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	)	
	)	

OPENING COMMENTS OF SBC COMMUNICATIONS INC.

Jim Lamoureux
Gary Phillips
Paul K. Mancini
SBC COMMUNICATIONS INC.
1401 Eye Street, N.W.
Washington, D.C. 20005
(202) 326-8800

William T. Lake
William R. Richardson, Jr.
Jonathan E. Nuechterlein
David M. Kreeger
Meredith B. Halama
Polly B. Smothergill
WILMER, CUTLER & PICKERING
2445 M Street, N.W.
Washington, DC 20037
(202) 663-6000

Counsel for SBC Communications Inc.

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INTRODUCTION AND SUMMARY

The *Notice of Proposed Rulemaking* identifies two essential goals for any rational scheme of network element pricing: "First, UNE prices should be set in a manner that sends efficient entry and investment signals to all competitors. Second, UNE prices should provide incumbent LECs an opportunity to recover the forward-looking costs of providing UNEs."[1] As currently applied, TELRIC thwarts each of these objectives, both because it rests on mutually inconsistent assumptions that, in combination, systematically understate costs and also because it invites unfettered conjecture and black-box ratemaking. Unless and until the Commission remedies these defects, the continued application of TELRIC could have devastating consequences for the industry. As a growing consensus of nonpartisan financial analysts warns, "[t]he fundamental tenets of the TELRIC model must be completely revisited" because, "[i]f regulators continue to mandate unrealistic and unachievable requirements in their policies, the U.S. telecom market will soon achieve second-rate status in global communications. And more important, network reliability and innovation will suffer."[2]

The root of the problem is that TELRIC bases network element rates not on an *ILEC's* forward-looking costs, but ostensibly on the speculative costs that a *hypothetical carrier* would incur if it were able to create a geographically ubiquitous network in a flash, using only "the most efficient telecommunications technology currently available and the lowest cost network configuration." 47 C.F.R. § 51.505(b)(1). This central postulate of TELRIC is both unsound in

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1 *See* Notice of Proposed Rulemaking, *Review of the Commission's Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers*, WC Docket No. 03-173, FCC 03-224, ¶ 38 (Sept. 15, 2003) ("*NPRM*") (footnotes omitted).

2 Gartner, Inc., *Unbundled Network Element Policies Threaten U.S. Telecom Services Growth*, Focus Report, at 15-16 (Oct. 24, 2003).

conception and unworkable in application, and it has produced rates that fall far below any reasonable conception of "cost."

As an initial matter, no one seriously argues that any actual carrier could ever create and sustain a geographically ubiquitous network consisting only of "the most efficient technology currently available and the lowest cost network configuration." To the contrary, any efficient carrier's assets will inevitably reflect a mix of newer and older technology and demographic trends over time. TELRIC's defenders nonetheless claim that this "optimally efficient network" construct is a useful proxy for reflecting conditions in a "perfectly competitive market," where, they say, asset values throughout each carrier's network would be instantaneously slashed the moment that more efficient technology becomes available.

But this Through-The-Looking-Glass thought experiment is meaningless, because there is no coherent purpose in hypothesizing market conditions even approaching the requisite "perfect competition" in this capital-intensive industry marked by rapid technological change. No carrier can stay in business if deprived of an opportunity to recover costs representative of its network *as a whole*, including the inevitable aspects of its network that do not reflect the most recent, cutting-edge technology available or that were configured without perfect foresight of subsequent demographic developments. And the "optimally efficient" network construct assumes away the opportunity to recoup precisely those costs. Indeed, that construct imagines a world in which myriad facilities-based rivals enter a perfectly competitive market and then immediately declare bankruