., the ongoing proceeding in FCC, *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.

> To ensure that UNE prices provided appropriate economic signals for competitive and investment purposes, we adopted a forward-looking cost methodology that calculates the cost today of building and operating an efficient facility, as opposed to the cost of an existing facility at the time it was built. In stating that forward-looking costs were intended to send appropriate economic signals, we mean that UNE prices in excess of forward-looking costs would encourage competitors to build facilities when the more efficient course might be to lease facilities from the incumbent LEC, while prices below forward-looking costs might encourage them to rely on the incumbent's facilities when the more efficient course might be to construct their own facilities. At the same time, we anticipated that UNE prices based on forward-looking costs also would not discourage investment by incumbent LECs because such prices would allow them to recover their costs.
>
> Today, now that competition has taken root in many areas of the country, we initiate this proceeding to consider whether our pricing methodology is working as intended and, in particular, whether it is conducive to efficient facilities investment. To the extent that the application of our TELRIC pricing rules distorts our intended pricing signals by understating forward-looking costs, it can thwart one of the central purposes of the [1996] Act: the promotion of facilities-based competition. While our UNE pricing rules must produce rates that are just, reasonable and nondiscriminatory, consistent with the [1996] Act's goal of promoting sustainable competition, they should not create incentives for carriers to avoid investment in facilities.[4]

16. The relatively brief history of TELRIC has been, to say the least, checkered. Although it has survived several court challenges, the FCC acknowledges that the most fundamental criticism of TELRIC since its inception has not been muted.

> Nevertheless, the TELRIC rules have proven to take a great deal of time and effort to implement, and have been the subject of extensive criticism. In particular, critics argue that the TELRIC methodology is flawed due to an alleged emphasis on unrealistic efficiency assumptions. They contend that these unrealistic assumptions result in rates that are so far below an incumbent LEC's "actual" costs that neither incumbent LECs nor competitive LECs have an incentive to invest in new facilities.[5]

---

[4] *NPRM*, at ¶¶2-3. Footnotes omitted.

[5] *Id.*, at ¶5. Footnote omitted.

17. Recognizing how durable this criticism of TELRIC has been, the FCC has devoted this proceeding to establishing an alternative methodology for TELRIC that would address that criticism.

> Specifically, we propose to simplify TELRIC pricing, while simultaneously improving the accuracy of its pricing signals, by resolving one of the key internal tensions that marks its current application: the assumption that for some purposes rates should reflect a market with widespread facilities-based competition but, for other purposes, rates should reflect a market with a single dominant carrier. We seek comment on an approach that bases UNE prices on a cost inquiry that is more firmly rooted in the real-world attributes of the existing network, rather than the speculative attributes of a purely hypothetical network.[6]

18. With this objective in view, the FCC offers the following tentative conclusion.

> We tentatively conclude that *our TELRIC rules 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*. We seek comment on whether such an approach would address claims that our TELRIC rules currently distort a competitor's decision whether to invest in new facilities or to lease an incumbent's existing facilities. Yet we also wish to ensure that a reformed TELRIC methodology does not swing in the other direction and give incumbents undue advantages. We seek comment on this tentative conclusion and, in particular, on how such an approach may differ from the practices of state commissions in UNE pricing proceedings.[7]

19. This tentative conclusion marks a significant departure from the proxy TELRIC approach adopted by many state regulators as they attempted to follow the FCC's directives, namely, that of the cost of a hypothetical, most-efficient network built from scratch to provide critical parts (or elements) of its network on an unbundled basis.[8] ILECs have long maintained that such a starting point is so flawed that any calculation of TELRIC based on it can never represent the true costs experienced by (even efficient) ILECs to provide UNEs and UNE-Ps to requesting CLECs. ILECs contend correctly that their networks are not built from scratch, cannot expect to be constantly

---

[6] *Id.*, at ¶4.

[7] *Id.*, at ¶52. Emphasis added.

[8] In what follows, we refer to current practice as the "current TELRIC methodology" and the approach proposed by the FCC as the "reformed TELRIC methodology."

and instantaneously upgraded as technology and market conditions change, and cannot be rendered faithfully in cost studies designed to reflect their forward-looking costs unless full account is taken of circumstances special or unique to them. In other words, the absence of "real-world attributes" in the original TELRIC paradigm made it fundamentally unsuited to representing the true costs of ILECs even when operating as efficiently as possible. Moreover, ILECs and many observers believe that UNE prices set on the basis of hypothetical costs can never provide appropriate cost recovery or incentives to either ILECs or CLECs to invest in their own network facilities.[9] We agree.

20. We applaud the FCC's desire to devote this proceeding to a thorough sorting out of the large number of complicated issues of principle and practice tied up with TELRIC and UNE pricing. We appreciate especially the FCC's tentative conclusion that TELRIC should be based on an ILEC's actual costs and actual network circumstances, rather than on those of an anonymous and hypothetical carrier that can never be shown to exist and operate in the manner attributed to it. In supporting the new (and well-advised) direction charted by the FCC, we believe that a more realistic depiction of the cost to provide UNEs will greatly improve the prospects for efficient competition, encourage investment by both ILECs and CLECs, and leave consumers of telecommunications services the ultimate winners.

III. Some Overarching Considerations in Any Reform of the TELRIC Methodology

21. Even as an overhaul of the TELRIC methodology is attempted in this proceeding, it is imperative to acknowledge certain immutable facts about ILECs to whose UNEs and UNE-Ps the reformed methodology would be applied. These considerations have historically been missing from policy debates about, and actual calculations of, TELRIC for ILECs around the country.

---

[9] *NPRM*, at fn. 100.

22. First, the most significant distinguishing characteristic of an ILEC is its asymmetric set of obligations that no competitor (including a CLEC) is ever likely to face. The principal such obligation of an ILEC is undoubtedly to serve as the ubiquitous service provider or carrier of last resort ("COLR") within its service territory. Not only must the ILEC stand prepared to provide service whenever or wherever (within its service territory and subject to its tariffs) it is demanded, it must do so without regard to the actual cost to provide that service. In return for accepting this obligation, the ILEC has historically been allowed to subsidize that cost by contribution from other services and now receives compensation in the form of explicit universal service support.[10] While it has worked satisfactorily for decades prior to the 1996 Act and, in particular, the opening of the local exchange to competition, such an arrangement is coming increasingly under strain. CLECs and intermodal competitors that bear no corresponding COLR obligations are free to choose which customers and customer locations to serve, what services to provide, and what terms and conditions to offer. Predictably, competitors have, as a rule, targeted the most lucrative customers first—a strategy frequently described as "cherry-picking"—leaving the least lucrative (and, often, simply unprofitable-to-serve) customers to the ILECs that carry the COLR burden. The obligation to maintain ubiquitous networks has also burdened ILECs with increased operational risks as alternative service providers—particularly intermodal competitors—are starting to make competitive gains even in the more expensive-to-serve rural areas.[11]

23. Second, the COLR obligation that is unique to ILECs merits rethinking what it means to be an "efficient" carrier or service provider. The underlying standard for the calculation of TELRIC has historically been efficiency, and references to the costs of a "most-efficient" service provider are frequent. Although the FCC now proposes to

---

[10] Even with the availability of such universal service support, however, the internal subsidies in most ILECs' service prices have not yet been fully replaced.

[11] Wireless and satellite technologies have reduced the geography-dependency of service providers, particularly by eliminating the need to lay miles of expensive cable and accompanying structures in sparsely populated rural areas or locations with difficult terrain conditions.

compute the TELRIC based on actual, rather than hypothetical, networks, the efficiency requirement is not abandoned. This is apparent from the following excerpt from the *NPRM*:

> The dispute as to the relevant network for pricing purposes is in large part a dispute over what constitutes efficiency. ... What is the efficiency standard that the Commission should use in order to achieve UNE prices that send the correct economic signals regarding investment, while still achieving the necessary level of cost recovery? To what extent is the efficiency standard related to assumptions about the state of competition? For example, the requirement in the current rules to assume the most efficient technology currently available is based on the assumption that competitors would deploy the most efficient technology on a widespread basis, thereby constraining the value of the incumbent LEC network. We ask parties to be very specific in defining the standard of efficiency and explaining how to determine whether a network is optimized for economic efficiency.[12]

24. If efficiency remains a critically important part of the TELRIC calculation, then it would be equally important to acknowledge that no single efficiency benchmark could possibly apply to both carriers that do not have the COLR obligation and carriers that do. Common sense dictates 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 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. In other words, an ILEC with a COLR obligation and a CLEC with no corresponding obligation can each operate efficiently in its own way without there ever being a convergence of their respective unit costs to provide the same services. Although we return to this issue later, it is worth noting that, in any new TELRIC methodology, no single efficiency benchmark can—or should—apply to all carriers, regardless of their special or unique obligations.

25. Third, as the FCC correctly recognizes, the depreciation methodology (comprising the choice of asset lives and the depreciation rate itself) and the method for determining a

[12] *NPRM*, at ¶57.

carrier's true cost of capital are both critically important issues in any new TELRIC methodology. We believe this proceeding offers a valuable opportunity to revisit some of the most controversial aspects of these issues and, in particular, the manner in which they have been treated in past TELRIC-related state and federal proceedings. However, we also note that depreciation (which can be viewed as a means for converting capital expenditures into annual expenses and cash flow requirements) and the cost of capital (which can be viewed as a means for evaluating the economic feasibility of risky capital investments) are distinct pieces of the TELRIC puzzle. The policy with respect to one cannot—and should not—be a substitute for the policy with respect to the other. Fortunately, the *NPRM* regards depreciation and the costs of capital as separate issues and offers an opportunity to revisit the policies regarding both.

IV. RESPONSES TO THE *NPRM*: UNE PRICING

A. Overarching Issues

1. Goals of UNE Pricing

26. Given TELRIC's importance to UNE pricing, the *NPRM* leads off by asking what the objectives of such pricing should be.[13] We believe that the two objectives originally set for UNE pricing (in the *Local Competition Order*) are still valid. These were to (1) send signals to ILECs and CLECs (and other competitors) alike to help them make economically efficient entry and investment decisions, and (2) provide ILECs an opportunity to recover their forward-looking costs of providing UNEs. While these objectives were unexceptionable, we note that UNE pricing, in practice, has not worked entirely as intended. Indeed, as noted above, the FCC's TELRIC concept was articulated at a time when the FCC was concerned with jump-starting competition. The significant surge in the use of UNE-P by CLECs in recent years, in place of the anticipated deployment by CLECs of their own facilities, is a sign that CLEC entry and

[13] *Id.*, at ¶38.

investment decisions may have become overwhelmingly skewed in the direction of UNE-P because of artificially low UNE-P relative prices.[14] At the same time, ILECs have complained that UNE-P prices set by regulators have often been non-compensatory.[15] There are several instances in which those prices have been set deliberately low (i.e., below the true costs to the ILECs) as a tool for encouraging competitive entry[16] when, in fact, rate rebalancing and raising local exchange rates (particularly for residential customers) to subsidy-free levels while also pricing UNE-P appropriately would have been the economically efficient course of action for accomplishing that goal.

27. This proceeding provides another opportunity to reaffirm the first goal of UNE pricing, namely, to send signals that guide efficient entry and investment decisions by *all* competitors. However, actual regulatory practice must match that principle: the level of UNE prices must not be viewed as part of the regulatory toolkit for encouraging just *any* entry, even inefficient entry. Nor must it bias the mode of entry so irretrievably in the direction of UNE-P that any incentive that a competitor may have to enter and serve the market through its own facilities is snuffed out prematurely. ILECs should not continue to be the instruments for subsidizing UNE-P-based competition and dampening the prospects for facilities-based competition.

28. With regard to the second objective, an opportunity for a broader consideration of cost recovery has arisen with the FCC's publication of the *Triennial Review Order*. As the

---

[14] See the extensive discussion of this phenomenon in FCC, *In the Matter of Review of the Section 251 Unbundling Obligations of the Incumbent Local Exchange Carriers* (CC Docket No. 01-338), *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996* (CC Docket No. 96-98), and *Deployment of Wireline Services Offering Advanced Telecommunications Capability* (CC Docket No. 98-147), UNE Fact Report (submitted on behalf of BellSouth, SBC, Qwest, and Verizon), April 2002. Also, FCC data show that the share of UNE and UNE-P based access lines served by CLECs nationally rose from 24 percent in December 1999 to over 55 percent in December 2002. See FCC, *Local Telephone Competition: Status as of December 31, 2002*, Industry Analysis and Technology Division, Wireline Competition Bureau, June 2003, Table 3.

[15] A service price is non-compensatory when it fails to recover the service's incremental cost.

[16] For example, recognizing the fact that residential basic local telephone service prices of prominent ILECs in Florida (including BellSouth, Verizon, and Sprint) contain "support," the Florida legislature recently enacted legislation (Senate Bill SB 654) intended to raise those prices by as much as the ILECs' intrastate access rates are reduced (upon being dropped to parity with interstate access rates). The Florida Public Service Commission is presently conducting a proceeding for its implementation.

prospects for de-listing certain UNEs (e.g., switching) have improved, the need to set prices for network elements by regulatory means (such as TELRIC-based pricing), rather than through the normal operation of market forces, has narrowed. Thus, prices set by non-market means for the network elements that the FCC retains as UNEs, should give ILECs the opportunity to fully recover the forward-looking costs of providing those UNEs to requesting carriers. Market forces should be allowed to guide the pricing of all other network elements (including de-listed UNEs).

29. The *NPRM* also seeks empirical measures for determining whether UNE prices are "sending appropriate signals with respect to competitive entry and investment."[17] This is an important but difficult requirement, particularly because whether UNE prices are working as intended can only be judged "after the fact," i.e., by observed marketplace outcomes. There is no bright-line *empirical* test to predict or anticipate how well, for example, UNE prices set today will guide entry and investment decisions at a later date (especially by CLECs or other competitors who are not even in the market presently).

30. Over the longer term, however, trends in competitive entry and investments themselves may reveal the consequences of UNE prices set at an earlier time. For example, if entry and investment data show a progression from resale-based entry to UNE-based entry and, ultimately, to facilities-based operations, then it could be concluded that the 1996 Act (and its implementation at the federal and state levels) has worked exactly as intended. If, on the other hand, this progression is interrupted—as seems to be happening currently—and a significant proportion of the entry and investment activity by CLECs gets diverted into UNE-P-based operations, then that would be a sign of distorted economic signals.

31. Assuming that the wholesale discount for resold ILEC services is set correctly, resale offers an attractive low-cost method of entry that can sustain a competitor through the time it takes for it to build a viable customer base and establish a brand name and reputation in the marketplace. As a long-term strategy, resale-based operations offer

[17] *NPRM*, at ¶39.

little opportunity to competitors to develop their own services or offer prices de-linked from the prices charged (and costs experienced) by ILECs. Therefore, competitors may be expected, in the longer term, to shift to service provision by making increasing use of their own facilities (initially, in combination with UNEs leased from ILECs). In principle, being able to deploy their own facilities should offer competitors the greatest freedom to offer new and innovative services and service bundles or to meet customer needs that cannot be served through resale. Intermodal competitors already offer proof of that principle, as cable and wireless carriers have made competitive inroads into both narrowband voice telephony and broadband communications (including high-speed Internet access).

32. The increasingly pronounced detour from this path by *wireline* CLECs towards UNE-P-based operations strongly suggests that those CLECs are taking advantage of a pricing distortion that makes the deployment of their own resources (and taking full advantage of the greater flexibility that brings with it) relatively less attractive, at least for now.[18] The flexibility, modularity, and geography-independence offered by modern switches should, in principle, make it easier for CLECs to deploy their own switches in combination, perhaps, with leased unbundled loops, even to serve residential and small business customers (termed the "mass market" by the FCC). The fact that major CLECs have abandoned facilities-based entry plans in favor of UNE-P is clear empirical evidence of the failure of UNE prices to send the proper economic signals. Hence, just how efficiently UNE prices are set in the future should be reflected in the downstream and longer-term trends in entry and investment decisions by CLECs.

33. Given the two objectives for UNE pricing, it is logical to ask (as does the FCC) whether there should be a separate mechanism for recovering embedded costs that are

[18] Intermodal competitors do not rely on UNEs or UNE-P and are, hence, not affected directly by any distortion in UNE prices. They may still be affected indirectly by the choices that their wireline counterparts make when faced with distorted price signals.

not already recovered in UNE prices.[19] This is an important, though often overlooked, issue because estimates of TELRIC (on which UNE prices are based) are frequently well below the embedded costs of the major ILECs. With major discrepancies between supposedly forward-looking costs and historical costs, it is reasonable to conclude that (1) absent any major gains in efficiency and productivity, the current estimates of forward-looking costs (TELRIC) are likely biased downward, and (2) unless those biased forward-looking costs are corrected, some mechanism for recovering the gap between current TELRIC and true forward-looking costs must be available to ILECs.

34. The real concern here is not so much with the recovery of past costs (although ILECs should remain entitled to reasonable opportunities to recover those costs) as with the recovery of true forward-looking costs of UNEs. As estimated currently, TELRIC has proved to be insufficient for that purpose, causing downward-biased UNE prices that have artificially inflated demand for UNEs and UNE-Ps. Therefore, avoiding or at least minimizing distortions in TELRIC estimates would be more desirable for the recovery of *forward-looking* costs than a separate (and, undoubtedly, contentious) cost recovery mechanism. We believe that if TELRIC is calculated based on real-world network attributes and plans, the need to recover the gap between TELRIC (as estimated using the current methodology) and "true" forward-looking costs through a separate mechanism would be greatly reduced.

35. Finally, the FCC asks whether additional goals should be set for UNE pricing besides the two discussed above.[20] Given the objective that UNE prices should be economically efficient, the FCC could promote "market-wide" efficiency by ensuring that retail service prices are economically efficient as well. In most circumstances, this would involve some form of rate rebalancing which would, at a minimum, remove the internal subsidy from certain supported services (e.g., residential flat-rated single-line local exchange service) and bring the prices of supporting services (e.g., business services, vertical services, etc.) closer to their respective underlying incremental

[19] *NPRM*, at ¶40.

[20] *Id.*, at ¶41.

costs.[21] The benefit from this would, of course, be a realignment of retail prices with wholesale prices, particularly where deaveraged wholesale prices are already in effect. This would also obviate the temptation to tinker with UNE prices, rather than with retail service prices, whenever regulators feel an urgent need to stimulate competitive entry.

2. Impact of Triennial Review

36. The FCC seeks comment on the relationship, if any, between a new interpretation of §251(d)(2) of the 1996 Act (adopted in the *Triennial Review Order*, at ¶¶55-172) to determine whether requesting telecommunications carriers are entitled to UNEs and the FCC's existing UNE pricing rules.[22] The new interpretation of §251(d)(2) of the 1996 Act to which the FCC alludes essentially lays out the conditions under which CLECs would be considered to be "impaired" unless a certain element of the ILEC's network were made available to them as a UNE. This revamped impairment standard would "find a requesting carrier to be impaired when lack of access to an [ILEC] network element poses a barrier or barriers to entry, including operational and economic barriers, that are likely to make entry into a market uneconomic."[23] To that end, the FCC identifies various potential barriers to entry, including the high capital requirements of facilities-based entry by competitors.[24] Also, focusing on barriers supposedly within the ILEC's control, the FCC states:

> [I]f there are technical or operational barriers solely or primarily within the [ILEC's] control, unbundling a network element may give a requesting carrier an opportunity to compete while the [ILEC] determines whether or how it might cure the provisioning or operational problems.[25]

---

[21] Although the prices of many of these services are under state, not FCC, regulatory control, there is an opportunity here for the FCC to prescribe various moves to improve pricing efficiency (of which rate rebalancing of the kind suggested here is one). Some states like Illinois, Massachusetts, and Florida (currently) have already undertaken such efforts.

[22] *NPRM*, at ¶42.

[23] *Triennial Review Order*, at ¶84.

[24] *Id.*, at ¶86.

[25] *Id.*, at ¶91.

37. These pronouncements of the FCC strongly suggest that the availability of critical ILEC network elements as UNEs at TELRIC-based prices will continue to be central to the application of the impairment standard. Availability here connotes more than just access to the physical facility needed by the requesting carrier; it also means access at a cost-based and reasonable price that is unlikely to pose an operational barrier for that carrier. Hence, the subject matter of this proceeding has an important relationship to the subject matter of the Triennial Review proceeding. While the UNE pricing rules ultimately crafted in this proceeding must ensure that the FCC's new impairment standard can be applied fairly and properly, those rules must also be fair to the ILECs that carry the obligation to provide UNEs. For that, an ILEC should be able to recover its forward-looking costs of UNEs based on TELRIC calculations that properly account for the real-world attributes of its network. In trying to ensure that impaired CLECs are able to obtain UNEs from ILECs at cost-based prices, the FCC must not—inadvertently or otherwise—require that ILECs subsidize the entry and investment decisions of the CLECs.

38. The FCC requests comments on the implications of its new unbundling approach for the pricing of hybrid fiber/copper loops.[26] Recently, the FCC concluded that ILECs "typically segregate transmissions over hybrid loops into two paths, i.e., a circuit-switched path using TDM technology and a packet switched path (usually over an ATM network)."[27] The digital technologies can be used to provide broadband or narrowband services. The FCC requires ILECs to provide unbundled access for provision of narrowband services either via a "non-packetized DS0 TDM transmission

---

[26] *NPRM*, at ¶43.

[27] *Triennial Review Order,* at fn. 846. The FCC explained:

> As digital transmission technologies replaced analog systems, carriers started using TDM to combine multiple transmission paths onto a single cable. TDM provides a transmission path by dividing a circuit into time slots and providing a dedicated time slot to an end user for the duration of the call. More recently, carriers have started using packet-switched technologies (e.g., ATM or frame relay) to combine different types of traffic over shared facilities. By using packet-switched technology, carriers can transmit voice, fax, data, video, and other over a single transmission path at the same time.

Id., at ¶220.

path capable of voice grade service or via end-to-end copper loops." ILECs are not required to unbundle "any transmission path over a fiber transmission facility between the central office and the customer's premises ... that is used to transmit packetized information."[28]

39. Given this policy, the FCC asks whether the price of an entire copper loop should be the same as the price of the portion of a hybrid fiber/copper loop that must be unbundled. The FCC also asks how prices for these loop elements should be developed in either case. The price for either copper loops or TDM circuit paths on hybrid loops should be the long-run forward-looking cost to provide unbundled DS0 access, regardless of the facility type. That is the cost of replacing a facility with the mix of technologies to be deployed by the ILEC in new or replacement installations.[29] As we explain later in this Declaration, the replacement plant assumed should not be the hypothetical least-cost plant and equipment that would be installed if the entire network could be instantaneously replaced. Rather, it should be the mix of forward-looking technologies that the ILEC would expect to deploy over time.

40. The FCC also asks how the costs of fiber should be allocated, given the limited availability of hybrid fiber/copper loops.[30] As noted above, two types of circuit paths share the fiber portion of the loop plant—TDM and packetized circuit paths. In keeping with the *Local Competition Order's* instructions for pricing UNEs, the price of TDM should include the following directly attributable costs: (1) the direct costs of electronics, software, and associated operating expenses for each non-packetized service, and (2) the "directly attributable, shared costs," i.e., the incremental costs of shared facilities and operations directly attributed to each type of transmission path.[31] Thus, assuming that (1) the FCC requires a proportionate allocation of shared and

---

[28] *Triennial Review Order*, at ¶¶ 288-289.

[29] When existing or "legacy" copper loops are used, a potential problem arises if depreciation has historically not been sufficient to bring the carrying charges plus the operating costs of the installed copper down low enough to equal the forward-looking costs of the replacement technology.

[30] *NPRM*, at ¶43.

[31] For a discussion of directly attributable, shared costs, see *Local Competition Order*, at ¶682.

common costs to each service that shares the fiber facility, and (2) costs vary essentially with the number of circuits required to meet estimated demand, it would be reasonable to allocate shared fiber costs in proportion to the relative use of the plant at issue.

41. Finally, the FCC notes that its new UNE loop rules limit the availability of fiber loops.[32] In that context, if a CLEC were to lease a copper loop that had been otherwise replaced by a fiber loop (and, therefore, depreciated fully), the FCC asks whether a price based on forward-looking cost would still be appropriate.[33] The long-run forward-looking cost of the loop should appropriately be based on its replacement cost, whether or not it has been depreciated fully on the ILEC's books. Even when the existing loop is still in place and not depreciated fully, support for this premise comes from the fact that the value of that loop is both determined and constrained by the cost of a replacement plant reflecting the most efficient technology compatible with the ILEC's forward looking network plans.

42. Acknowledging that the *Triennial Review Order* limited unbundling requirements with respect to several ILEC network elements, the FCC asks how costs should be developed for UNEs that no longer have to be provided throughout the ILEC's service territory.[34] When unbundling obligations are limited for high-capacity loops, switching, and transport (i.e., they no longer need to be provided ubiquitously), costs developed for areas where UNE provision remains mandatory should still take account of cost information from areas where UNE provision is no longer required. This conclusion follows if the ILEC's network is properly viewed as an integrated whole in which the individual parts work together in some fashion, regardless of whether those parts are located in areas where unbundling is still required or is not. For example, calls within a network are frequently routed through a number of switches prior to completion. Some of the switches may be located in areas where unbundling is no

---

[32] *Triennial Review Order*, at ¶¶273-284.

[33] *NPRM*, at ¶43.

[34] *Id.*, at ¶44.

longer required and others in areas where unbundling remains in effect. When developing the forward-looking cost of switches, the total demand for switches must be taken into account, regardless of where those switches are located.

43. Waiving the unbundling requirement for certain areas or classes of customers only means that CLECs serving those areas or customers are not impaired in the sense defined by the FCC. For example, if CLECs can acquire switches from alternative sources or can supply their own, then they are, arguably, no longer impaired without access to switching at UNE prices from an ILEC. In these conditions, the ILEC may no longer be under any obligation to provide switches at UNE prices, but that fact alone would not change the forward-looking cost of those switches. As long as the switches (or other ILEC network elements) are not used exclusively to serve the areas or customers for which unbundling is no longer required, their forward-looking costs would continue to be calculated by reference to their relationship to other switches (or elements) in the ILEC's network.

44. The only conceivable exception to this rule would arise for components of the ILEC's network that were to become discrete and separable between areas (or customers) for which unbundling is still required from those for which it is not. In that situation, the forward-looking cost of the separable network element would be determined without reference to the use of that element in other parts of the network. In economic terminology, the cost function for the element in question would have to be separable and non-joint between the "unbundling required" and "no unbundling" areas or customer classes.

B. Network Assumptions

1. General Theory

45. The *NPRM* articulates, for the first time, the FCC's explicit acknowledgement of various internal contradictions that make the existing TELRIC methodology (and UNE pricing rules based on it) so controversial.[35] In particular, the FCC recognizes that:[36]

- The TELRIC methodology currently assumes that the carrier whose cost has to be estimated has a ubiquitous market presence and enjoys all the economies of scale and scope associated with such a carrier; yet, the methodology also assumes a competitive marketplace with multiple competitors that would effectively reduce the market share of the incumbent carrier and prevent it from actually experiencing those scale and scope economies.

- The TELRIC methodology currently attempts to simulate a hypothetical network (based on the latest and most efficient technology available) operating in a competitive market; yet, even extremely competitive markets have never been known to consist of firms that replace their facilities instantaneously with every introduction of new or improved technology.

46. While the FCC seeks comment on these issues, we believe that their clear articulation is a positive first step toward crafting a more accurate methodology for developing costs to support economically efficient UNE pricing. It is exactly this step that leads to the FCC's tentative conclusion that the TELRIC methodology must be revised to account for the "real-world attributes of the routing and topography of an incumbent's network in the development of forward-looking costs."[37] Because of the importance of the FCC's recognition of the problems with the current TELRIC methodology, a more detailed examination of the issues would be worthwhile.

47. Under the current TELRIC methodology, BellSouth (like other ILECs) estimates the forward-looking cost of its unbundled loop with a loop cost model that first constructs a hypothetical scorched node loop network. That is, the model employs only the actual

---

[35] However, see also the *Triennial Review Order*, at ¶¶668-691.

[36] *NPRM*, at ¶¶49-51.

[37] *Id.*, at ¶52.

locations of customers and existing central offices. The minimum spanning road tree algorithm is used to design the optimal layout of the network needed to serve geocoded customer locations. In the process, the model determines the optimal placement of distribution terminals, digital loop carrier ("DLC"), remote terminals ("RTs"), and cross-boxes, and sizes the equipment and cable needed to meet demand. The forward-looking cost estimated from such a model, however, misses several real-world attributes of the network that a reformed TELRIC methodology must include. In particular, such a reformed methodology would need to reflect—to the greatest extent possible—more actual routing within the network, relying on actual cable routes and actual RT, cable box, and distribution terminal locations. We do not suggest that the reformed TELRIC methodology needs to reflect the costs of an *embedded* network. Rather, it should maintain a forward-looking focus but, as the FCC recognizes, reflect routing and topography within the actual network. Only then could the TELRIC methodology expect to reflect the costs of efficient operation within BellSouth's (or any ILEC's) service territory.

48. One of the two main internal contradictions in the existing TELRIC methodology is, as noted above, the assumption of a competitive market with multiple competitors alongside a ubiquitous carrier that is able to maximize the economies of scale and scope. Stated differently, the two scenarios are assumed to hold simultaneously, yet imply two very different rates of utilization of network facilities. A ubiquitous carrier able to serve all, or nearly all, of the market demand will place facilities in the long run in an effort to reach its minimum efficient scale, i.e., maximize the fill factors and utilization rates. On the other hand, a carrier with a ubiquitous *presence* in its service territory (such as because of its COLR obligation) but forced to share the market demand with multiple competitors cannot possibly maintain those high fill factors and utilization rates.[38] Therefore, if the latter scenario is what happens in reality but the

[38] BellSouth's current TELRIC modeling approach very likely exaggerates the utilization rate in another respect. For example, to develop the forward-looking cost of stand-alone UNE loops, BellSouth's model assumes that all voice grade, Centrex, PBX, and coin lines have been converted to stand-alone loops since it is not known ahead of time which loop the CLEC would request. That would imply that *all* such lines are served using central office digital loop carrier terminals ("COTs") that are required for stand-alone, non-integrated loops. This

former scenario is assumed for calculating the forward-looking cost, the natural result would be to underestimate (perhaps seriously) the actual forward-looking cost of the carrier even when operating as efficiently as possible under its COLR obligation.[39]

49. The FCC seeks comment on its proposal "to assume that the cost of an existing element is the cost of that element if it were being replaced today."[40] Under this proposal, the ILEC's cost to provide a UNE "using its existing facilities is the cost that would actually be incurred (including actual placement costs) to place new facilities in the same location."[41] In other words, the ILEC's cost to provide a UNE is to be determined by a "replacement cost" approach.

50. It is particularly important to be clear about what replacement cost means in this context. We interpret it to mean the cost of a replacement network that assumes existing network routes and plant and equipment locations but places facilities that incorporates forward-looking (i.e., currently best available) technology. That is, the ILEC's replacement network *may* contain elements of its existing network if efficient operations call for doing so, but otherwise would replace existing network elements with next-generation or newer technology. The rationale for this approach is as follows.

51. In a forward-looking cost study, the ILEC is assumed to incorporate new technology and facilities in appropriate places within its network in order to operate as efficiently as possible (i.e., subject to its real-world attributes, obligations, and other constraints). That does not, however, mean that the ILEC's future network upgrades would replace essentially *every* part of its existing network; nor does it mean that the ILEC's network at any given time would be anything other than a judicious combination of older and

---

would show up in the cost study as a much higher utilization of COTs than is actually the case. The actual utilization rate for COTs would depend only on the loops that are actually converted to UNEs and terminated at those COTs.

[39] The average or unit cost is the amount of cost experienced per unit of output provided. With higher fill factors and network utilization rates, more output is achieved for a given cost. This leads to lower average cost.

[40] *NPRM*, at ¶53.

[41] *Id.*

newer facilities.[42] Network and technology upgrades not only have direct costs but also result in indirect costs that arise when changes or modifications have to be made in order to make the retained facilities and technology compatible with the newer facilities and technology that are installed. Finally, a real-world ILEC frequently skips one or more generations of new technology and plant and equipment when upgrading its network. Indeed, a plan of continuous and seamless network replacement can actually be more costly and less efficient than one where upgrades occur discontinuously or selectively.[43]

52. We believe that the replacement cost approach—with "replacement" defined in the manner stated above—is a significant improvement over the current TELRIC methodology in that the costs being modeled at least pertain to the ILEC's actual circumstances (including any special or unique circumstances), not to the circumstances assumed for a hypothetical most-efficient carrier.

53. Another proposal for which the FCC seeks comment would "define the relevant network as one that incorporates upgrades planned by the [ILEC] over some objective time horizon (e.g., three or five years), as documented in the [ILEC's] actual engineering plans."[44] This proposal, unlike the FCC's replacement cost proposal that

---

[42] That is, an ILEC may avoid even upgrading to the most recent vintage of *some* of its existing plant and equipment if the cost to do so (including the cost of placement) outweighs the benefit (in terms of efficiency gain).

[43] On this matter, Professor Alfred Kahn has argued:

> In a world of continuous technological progress, it would be irrational for firms constantly to update their facilities in order *completely* to incorporate today's lowest-cost technology, as though starting from scratch, the moment those costs fell below prevailing market prices. Investments made today, totally embodying the most modern technology available currently, would instantaneously be outdated tomorrow and, in consequence, fail over their lifetime to earn a return sufficient to justify the investments in the first place. For this reason, as Professor William J. Fellner pointed out many years ago, firms even in competitive industries would systematically practice what he termed "anticipatory retardation." In other words, they would adopt the most modern technology only when progressively declining real costs had fallen sufficiently below currently prevailing prices to offer them a reasonable expectation of earning a return on those investments over their economic lives.

Alfred E. Kahn, *Letting Go: Deregulating the Process of Deregulation*, East Lansing, MI: Michigan State University Public Utilities Papers, 1998, at 91-92. Emphasis in original, footnotes omitted.

[44] *NPRM*, at ¶54.

assumes instantaneous network replacement, would more closely resemble how a real-world network is actually upgraded over time. We agree with the FCC that "this approach may provide an appropriate middle ground between the hypothetical assumptions required under ... current rules and the replacement cost approach ...."[45] The real issue, however, is whether forward-looking *long run* costs can be developed for all UNEs by rigidly circumscribing the period of time for which costs should be tracked. If 3-5 years are sufficient for an ILEC to be able to adjust both its scale of production and the mix of technologies in the network to enable efficient operation, then that period of time should be acceptable for developing forward-looking costs.

54. The FCC asks whether its tentative conclusion about how it should reform the current TELRIC methodology would compel it "to shift from a long-run average cost methodology to a short-run average cost methodology."[46] We do not believe so. As the FCC notes correctly, the long run is simply "a period long enough for all of a firm's costs to become variable or avoidable."[47] Thus, the question is: does the tentative conclusion—that the TELRIC methodology should account for the real-world attributes of the routing and topography of the ILEC's network—somehow prevent all of the ILEC's costs from becoming variable or avoidable? The answer, simply put, is "no."

55. To the FCC's definition of the long run, we would add that being able to vary the scale of operations is the single most important characteristic of the long run. Of course, changing the scale of operations usually means being able to vary all costs (or even avoid some). The real point of the long run is that it represents the length of time over which a firm can adjust production to move as close as possible to its most efficient level. The current TELRIC methodology imagines a hypothetical network that operates at its most efficient level at all times by being flexible enough to replace instantly its existing facilities and technology when something better or more efficient

---

[45] *Id.*

[46] *NPRM*, at ¶55.

[47] *Id.*

becomes available. This approach "builds in" an instant and total replacement paradigm that, by definition, comports with the concept of the long run. If that methodology were reformed to account for the real-world attributes of an actual network, what would be different?

56. First, the type and layout of facilities may be different for an actual network than for a hypothetical one. At any given time, the installed plant and equipment may be a mixture of different vintages. As remarked earlier, the actual routing of cables and other equipment may be different from that likely for an instantly created hypothetical network. However, the fact that an actual network is not upgraded in the continuous and seamless manner that is assumed for a hypothetical network does *not* mean that an ILEC operating an actual network will not always strive to operate at its minimum efficient scale level of output by adjusting its facilities and technology platforms over time.

57. Second, an actual network may react to changing demands (for service) differently than a hypothetical network. In the latter, the instantly installed and instantly replaced facilities are intended to serve a level of market demand at which scale and scope economies are maximized. An actual network, on the other hand, copes with demand uncertainty (with respect to both the level of demand and customer locations/demand origination points) by maintaining sufficient excess capacity and flexibility in the network. Unlike a hypothetical network that can be instantly reshaped or resized, an actual network accommodates changing demand by means that, from a static perspective, result in lower utilization rates and higher average costs. Again, the actual network strives to reach the minimum efficient scale over time; the difference is that it would likely do so (particularly if it carries the COLR obligation and other constraints) at a different pace and a different level than the instantly upgradeable hypothetical network.

58. Third, by taking account of the topography, routing plans, and structure placement specific to an actual network, the reformed TELRIC methodology would simply "look different" from the hypothetical network which, by construction, obeys only one

imperative, namely, that to minimize the cost to serve a given level of demand. However, being distinct from the hypothetical network in this manner would not make the actual network any less amenable to change and adjustment over time as new technology and plant and equipment become available.

59. In sum, making the reformed TELRIC methodology more consistent with a realistic network that operates under realistic demand conditions would make that network appear different from a hypothetical network in several essential respects. However, from the perspective of a forward-looking cost study, adopting more realistic assumptions for the network would not obviate the goal of operating efficiently and making the changes necessary over time to do so. Thus, the mere fact that an actual network takes longer than the hypothetical network to transition from one scale of operations to another does nothing to alter the long run nature of the cost methodology. Since the long run is not a fixed period of calendar time, it is possible to preserve the long run nature of the methodology by simply considering the necessary span of time over which an actual network evolves to regain peak efficiency for serving the level of anticipated demand.

60. The FCC seeks comment on whether assumptions made about an actual network should reflect decisions made by CLECs regarding their networks.[48] The assumptions, e.g., about depreciation and fill factors, should reflect how the ILECs costs are affected by anticipated CLEC decisions, because the costs to be estimated are the costs of the ILEC. Moreover, we believe that strategic interdependence between the network decisions of ILEC and CLECs can arise from both the demand side and the supply side. Consider first the demand side. When a small number of carriers compete to serve demand in a particular area (such as a collection of contiguous customer locations), they are likely to recognize their demand-side interdependence and draw up service plans accordingly. That interdependence is, of course, likely to be different when the competing carriers are roughly equal in size than when one is dominant (in

[48] *Id.*, at ¶56.

terms of market share) and the others represent a competitive fringe.[49] For example, an ILEC with COLR obligations that require it to maintain a ubiquitous network may plan to serve "residual" demand, i.e., the demand left over in the market or service area in question once its competitors (unfettered by regulation or other obligations) have decided how many units of service to provide.[50] In these circumstances, the ILEC's plans to adjust and evolve its network over time certainly cannot arise in isolation from (at least the consequences of) the decisions made by its competitors.

61. On the supply side, the combination of technological standardization and competition imperatives (such as the need to minimize costs or maximize profits) may (but need not) eventually force a convergence of the technology and service delivery platforms chosen by different carriers. Thus, at any given point in time, an ILEC may make different technological choices than would a competing CLEC but, over time, the distinctions are likely to be blurred as each responds or adapts to whatever provides the other a temporary comparative advantage. This type of convergence would likely extend to retail services and service packages. As one carrier introduces a new service or service package that stimulates demand from customers, its competitors may feel compelled to provide matching services or service packages. This, in turn, can drive the technology choices that competing carriers make over time.

---

[49] Economic theory suggests several forms in which strategically interdependent carriers could compete. First, the carriers could choose their outputs based on their expectations of the outputs of their competitors. If these choices happen simultaneously, then the Cournot model of oligopolistic firm interaction applies; if, on the other hand, they happen sequentially, then the Stackelberg model applies. Alternatively, the carriers may choose their prices simultaneously, a form of interdependent competition captured by the Bertrand model of oligopoly. Just how feasibly the ILEC may "choose" either output or price while subject to regulation is an open question. In addition, the form of interdependence and its market outcomes may well depend on whether the ILEC and CLECs offer identical or differentiated services. In the dominant firm-competitive fringe model of competition (perhaps a fair representation of the present state of competition in local exchange markets), market structure plays an additional role depending on whether or not there are significant sunk costs of entry and exit. The lower those sunk costs, the better the prospects for the competitive fringe firms to exercise some measure of discipline on the dominant firm's ability to influence or set the market price. See, Kahn *op cit.*, at 56-57, for reasons why the 1996 Act's provision for resale and UNE-based competitive entry has already produced just such a market—frequently called "contestable"—in the local exchange. For a detailed discussion of the various theories of oligopoly and strategic competition, see W. Kip Viscusi, John M. Vernon, and Joseph E. Harrington, Jr., *Economics of Regulation and Antitrust*, 2nd edition, Chapters 5 and 6.

62. How all of these features of demand or supply-side strategic interdependence would translate into specific assumptions about the ILEC's network is not as clear. However, beyond the demand levels to be used to calculate TELRIC, other factors such as fill factors, utilization rates, and network design may all need to take account of the network decisions of CLECs.

63. The FCC seeks proposals for an efficiency standard that "the Commission should use in order to achieve UNE prices that send the correct economic signals regarding investment, while still achieving the necessary level of cost recovery."[51] There is no single, directly observable benchmark that would serve as an efficiency standard for FCC's purposes. Instead, efficiency (or inefficiency) must be inferred from the actions over time of the ILEC and CLECs in the market. In theory, the ILEC may be presumed to be operating efficiently if the following conditions hold:

- It is observed to be upgrading its network and deploying cost-minimizing technology and practices in accordance with its forward-looking engineering guidelines and in anticipation of changes in market conditions. [This is akin to the conditions of *technical* and *dynamic* efficiency.]

- In the event that it is experiencing declining real costs to provide UNEs, it is observed to be passing along the cost savings in the form of lower UNE prices. [This is akin to the condition of *allocative* efficiency.]

- CLECs continue to lease UNEs from the ILEC at the *economically proper* prices, i.e., the prices that reflect TELRIC calculated according to the reformed methodology. [Given this threshold, the ILEC would not be considered to be operating at the most efficient level if CLECs show an inclination to invest in their own facilities instead because they expect to do better by doing so.][52]

---

[50] In this scenario, the dominant ILEC's price is "set" (by whatever means, including regulation) and the competitive fringe CLECs are "price takers," i.e., they try to provide as much service as possible at the going price.

[51] *NPRM*, at ¶57.

[52] The important difference between such a threshold and the conditions currently observed in the local exchange market is that the current TELRIC methodology leads to lower UNE prices than would be charged by an efficient ILEC whose *actual* network is used to model costs. Thus, artificially low UNE prices make a mockery of any efficiency standard and destroy almost all incentives for CLECs to invest in their own facilities. Clearly, a corollary of the FCC's tentative conclusion is that the efficiency standard itself, like TELRIC, must reflect the real-world attributes of actual networks.

64. The last of these conditions must be tempered, however, with the realization that the efficiency standard that applies to an ILEC—which does not start its network from scratch (or replace it instantaneously) and is subject to the COLR and other obligations—cannot be the same as that which would ordinarily apply to a CLEC that does start from scratch. Therefore, even when the ILEC is operating at peak efficiency (subject to its constraints), there could still remain some room or incentive for a CLEC—operating under a different efficiency standard—to invest in its own facilities. Despite this, however, if CLECs are observed to make widespread use of UNE-P (and little of their own facilities), then the conclusion must be that, whatever the proper efficiency standard, the UNE prices that are currently being set (and the TELRIC behind them that are currently being calculated) are sending out improper signals to the CLECs regarding entry and investment.

65. As a follow-up to the issue of an efficiency standard, the FCC asks whether it should preserve the principle that CLECs should not have to pay UNE prices that compensate ILECs for past inefficiencies.[53] As a principle, this proposition is unexceptionable. Indeed, UNE prices must be based on forward-looking costs, and this rules out any role for the ILEC's historical performance—whether efficient or not—in the setting of those prices. Care must be taken, however, in giving meaning to the term "past inefficiencies." The reformed TELRIC methodology contemplates modeling cost for an actual network along with its real-world attributes. For reasons stated earlier, such a network, at any given point in time, contains vestiges of successive generations of technology and managerial practices. Thus, unlike the hypothetical network for which the current TELRIC methodology estimates costs, there can be no "black or white" break between the ILEC's past (and present) and its future. This means that there should be no rush to declare that TELRIC (and UNE prices) based on the FCC's proposed reformed methodology necessarily contains "past inefficiencies" simply because an actual network reflects, in part, choices made in the past. There must be sufficient demonstrable evidence of *actual* past inefficiencies (such as, e.g., the failure

[53] *NPRM*, at ¶58.

of an ILEC, when the opportunity presented itself, to adopt technology or management practices or install facilities that were *known in the past* to lead to more efficient operations) before any objection is raised to UNE prices based on the reformed TELRIC methodology.

66. This brings us to the FCC's concern about using any presumption of ILEC efficiency in state proceedings in which UNE prices are set, and about the evidence that CLECs would have to produce to rebut that presumption.[54] Because of the lack of a single observable benchmark that could serve as an efficiency standard, the (rebuttable) presumption of ILEC efficiency is an acceptable place to begin. Above, we outlined three possible conditions by which some thresholds could be constructed to separate efficient from inefficient operations. The usefulness of a presumption of efficiency is buttressed by the fact that most ILECs (and all of the major ILECs) have, for more than a decade now, been subjected to some form of incentive regulation (principally in the form of indexed price regulation). The pervasive use of productivity offset factors at both interstate and intrastate levels has forced ILECs to reduce their costs significantly over time because of almost automatic reductions in their service prices subject to price caps.[55] In addition, ILECs have commonly had their prices for basic local exchange services frozen for several years (even at below-cost levels), thus leaving them no choice but to keep their costs in check as well. Although the initial (or "going in") prices subject to such caps and freezes were not necessarily at efficient levels when the ILECs first transitioned from rate-of-return regulation to price regulation, years of operation of indexed price cap formulas have surely forced ILECs to bring their costs in line with the capped or frozen prices that they have been allowed to charge. Moreover, under this form of regulation, because of the potential to realize increased profits (or at least avoid losses), ILECs have had a strong incentive to lower their costs regardless of the starting point for their incentive regulation plans. Based on this, we conclude that the presumption of ILEC efficiency is a reasonable starting point for

[54] *Id.*

[55] In an era of prolonged low rates of nationwide inflation, indexed price cap plans with "high" productivity offsets would have more often forced price caps lower, rather than higher.

present purposes. To rebut this presumption, CLECs must be able to demonstrate past ILEC behavior or choices that could be reasonably surmised to have run counter to efficient operation.

67. A related question posed by the FCC concerns the need to ensure that CLECs that request UNEs from ILECs continue to receive the benefit of efficiency gains in those ILECs' networks, even after the proposed reformed TELRIC methodology is adopted.[56] One possible course of action would be to set economically efficient prices for UNEs based on today's costs of an efficiently operating ILEC, and subject those prices to direct price regulation (such as through indexed price cap formulas or more flexible banded variation formulas). Alternatively, efficient initial prices for UNEs could be found through the use of the efficient component pricing rule ("ECPR").[57] Any distortion in those initial prices is unlikely to survive the rigid discipline imposed over time by price regulation and the built-in incentive to reduce costs. As UNE prices are updated in accordance with the formulas adopted for price regulation, the constant downward pressure on prices would compel the ILEC to constantly trim its costs. In this manner, all efficiency gains would be passed through to CLECs in the UNE prices they pay.

68. As for the FCC's concern that the change in network assumptions under the proposed reformed TELRIC methodology would lead to higher UNE prices,[58] we believe that such a development would enhance, rather than harm, efficiency. As noted already on several occasions, the principal consequence of the defective current TELRIC methodology is that it produces UNE prices below efficient levels that, in turn, send

---

[56] *NPRM*, at ¶58.

[57] The FCC notes that ECPR rates for UNEs would be based on the ILEC's incremental cost inclusive of opportunity cost (typically measured by forgone profits). *NPRM*, at ¶34. However, the FCC also argues that the ECPR approach to setting UNE rates would "discourage competition because it relies on prevailing retail prices (which are not cost-based and may reflect monopoly rents) ...." *Id.*, at ¶35. We believe that even if initial UNE prices set by the ECPR approach are likely, as the FCC puts it, to "reflect monopoly rents," subjecting those prices to price regulation would squeeze out the undesirable monopoly rents in due course. In any event, initial prices set in that manner are unlikely to be any more inefficient, qualitatively speaking, than current UNE prices based on the existing TELRIC methodology.

[58] *NPRM*, at ¶59.

out distorted economic signals to guide CLEC entry and investment. The widely observed skew in CLECs' preference for UNE-P over investment in their own facilities is a direct consequence of that distortion. In addition, where even the improperly calculated UNE prices have proved to be "too high" relative to prevailing prices for flat-rated single line residential local exchange service, CLECs have simply chosen not to serve potential customers for that service. In some states, regulators have compounded that distortion by further lowering UNE prices (without any sound cost basis for doing so) rather than by raising the politically sensitive residential local exchange prices. This "don't raise the bridge, lower the river" approach that some regulators have adopted in response to inadequate CLEC entry to serve residential local exchange customers has further aggravated the distortion in UNE prices and, consequently, in the entry and investment decisions of CLECs.[59]

69. The appropriate corrective measure in this context is to get the UNE prices (and TELRIC on which they are based) right. This calls for calculating TELRIC according to the reformed methodology, setting UNE prices efficiently on the basis of TELRIC so calculated, and then allowing CLECs to make efficient "make-or-buy" decisions. If this means that UNE prices should rise—and they well could following the use of the reformed TELRIC methodology—then society (i.e., customers and service providers alike) would benefit from the efficiency gains that would come from supply and demand choices guided by economically proper price signals. The overriding concern should always be with *efficient* competitive entry and investment, not just *any* entry and investment. Higher (but efficient) UNE prices could, in fact, lead to greater investment by CLECs in their own facilities and by ILECs as well, and promote the promise of facilities-based competition held out by the 1996 Act. The FCC asks what

[59] See, e.g., *Verizon New Jersey v. The New Jersey Board of Public Utilities*, United States District Court, District of New Jersey, Civil Action No. 02-5353 (JAP) Amended Complaint, November 26, 2003. According to Verizon New Jersey: "On November 20, 2001, the Board... [adopted] UNE rates that were substantially below the levels found to be TELRIC compliant in the Board's December 2, 1997 Order. ... The Board made clear that it was setting UNE rates at levels the Board felt would stimulate additional entry by competitors rather than the levels necessary to compensate Verizon NJ for its costs. The Board stated that the rates for UNEs required to provide local telephone service to residential customers would be lower than the rates Verizon NJ charges its residential customers for local telephone service."

the consequence of higher UNE prices would be if "it is not economically feasible for a [CLEC] to build its own facilities?"[60] It is unclear why a CLEC would find itself in that predicament. But, if that CLEC found itself unable to invest in its own facilities anyway, it would surely have even less of an incentive to try when UNE prices are artificially low. Entry *at any cost* by such a CLEC would not be beneficial to society.

2. Specific Network Inputs

a. Network Routing and Construction

70. Given the new network assumptions in the reformed TELRIC methodology, the FCC asks "how critical are the locations of existing rights-of-way, existing poles, and existing conduit (all of which are located on existing roads and routed around existing natural obstacles) for all wireline carriers (incumbents and new entrants) when new facilities are built?"[61] Taking into account these real-world features of an actual network is exactly the step in the right direction. At present, TELRIC calculated for a hypothetical firm disregards these features and produces costs that *no* carrier, no matter how new or efficient, could possibly match. No reasonable goal for UNE pricing—let alone one designed to promote economic efficiency—can possibly be served by making network assumptions that have no basis in reality.

71. As a consequence, when the FCC asks whether it should "modify the 'scorched node' theory and adopt routing assumptions more closely tied to an ILEC's existing network,"[62] our answer is a resounding "yes." The scorched node approach embedded in the current TELRIC methodology was a compromise adopted in the *Local Competition Order* to avoid adopting an even more unrealistic cost methodology that was based on the "scorched *earth*" principle.[63] Scorched node essentially does little else to model the actual network than simply recognize existing customer locations and

---

[60] *NPRM*, at ¶59.

[61] *Id.*, at ¶63.

[62] *Id.*, at ¶64.

[63] *Local Competition Order*, at ¶685.

the ILEC central offices designed to serve them. The actual routing and layout of plant and equipment (besides switches) are influenced by more than simply the customer locations assumed in the scorched node approach. Rights-of-way and topographical peculiarities are also important determinants of the routing and placement of network facilities. Failing to account for these features cannot be consistent with the FCC's desire to model the forward-looking cost of an actual ILEC network operating efficiently.

b. Technology

72. The FCC states that "it is unlikely that any carrier, no matter how competitive the marketplace, would deploy new technology instantaneously and ubiquitously throughout its network."[64] We agree. For reasons stated earlier, we believe that it is more realistic to assume that an ILEC's network, unlike that of a CLEC built from scratch, contains vestiges of successive generations of technology. Some parts of the network may be flash cut over to new technology, while others may not be. Every ILEC has to determine what combination of technologies is most likely to minimize its costs to provide service ubiquitously over differing terrain, population characteristics, and competitive conditions. There are examples of older technologies still being deployed today even though newer versions are available. One example would be the use of older digital trunk terminating equipment in digital switches. Because of the larger incremental capacities of the newer versions and higher unit costs associated with them, the older technology may be more economical in some cases. To the extent that an ILEC plans to continue deploying an "older" technology that can deliver the needed capacity and is suited to certain peculiar features of its service territory, it should be legitimate to include that technology in the mix of plant assumed in that ILEC's forward-looking cost study. Indeed, to do otherwise would lead to higher costs if the cost study were done correctly.

---

[64] *NPRM*, at ¶68.

73. Given its goal to replicate the results of a competitive market, the FCC asks whether there is evidence about diffusion rates of new technology in competitive as opposed to monopoly markets that could prove helpful for achieving that goal. The FCC raises this issue in a broader context regarding factors that influence decisions about technology deployment.[65] We agree that there is evidence that "faster deployment times correlate with more competitive markets."[66] However, this observation is completely consistent with the basic pattern of deployment of new technologies over time that we have described above, i.e., the pace of deployment of new network technologies and services has increased as competition has increased in the industry, but the pattern remains one in which new technologies are deployed over time, not instantaneously. This is evident from the pattern of diffusion of digital transmission technologies in the wireless mobile industry in this country. Even today, about nine years after they first began to phase in digital systems, cellular carriers still rely on analog systems to serve some customers and to provide roaming across otherwise incompatible digital systems.[67]

74. Deploying new technology in capital-intensive industries requires a trade off between the savings (and/or revenue gains) to be achieved and the prospect that even greater efficiencies may be attained with newer generations of equipment. In a world of continuous technological progress, it would be highly inefficient for firms to ignore their existing facilities or update their facilities instantaneously, in order to incorporate completely today's lowest-cost technology as though starting from scratch. An efficient carrier operating in the real world attempts to minimize its costs over time by making rational and reasonable decisions about serving a growing, uncertain demand

---

[65] *Id.*, at ¶70.

[66] *Id.*, fn. 113.

[67] See Cellular Telecommunications and Internet Association, Mid Year 2003 Survey, "Digital Migration Keeps a Steady Pace—92 Percent of Reported Subscribers Are now Digital." According to AT&T's 1998 10-K, "at present, over 50% of Wireless Services' customer base is using digital service. ... Analog and digital service are offered in 850 megahertz markets and digital service in 1900 megahertz market. ... Analog networks provide the only common roaming platform currently available throughout the United States."

and meeting regulatory and market obligations regarding service quality. If competitors can deploy new services or the same services at lower costs, particularly if the incumbent fails to do so, then there will be greater pressure to accelerate deployment of new technologies into the network. Thus, the primary implication of the positive association between the level of competition and the deployment of new technology is that more rapid depreciation must be assumed than has been done traditionally in regulated settings.

c. Structure Sharing

75. Recognizing how difficult it has been for states to develop structure sharing percentages, the FCC seeks guidance on the matter with the proviso that it be consistent with its proposed reformed TELRIC methodology.[68] In state proceedings, structure sharing percentages have traditionally been among the most contested issues, primarily because actual networks differ widely on how structures are placed and shared with other uses or entities. The feasibility of such sharing is dictated by both economics and topography—both factors subject to substantial variation. Additionally, due to considerations about work coordination, safety, and the space available, significant sharing of construction costs associated with supporting structures is very unlikely. Furthermore, coordination of sharing efforts with other utilities is problematic. For example, unless the construction plans of other utilities coincide with those of the ILEC, the sharing percentages need not increase significantly over those that the ILECs experience today.

76. Some generalizations may, however, be possible. The actual incidence of sharing with other parties of underground excavation activities or the costs of underground construction is very low. Also, ILECs rarely, if ever, place conduit jointly with other entities, although they may lease conduit space. Non-telephone utilities like cable and power companies already have their facilities—whether using shared structures with ILECs or not—in place. From a forward-looking perspective, therefore, significant

[68] *NPRM*, at ¶72.

sharing of structures is only likely to happen when more CLECs start to build their own facilities extensively in ILEC service territories and express a need to share structures with host ILECs. Even then, these opportunities, especially for buried and underground placements, would be limited and only present themselves when both the ILEC and the CLEC place new facilities along a route at exactly the same time. Unless and until that happens, however, actual sharing of buried and underground excavation costs is unlikely to be significant. Additionally, factors such as timing, safety, work coordination, and space availability would remain valid concerns. In other words, CLECs (and, to the extent that they accept CLEC arguments, state regulators) tend to exaggerate the degree to which structure sharing actually occurs and, in the process, drive down artificially the estimates of actual forward-looking costs. With the FCC's proposal to apply the reformed TELRIC methodology based on the real-world attributes of actual ILEC networks, and given the presumption of efficient operations by ILECs, it would be appropriate to use the ILECs' actual forward-looking structure sharing percentages in future cost studies for UNEs.

d. Fill Factors

77. In a similar vein, the FCC seeks guidance for states regarding another practical matter—the fill factors that should be assumed in forward-looking UNE cost studies.[69] As the FCC explains, a fill factor is the "percentage of the capacity of a particular facility or piece of equipment that is used on average over its life."[70] In general, the fill factor has an inverse relationship with average cost, e.g., higher fills translate into lower average cost (as "lumpy" investment spending on plant or equipment is divided by larger quantities, or fills, actually used of the plant or equipment).

78. The FCC seeks comments specifically on how the ILEC's unique COLR obligation is likely to influence forward-looking fill factors in an actual network.[71] As with structure

[69] *Id.*, at ¶74.

[70] *Id.*

[71] *Id.*

sharing percentages, assumptions about fill factors have been controversial in past state proceedings to set UNE prices. Given the current TELRIC methodology's mandate to construct costs only for a most efficient (i.e., least-cost) hypothetical network built instantaneously from scratch, CLECs have advocated that facility and equipment utilization rates in ILEC cost studies be set at levels that substantially exceed the ILECs' actual fills. The FCC's readiness now to accept actual fill inputs in ILEC cost studies would invalidate the approach long advocated by CLECs. Most importantly, bringing ILECs' real-world attributes into cost studies would necessarily have to acknowledge the COLR obligation which requires ILECs to maintain more capacity than would be likely or necessary for efficient operations without that obligation. In view of this fact, and given the FCC's proposal to adopt the reformed TELRIC methodology, an ILEC's forward-looking fill factors in its actual network should be regarded as dispositive for establishing forward-looking UNE costs.

79. The FCC also asks whether it would be relevant if CLECs routinely operated facilities at higher or lower fills.[72] This fact is not likely to be directly relevant because, without the COLR obligation and with the freedom to pick and choose customers or markets to serve, CLECs do not have to install capacity and experience costs in the same manner as the ILEC with the COLR obligation. CLECs can, in fact, more closely pursue "just-in-time" procedures for growing their operations. That is, CLECs can react to growing or changing demands in a more carefully calibrated way, through capacity increments that do not oblige them to maintain significant excess capacity or the lower fill rates experienced by ILECs. Also, to the extent that they are unable to make calibrated capacity changes (because of the lumpiness of capacity increments), CLECs would retain the flexibility to use UNEs (or, if necessary, even resale) to serve what they consider to be temporary surges in demand, reserving any augmentation of their own facilities for demand increases they consider to be more stable or permanent.

---

[72] *Id.*

80. Finally, the FCC asks whether carriers in competitive markets can be expected to reduce their prices in order to achieve higher actual fills.[73] Lowering *retail* prices in order to increase the utilization of existing capacity can prove to be a double-edged sword for ILECs. It is, in theory, possible for fills to be increased by stimulating demand through lower prices. The demand for plant and equipment is derived from the demand for retail services; hence, the stimulation of the latter is likely to translate into stimulation of the former as well. However, for retail services with price-inelastic demands (such as is known to be true of basic local exchange services), lower retail prices may simply result in decreased retail revenues. So, even if the ILEC is successful in lowering its average cost by this tactic, what it would end up earning *at the margin* is not clear. It is possible for the ILEC to become, in fact, worse off than before, particularly given that certain residential basic exchange services are already priced low in relation to underlying incremental cost (and often below that cost).

e. Switch Discounts

81. The FCC asks whether to base the price of unbundled switching on (1) an entirely new (or replacement) switch, (2) growth equipment that increases the capacity of an existing switch and helps to meet additional demand, (3) technology upgrades to existing equipment that increases capacity or performance, or (4) some combination of all three.[74] The answer is to first determine whether the switch component is purchased specifically for a new (or replacement) installation or to augment existing switch capacity. Typically, new (or replacement) installations qualify for steep discounts. In contrast, "growth" equipment or technology upgrades that augment existing capacity or performance qualify for lower discounts. To calculate the forward-looking cost of unbundled switching, it would be appropriate to use a blended discount that reflects the relative proportions of new (or replacement) installations and equipment purchased to augment existing capacity or performance.

---

[73] *Id.*, at ¶75.

[74] *Id.*, at ¶76.

82. We agree with the FCC that the high modularity of switches makes it convenient for ILECs to add capacity to existing switches over time. Rather than install a switch that qualifies for the high new-switch discount, but also contains significant excess capacity, it is rational to make incremental capacity purchases over time to accommodate demand growth.[75] This strategy makes particular sense in competitive markets in which uncertainty surrounds the prospects for sustained growth of demand over time. Having to maintain significant unused capacity (or low utilization rates) for long periods of time (such as if anticipated increases in demand do not materialize) can be relatively expensive even with high discounts on new installations. As switching capacity is augmented over time to meet increased demand or performance needs, the ILEC is also able to maintain a relatively high utilization rate and minimize its average (or per-line) switching cost. For this reason, in competitive markets with demand uncertainty, it makes more sense to base the ILEC's unbundled switching costs on the prices that an efficient incumbent or entrant would pay for switching equipment based on purchases of both new and growth equipment.

83. In the ultimate analysis, today's forward-looking cost of switching deployed by an ILEC operating efficiently should reflect the relative proportions of new and growth equipment. This combination of purchases of new and growth equipment ultimately determines the switch price discounts assumed in ILEC cost studies. It is appropriate to model the discount structure offered currently by vendors (and reflect how actual purchases are efficiently made) by applying a blended discount rate to switch components that can be purchased either as new or as growth equipment and a higher discount rate to switch components that are normally purchased for the initial installation. This approach reflects the manner in which vendor contracts are designed and switching equipment is bought. There is no compelling reason to make the elaborate calculations (proposed by the FCC) that are based on projections of demand growth over the life of the switch.

---

[75] *Id.*, at ¶78.

C. Cost of Capital

84. We understand that BellSouth is filing the Declaration of Dr. Randall Billingsley to address the proper approach to calculating the cost of capital for an ILEC's TELRIC studies. The opportunity cost of capital represents an important source of cost (not of "profit") to the ILEC that must be taken into account before any judgment is made about the ILEC's economic profitability.

85. We offer comment on several economic issues that the FCC has raised regarding the cost of capital. The FCC seeks comment on whether tying UNE prices more closely to the ILEC's existing network implies that state regulators should also calculate the cost of capital based on the existing competitive risks associated with that network.[76] The concern is that, if the FCC no longer requires the use of the hypothetical most-efficient network operating in a competitive market, then the nature of the risks faced by an actual ILEC's existing network would be different. For example, the COLR obligation itself introduces the risk of unrecoverable network assets in the event that anticipated demand does not materialize. Other regulatory constraints (such as those that pertain to tariffing and noticing requirements for ILECs but not to their competitors) introduce other business risks and reduce the opportunity for ILECs to capitalize in a timely manner on pricing innovations. These risks are not taken into account for the hypothetical network. Importantly, the additional risks associated with the existing network are not dissipated under facilities-based competition from unregulated CLECs.[77] Stated differently, there are several reasons to believe that the competitive and operational risks of an actual ILEC's network are higher than those of a hypothetical network operating almost without friction in the market.

---

[76] *Id.*, at ¶84.

[77] For example, a CLEC has the freedom and flexibility to deploy its facilities only in areas in which natural events are not likely to interfere with its operations or raise its costs. An ILEC with a COLR obligation, on the other hand, has no choice in the matter. Similarly, a CLEC may change prices for its services in quick response to changing market conditions, but has the ability (through regulatory litigation) to retard or render ineffectual an ILEC's attempts to do the same.

86. The FCC asks whether supplying a given product is always more risky in a fully competitive market than in a market in transition from monopoly to competition.[78] Which is riskier is not, *a priori*, clear. On one hand, risks could possibly be higher in fully competitive markets because of the greater uncertainty about the outcomes of investment or other decisions. On the other hand, a regulated ILEC, in the process of making the transition to a competitive market, faces risks that other competitors do not until the transition is complete. These risks stem from the loss of their most lucrative customers to cherry-picking CLECs and continued asymmetric regulatory requirements, such as the COLR obligation and the prospects of stranded investment, less pricing flexibility than that available to competitors, and a reduced ability to choose markets and customers to serve. In the current transitional, regulated competition stage of telecommunications, risks are enhanced because ILECs must make their network elements available to competitors at non-compensatory UNE prices and without being able to sign long-term contracts with CLECs. Indeed, financial analysts have identified UNE-based competition as posing a significant risk to ILECs.[79] Facilities-based competition enhances this risk by increasing the prospect that an ILEC may not be able to fully recover the costs of its investments in providing UNEs if and when competitors migrate customers to their own networks.

87. The FCC also asks for comment on "the role of fixed and sunk costs, assumptions about the level and kind of competition, and entry strategies of competitors in affecting risk and cost of capital of incumbent carriers."[80] Fixed and sunk costs are both "fixed" in the sense that they do not vary with the quantity of output, but they are different in one important sense: the fixed cost is reversible or recoverable, but the sunk cost is not. This distinction between a fixed cost and a sunk cost is not particularly important when an ILEC faces no uncertainty over the future of the asset on which that cost is

---

[78] *NPRM*, at ¶86.

[79] See, e.g., the Merrill Lynch report, *The Telecommunicator: Telecom Act Seven Years On—The UNE Shock Wave Belatedly Reverberates Around the RBOCs – and How!* Also see the contention by Marc Crossman—that resale and UNE-based competition is putting growing pressure on ILECs like BellSouth—in "Company Report: BellSouth," Telecommunications Wireline Services Equity Research, March 15, 2002, at 4.

[80] *NPRM*, at ¶86.

incurred.[81] In the past rate-of-return environment, a regulated ILEC that faced no intense competition never had to worry about whether that asset was likely to lie fallow because the retail customers it served chose to defect to a competitor that leased that asset or a competitor that chose to deploy its own facilities. Hence, an ILEC in that situation would have had every opportunity to have that cost admitted into its rate base and recovered, like all of its other costs, through its authorized rate of return. When competition occurs or the ILEC is subject to incentive regulation (or both), however, the distinction between a fixed cost and a sunk cost becomes more significant. Under current UNE pricing rules, the ILEC is obliged to lease its network elements to its competitors at prices that do not sufficiently account for the risk that it would be unable to recover the costs of those elements if the competitor were to stop leasing them. That is because the competitor's decision to use its own facilities instead to serve customers would presumably leave at least a portion of the ILEC's facilities unused. This clearly amounts to a subsidy from the ILEC to the CLEC, which has the consequence of dampening the incentive of the CLEC to invest in its own facilities and of the ILEC to upgrade its network or develop new services. The presence of sunk costs in an uncertain environment implies that the ILEC should incorporate an appropriate risk premium into its cost of capital. This would imply higher UNE prices than ILECs with the COLR obligation are currently allowed to charge.

88. The FCC raises two additional questions related to the issue of sunk costs and the cost of capital. First, it asks whether, when calculating the cost of capital, any consideration should be given to any increased risk of stranded investment due to the use of month-to-month contracts and, if so, how that risk should be quantified?[82] This question implies an important recognition on the part of the FCC, namely, that when an ILEC incurs sunk costs to provide UNEs to requesting CLECs, it runs a higher risk of failing

---

[81] See the discussion of this distinction with and without competition in Jerry A. Hausman,, "Regulated Costs and Prices in Telecommunications," in Gary Madden (ed.), *The International Handbook of Telecommunications*< Volume II, Northampton, MA: Edward Elgar Publishing, at 199-233.

[82] *NPRM*, at ¶87.

to recover those costs when CLECs make their purchases on a month-to-month basis, rather than through long-term contracts.

89. The FCC also asks whether the use of economic depreciation would eliminate the need to compensate separately an ILEC for any additional risk of stranded investment.[83] The answer to this question is "no." Economic depreciation is intended to generate a matching stream of revenue and cost over the useful lifetime of a durable asset. Thus, having first determined the duration of an asset's economic life, the next step is to allocate the cost of that asset (in some way) over that lifetime. Economic and technological obsolescence rates affect asset lives but not the method of depreciation (e.g., straight line or accelerated depreciation) itself. In essence, economic depreciation enables a firm to recover its investment over time with the help of revenues generated from that investment. The cost of capital, on the other hand, acts like the price of an input (here, capital) for deciding whether an investment should be made in the first place. The signal to proceed with the investment depends on the opportunity cost of capital, not on any subsequent method of recovering the cost of the investment over the useful lifetime of the underlying asset. The greater uncertainty associated with month-to-month contracts must be accounted for in the cost of capital because investors demand higher returns for more risky investments. Thus, not only is it important to establish the correct policies for both economic depreciation and the cost of capital, it is even more important not to employ one in the service of the other.

D. Depreciation Expense

1. Asset Lives

90. The FCC asks whether its past reluctance to adopt financial reporting asset lives that follow Generally Accepted Accounting Principles ("GAAP") remains justified in the context of setting prices for UNEs.[84] Presently, the asset lives allowed ILECs for

---

[83] *Id.*

[84] *Id.*, at ¶98.

depreciation purposes are generally based on regulatory lives, which are not GAAP-based. We believe that this is an appropriate juncture for a transition to GAAP-based lives. Faced with a continuing COLR obligation within an increasingly competitive and risky market setting, ILECs must take better account of economic and technological obsolescence. In general, GAAP-based asset lives are best suited for conducting depreciation in such a context. In fact, if those lives are so regarded for financial reporting under competitive conditions, they should also be particularly relevant for planning capital expenditures under those very market conditions. Indeed, to use anything other than those lives would be inconsistent with the claim that the results reflect economic costs.

91. Appropriate economic lives for different asset groups are determined utilizing several methods. First, company-specific planning data can be used to assess the near-term portion of the life cycles of most assets, particularly when those assets are near the end of their life cycles. Second, the life of a physical asset can be assessed through an analysis of historical mortality, i.e., an examination of the effect of wear and tear with usage, deterioration with age, and accidental removal, breakage, or damage. However, the impacts of technological substitution cannot be captured adequately by these two methods alone. Life cycle analysis techniques that take account of technological substitution and obsolescence represent a third method for determining the economic lives of physical assets. Prescribed regulatory lives do not account adequately for economic and technological obsolescence and are, hence, fundamentally unsuited for depreciation in a competitive market setting. GAAP guidelines, in contrast, are most likely to produce economic asset lives because they take into account how assets are used, the wear and tear that assets experience, and how technological change reduces the economic value of existing assets. GAAP lives are used for the systematic and rational recovery of capital investments and reporting financial performance to the Securities and Exchange Commission.

2. Depreciation Rate

92. The FCC asks whether expected changes in equipment prices can best be captured via depreciation expense adjustments and also notes that "the levelization of rates that occurs in most cost models appears to be inconsistent with the concept of adjusting UNE prices to reflect anticipated changes in equipment prices."[85] In a paper released concurrently with the *NPRM*, David M. Mandy and William W. Sharkey explain that the UNE pricing based on the current TELRIC methodology leads to *under*-recovery by an ILEC when equipment costs are declining.[86] Specifically, "if investment costs are falling over time, and the period between TELRIC price adjustments is shorter than asset lives, then traditional TELRIC pricing will not permit incumbents to recover the cost of their investment."[87] Mandy and Sharkey conclude that "a correction factor must be applied to the TELRIC price path in order for revenues to exactly recover investment cost, including the target rate of return."[88] Although this correction factor appears to provide a useful and necessary adjustment to the proxy cost approach, it is not sufficient, however, to address *all* of the limitations of the proxy cost model's approach to depreciation and investment costs and the tendency of such a model to produce excessively low prices for UNEs.

93. The FCC recognizes that "the cost models typically assume that the entire investment in the network is made at a single point in time, and that no additional investment is made in subsequent periods. This same process is then repeated each time a state commission sets new rates."[89] Mandy and Sharkey, as noted above, explain that these factors imply that TELRIC prices may not be high enough:

---

[85] *NPRM*, at ¶¶104-106.

[86] 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. We refer to this paper hereafter as *Mandy-Sharkey*.

[87] *Mandy-Sharkey*, at 1.

[88] *Id.*, abstract.

[89] *NPRM*, at ¶105.

> More specifically, the TELRIC computation ignores the impact of future cost reviews on prices during the life of the asset, instead incorrectly assuming the initial levelized TELRIC price will continue to be received for the entire life of the asset. Thus, while the TELRIC price computed in year 0 was computed to fully compensate the firm for its investment costs made in year 0, it does so only if maintained throughout the life of the asset. If prices are reduced in future years due to the lower investment costs at future TELRIC cost reviews, then the resulting price schedule no longer fully compensates the firm.[90]

Hence, Mandy and Sharkey call for the computation of a "correction factor based on estimates of the rate of change of investment cost and the expected time between TELRIC reviews. Corrected TELRIC prices rise or fall at the same rate over time as underlying investment cost, and allow the firm to earn its target rate of return no matter how frequently price reviews are conducted."[91] Although, they do not apply their adjustment factor to all of depreciation *per se*, their finding does concern one source of economic depreciation, namely, expected declines in investment costs over time.

94. While this finding by Mandy and Sharkey is significant to how an ILEC's UNE prices should be set when investment costs decline (or otherwise change), there are other problems associated with changing investment costs that they do not address. More specifically, the correction factor proposed by Mandy and Sharkey does not address all of the factors that drive economic depreciation and the attendant potential problem of under-recovery. First, their approach attempts to deal with only one source of economic depreciation, namely, the decline in equipment prices. To fully reflect economic depreciation, other sources of decline in the value of the ILEC's plant and equipment must also be considered, e.g., the decline in value due to changes in demand conditions, competition, and technological change that enables new services or improved quality. Mandy and Sharkey note that economic depreciation at any given point in time is "a function of the *current and future prices that are actually received*, current and future expected utilization, the cost of capital...allowed by the regulator or

---

[90] *Mandy-Sharkey*, at 17.

[91] *Id.*, at 2.

required by financial markets, and the life of the asset."[92] Prices and utilization depend on demand conditions, including, e.g., increasing intermodal competition from wireless and cable carriers. These factors are not directly or fully captured by the correction factor proposed by Mandy and Sharkey.[93]

95. Second, the correction factor does not account for changes of price and cost in other types of networks. This problem may be particularly pronounced in the case of loop plant if, as in one of the scenarios examined by Mandy and Sharkey, loop investment costs are expected to rise over time. In this scenario, Mandy and Sharkey's correction factor would adjust TELRIC-based loop prices downward to offset the negative depreciation that supposedly occurs when the loop equipment investment cost is assumed to rise over time. This potential adjustment raises two concerns. First, the correction factor only accounts for changes in the prices of inputs used in the ILEC's network. If competitors build or modify their networks, e.g., a digital cable network adds voice-over-the-Internet-protocol telephone service, then the retail prices that the ILEC can charge will decline and, with it, true depreciation will increase, not be negative. Second, if this occurs prior to the recovery of plant and equipment costs associated with UNEs, then the forward-looking costs of the network will not be recovered, whether or not the correction factor has been used.

96. Third, Mandy and Sharkey do not deal with the risks associated with investing in sunk capacity, which means that a higher cost of capital must also be used to adjust TELRIC prices. In fact, Mandy notes in a recent paper on TELRIC prices that he did "not consider Hausman's concerns about the interaction of depreciation and riskiness. Once uncertainty is admitted, a higher cost of capital may be required to compensate the firm

---

[92] *Id.*, at 11.

[93] It could be argued that expected plant equipment price changes are influenced by competitive developments and, therefore, the correction factor implicitly deals with this issue. However, expected input price movements are generally predicted from historical price trends and those trends may not adequately capture the competition growing in the rapidly changing telecommunications market today.

for its risks, especially any option value that is foregone when the firm makes a sunk investment."[94] The same logic applies to Mandy and Sharkey's analysis.[95]

97. Finally, the correction factor deals only with the forward-looking aspects of the ongoing investment and regulatory process; it ignores the fact that this ongoing process started in the past. Because of this, current network investment costs may not be recovered under the forward-looking pricing method even when the correction factor is applied. That is, if equipment costs used to compute forward-looking TELRIC-based prices are lower than they were when the ILEC first deployed its actual plant and equipment, and the TELRIC methodology establishes prices based on forward-looking costs alone, then the UNE prices that the ILEC can charge will not be high enough to recover its costs.

E. Expense Factors

98. The FCC seeks comment on different approaches to estimating expenses and asks whether there is one clearly superior approach.[96] As the FCC is well aware, the most direct approach begins with actually estimating the total forward-looking operating expenses associated with a particular network element, an exercise that may not be feasible in a multiproduct ILEC for which all directly attributable expenses are not easy to identify. Among various approximations or proxy estimates of expenses, the best known is the traditional method of using annual cost factors ("ACFs"). By construction, an ACF represents a fixed ratio of current expenses to current investment. Hence, for the ACF to be an acceptable method of estimating expenses, there must be a fixed and verifiable causal relationship between the investment and the expense at issue. This requirement is most likely to be satisfied for fixed assets (such as plant and equipment). Although the ACF should be relatively stable over time if the ILEC has

---

[94] David M. Mandy, "TELRIC Pricing with Vintage Capital," *Journal of Regulatory Economics*, 22, 2002, at 215-249.

[95] For an explanation of why sunk costs raise the riskiness of capital investment and the failure of TELRIC to build in a risk premium into the cost of capital dampens the investment incentives of both ILECs and CLECs, see Hausman, *op cit.*

[96] *NPRM*, at ¶110.

succeeded, by operating efficiently, to minimize its expenses per dollar of investment, annual data reported by ILECs through ARMIS can be used to update the ACF from time to time. Current ACFs may be used to calculate forward-looking operating expenses related to plant and equipment provided that the FCC's proposed reformed TELRIC methodology is adopted. That is because current ACFs reflect the relationship between expenses and investment for an actual network subject to various real-world attributes, not the assumed conditions of a hypothetical network.

99. Other operating expenses, such as those not related to plant and equipment, are likely to arise in activities within the ILEC that serve and support all of the ILEC's wholesale and retail services. These activities include the administrative, customer support, legal, human resources, financial, regulatory and other functions of the ILEC. Traditionally, the operating expenses associated with these functions are treated as shared and common costs of the ILEC and it would be appropriate to continue to include the wholesale portion of these costs in TELRIC rates. Allocation of these costs should follow cost-causation principles..

F. Non-Recurring Charges

1. Identification of Costs

100. With respect to non-recurring charges ("NRCs"), the FCC states:

> We believe that consistency among the various components of rates is important. Using one set of network assumptions for recurring charges and a different set of network assumptions for NRCs potentially results in some over-recovery or under-recovery. Nevertheless, we are sensitive to the practical concern that network assumptions that depart significantly from an [ILEC's] existing network might preclude recovery of the cost of non-recurring activities that would be required in establishing a competitive market.[97]

101. This is an important recognition by the FCC of the need to tie NRCs to an actual ILEC's existing network, just as the FCC proposes to calculate recurring costs for just such a network. Although the NRCs need to be forward-looking, they necessarily must

[97] *Id.*, at ¶117.

reflect the ILEC's cost to provide one-time services to CLECs. The FCC believes that "[NRCs] constitute an upfront cost to the [CLEC] that is generally not recoverable if it subsequently loses the end-user customer served with the UNE."[98] Whether or not NRCs represent recoverable costs to CLECs, it would remain important for those NRCs to reflect the actual forward-looking costs incurred by ILECs.

102. The FCC asks whether it is appropriate to establish a presumption that an ILEC's current practices with respect to non-recurring activities are efficient, and are the ILEC's incentives to be efficient diminished when CLECs are the primary users of non-recurring activities?[99] As discussed previously, there is sufficient evidence of efficient operation by the ILECs. Furthermore:

- Many non-recurring wholesale activities also are performed on a retail basis and reflect the efficiency-enhancing pressures of price caps and competition.

- Non-recurring tasks that are performed exclusively for wholesale services are those typically requested by CLECs, developed in collaborative proceedings, and subjected to intensive review. In all respects, these non-recurring tasks are designed with input from CLECs and state regulators.

- ILECs have no incentive to perform non-recurring activities inefficiently as state regulators have set rates for those activities that do not allow ILECs to recover even a fraction of their actual non-recurring UNE costs. In such circumstances, ILECs certainly have no incentive to be *inefficient* and incur additional costs for which they will not be compensated. On the contrary, ILECs have every incentive to make their wholesale operations the lowest cost portion of their business, as evidenced by the fact that wholesale ordering processes, for example, have a high degree of automation.

- ILECs do not have an incentive to perform non-recurring activities inefficiently simply because they hope to secure higher non-recurring charges the next time those charges are set. Even in the best of circumstances, i.e., when rates are set using economically correct forward-looking costs, the wholesale business produces zero or low margins, giving ILECs an incentive to minimize the cost of their wholesale operations.

---

[98] *Id.*, at ¶114.

[99] *Id.*, at ¶119.

- Performance measures and related penalties continue to pressure ILECs to automate their non-recurring tasks as much as possible, thus pushing down their costs to perform non-recurring activities on behalf of CLECs.

2. Recovery of Costs

103. The FCC asks whether an ILEC should recover its non-recurring costs through NRCs or recurring charges.[100] The current policy on the recovery of non-recurring costs gives states the discretion to use either NRCs or recurring charges over a reasonable period of time for the purpose.[101] The use of recurring charges to recover non-recurring costs amounts to amortizing and treating as operating expenses the costs that arise only at one time, i.e., at the time the services requested by CLECs are performed.

104. In theory, non-recurring costs should be recovered solely by NRCs, not recurring charges. The cost causation principle of pricing indicates that costs should be recovered in the manner in which they are generated and from the sources that cause them. To the extent that the cause of non-recurring costs can be identified, and the costs themselves fully quantified, the application of the cost causation principle should be automatic and straightforward. The FCC is concerned, however, that either the *magnitude* of certain non-recurring costs or the *uncertainty* regarding CLECs' ability to recover those costs from their end-user customers could be so high, that NRCs calculated by ILECs to recover those costs can actually be a significant barrier to entry for CLECs. While this may be a valid concern for the FCC's goal of encouraging competitive entry, it *must* be balanced against the equally valid concern that a CLEC may sometimes find itself unable to repay all of the non-recurring costs that are amortized over a given period of time. This risk of default may stem from a CLEC exiting the market because of business failure or, equivalently, the CLEC losing end-user customers prematurely from whom it had expected to recover the amortized non-recurring costs through recurring charges. Therefore, the essential issue in the recovery of non-recurring costs is the tension between ensuring that high NRCs do not retard

[100] *Id.*, at ¶120.

[101] *Local Competition Order*, at ¶749.

competitive entry and giving ILECs the opportunity to recover fully their forward-looking non-recurring costs of providing service to requesting CLECs.

105. Mandating that non-recurring costs be recovered only through recurring charges may change significantly the incentives of both CLECs and ILECs. Recurring charges that allow CLECs the luxury of a delayed payback mechanism could shift the risk of default from those CLECs to the ILEC that incurs the non-recurring costs associated with one-time services. This could, in turn, cause CLECs to request more of such services than they would if they were required to fully compensate the ILEC at the time that the non-recurring costs were incurred. This clear source of inefficiency would have downstream repercussions, such as requiring the ILEC to configure its network and practices differently than it would absent that inefficiency. With a distorted network configuration, the ILEC's costs would fail to reflect efficient operations. At the same time, an inefficient degree or type of competitive entry would be encouraged. Also, with the default risk burden shifted to it, the ILEC could well become less willing to invest in systems and mechanisms for serving CLECs that cost more to install and operate initially but were likely to prove more efficient in the long run. In other words, this shift of incentives may induce a bias toward *short*-run cost-saving systems and practices (e.g., cause the ILEC to rely more on manual operations using the embedded labor force rather than on more forward-looking automated systems).

106. Finally, the failure to provide "just-in-time" compensation to an ILEC could interfere with the ILEC's own viability as a business and its plans for long-term investment. The inability to recover costs as they arise would leave the ILEC unable to secure the funds it needs to pay even its variable inputs, such as labor and other raw materials used in the process of providing one-time services to CLECs.[102] No ILEC can expect to function efficiently and viably for long if it is unable to recover its costs in a timely manner and to compensate its variable inputs. If it must rely on loans and lines of credit to cover the gap between its costs and payments, then its cost of doing business

[102] This problem would only be exacerbated by periodic (mainly downward) revisions to the recurring charges permitted by regulators to recover the amortized non-recurring costs.

in this manner would necessarily rise and its operations would not be as efficient as possible. In other words, even with the proposed reformed TELRIC methodology in place, the forward-looking costs of efficient operation subject to the ILEC's real-world attributes and obligations could not possibly be calculated in these circumstances.

107. The best solution to this problem would be, of course, to permit ILECs to recover their non-recurring costs through NRCs at the time those costs are incurred and from the CLECs that cause those costs to be incurred. If the potential for entry barriers remains a lingering concern, the FCC could consider alternative mechanisms that could both lower the upfront costs to CLECs and alleviate the risks of default and incomplete compensation of the ILEC's costs. The FCC could require that *CLECs* absorb their risk of default either through insurance mechanisms or a commitment to pay all outstanding balances (in the event of default) plus all applicable default-related penalties. Instead of requiring the ILECs to amortize their non-recurring costs, the requesting CLECs could use loans or lines of credit of their own to, in effect, create an amortized stream of payments for themselves. These alternative arrangements would allay the FCC's concerns about entry barriers for CLECs due to high upfront costs and guarantee just-in-time and full compensation to the ILEC that provides one-time services. In addition, the incentives of both the ILEC and CLECs to operate efficiently (in both the short term and the long term) would be preserved.

108. The FCC seeks comment on its proposal to limit the use of NRCs to recover only the non-recurring costs associated with one-time services that benefit exclusively the requesting CLECs.[103] If the cost causation principle is applied properly, this is exactly what NRCs are designed to do. When a CLEC benefits exclusively from a one-time service, it is properly identified as the exclusive cost-causer from whom the full extent of the associated one-time cost should be recovered. Changes or improvements made by the ILEC to its own network, if only to better provide one-time services to CLECs, could be properly recovered through other means.

---

[103] *NPRM*, at ¶121.

109. Finally, we urge a great deal of circumspection in associating NRCs with barriers to competitive entry.[104] A barrier to entry arises when the new entrant experiences an asymmetric cost burden, namely, one not experienced by its competitors (including the incumbent). Sunk costs faced by the entrant are usually characterized as having that property. However, in the local exchange market, this may be a rather nuanced issue because sunk costs faced by new entrants differ from those experienced by the ILEC only as a matter of timing. That is, the ILEC's own sunk costs were experienced at an earlier point in time, and recovery mechanisms may or may not be in place at the time a new competitor seeks to enter the market. It cannot be the case, however, that the cost burden is totally asymmetric in the sense that the potential CLEC experiences it but the ILEC never did or never will. Even though the 1996 Act has lowered significantly the sunk costs of CLEC entry, there are undoubtedly some upfront costs associated with such entry. Does this mean that every regulatory effort should be made to alleviate the burden of those costs, even if leads to inefficient or "too much" entry? From the economic perspective, the answer *cannot* be an unqualified "yes."

110. We have occasionally come across arguments that the ILEC, already firmly entrenched in the market, faced far easier circumstances with *its* upfront costs because, as the exclusive franchise, it had the opportunity to recover *any* cost that it incurred. While it is true that the circumstances in which the ILEC started were different from those that CLECs face upon entry today, it is *not* true that the *regulated* ILEC had a free hand to recover its costs, both recurring and non-recurring, in any manner of its choosing. In fact, while the ILEC was assured of a "reasonable" opportunity to recover its costs, the various regulatory policies frequently imposed upon it—including understated costs of capital and longer asset lives and slower depreciation prescribed by regulation than would be expected with economic depreciation—cannot be said to have provided such an opportunity. Clearly, if those kinds of regulatory policies were to apply to new

[104] The FCC specifically characterizes NRCs as "an upfront cost to the [CLEC] that is generally not recoverable if it subsequently loses the end-user customer served with the UNE." *NPRM*, at ¶114. It should be recognized that many of the one-time services to which NRCs would apply are actually provided to CLECs *after*, rather than *at*, entry. By definition, those NRCs cannot be barriers to entry.

CLECs today, considerably less entry would occur than has been observed. Thus, ILEC and CLEC obligations to shoulder the non-recurring costs of entry are only separated in time; they remain, however, an essential first step to *any* entry. From that standpoint, it does not appear that a convincing case exists to declare that NRCs are an actual barrier to entry or to argue that CLECs would be impaired if required to pay these up-front charges to the ILEC when the service is provided (even in the revised sense defined by the FCC in the *Triennial Review Order*).

G. Rate Structure

111. The FCC asks for comment on whether, and under what circumstances, current rate structure requirements should be changed.[105] We agree with the principle, first adopted in the *Local Competition Order*, that charges for dedicated facilities, including unbundled loops and dedicated transport, should be flat-rated. We also agree with the accompanying principle that the costs of shared facilities should generally be recovered through usage-based charges. Although the FCC suggests that, in some instances, flat-rated charges may be appropriate for shared facilities, we believe that that may only be so in rather special circumstances. In general, it is economically efficient for the structure of prices (charges) to reflect the structure of costs. Thus, if costs are not volume or usage-sensitive, such as those of dedicated facilities, then prices should be flat-rated. On the other hand, if costs are volume or usage-sensitive, such as those of shared facilities, then prices should ordinarily be usage-sensitive as well.

112. In this context, the FCC asks whether flat-rated charges would be appropriate for switching and shared transport.[106] As a general matter, flat-rated charges would not be the best price structure for either switching or shared transport as long as costs for both arise in a usage-sensitive manner. Both switching and shared transport are congestible resources. Unless the capacity offered for either is never likely to be exhausted, the pricing should remain usage-sensitive. In addition, even if the *investment* cost of

---

[105] *NPRM*, at ¶132.

[106] *Id.*

switching or shared transport can be thought of as being incurred in order to accommodate peak-period demand (i.e., set in place the appropriate capacity), there are several costs associated with both that are plainly usage-sensitive and caused by peak-period and off-peak-period customers alike (mainly operational and maintenance costs). If flat-rated charges were implemented for switching and shared transport, then costs that vary with usage would be recovered from revenues that do not vary with usage. This is a sure recipe for inefficiency and welfare loss.[107]

H. Rate Deaveraging

113. The FCC asks whether, and under what circumstances, the requirement of geographic deaveraging of UNE rates (generally by three or more cost zones) should be retained.[108] The FCC also notes that in states where retail service rates (over which the FCC has no control) are not correspondingly deaveraged and, in addition, include implicit subsidies, the mismatch between UNE and retail rates can skew incentives for competitive entry. In particular, there is likely to be excessive concentration by new entrants on services for which the margins between retail rates and UNE rates are the greatest (e.g., retail business services). On the other hand, when those margins are small or even negative (e.g., for retail residential services), new entrants would be less likely to provide the services in question. In general, the mismatch between UNE and retail rates is a source of serious inefficiency in the local exchange market because the COLR obligation of the ILEC prevents it from matching the choices made by its competitors and, in the process, competition itself is skewed in the direction of too much supply of one set of services and too little of another.

---

[107] It would be bad public policy to *require* an ILEC to recover its usage-sensitive costs of switching and shared transport through flat-rated charges. Consider, for example, that ILECs invest in switching in order to provide a broad range of services. Modern digital switches perform a variety of functions and the manner in which an ILEC's switching costs are incurred may vary depending on the function being performed. As the switching element becomes more competitive, it would be increasingly important to allow market forces to determine the rate structure, so that a rigid regulatory rule does not interfere with competitive market outcomes.

[108] *NPRM*, at ¶136.

114. Even though the FCC does not have jurisdiction over retail local exchange services, it has an opportunity in this proceeding to provide direction to the states on how retail service prices ought to be reformed. In order for an efficient balance of costs (UNE prices) and retail prices to be achieved, states should undertake reform to remove implicit subsidies from retail residential local exchange service prices and eliminate the subsidy support currently provided by other service prices, including possibly those for retail business, retail long distance, and various vertical services.[109] This form of rate rebalancing is critical to promote efficient competition in the local exchange market and to ensure that no customer segment is underserved.

I. Rate Changes Over Time

115. The FCC seeks suggestions for ensuring that UNE prices can be adjusted over time without the need for long and contentious UNE pricing proceedings.[110] In particular, it asks whether indexed price cap plans would be suitable for UNE pricing over time. As we noted earlier, indexed price caps may provide a feasible mechanism for that purpose, provided that the "going in" UNE prices are set efficiently. Under the current TELRIC methodology, UNE prices are not set in that manner. One possible course of action is to adopt the FCC's proposed reformed TELRIC methodology (as described here) and set initial UNE prices on that basis. Alternatively, initial UNE prices may be set using ECPR, and the price cap mechanism could then be relied upon to squeeze out any monopoly rents that may exist in those prices.

V. Conclusion: Reformed UNE Pricing Methodology will Promote Efficient Competition and Greater Investment

116. The FCC's tentative conclusion that the TELRIC methodology should take account of the real-world attributes of actual ILEC networks marks an important step forward in reform of the manner in which UNE prices are currently set. This means that TELRIC

[109] Targeted use of subsidized prices could still continue for consumers that need some form of assistance to sign up for even the basic set of retail services.

[110] *NPRM*, at ¶¶138-139.

estimates must reflect not only the physical and topographical features of the actual ILEC network, but also realistic assumptions about network routes, critical network parameters (such as fill factors and structure sharing percentages), the ILEC's risks and the appropriate risk-adjusted cost of capital, and asset lives and depreciation rates.

117. The significance of the proposed reform is twofold. First, we expect UNE prices set according to the reformed TELRIC methodology to result in economically efficient choices by CLECs. Presently, UNE prices are based on TELRIC estimates for a hypothetical, most-efficient network whose features do not reflect those of any actual ILEC. Prices so set are necessarily lower than they should be, and we believe that there are ample statistics to show that significant growth in CLEC demand for UNE and UNE-P over the past few years has been spurred by artificially low UNE prices. Without true, cost-based, and economically efficient UNE prices in place, competition from CLECs is unlikely to be efficient. Specifically, CLECs are likely to favor UNE and UNE-P based competition over facilities-based competition for as long as UNE prices remain artificially low.

118. Second, we expect UNE prices that result from the reformed TELRIC methodology to provide proper signals to guide future investments by ILECs and CLECs alike. Because of the bias in favor of UNE and UNE-P based operations induced by artificially low UNE prices, CLECs presently have reduced incentives to invest in their own network facilities. For the very same reasons, ILECs too have diminished incentives to invest in and upgrade their own facilities. If the vision of vigorous facilities-based competition embodied in the Telecommunications Act of 1996 and other public policies is to be realized fully, UNE prices would have to perform their signaling function efficiently.

119. This concludes our Declaration.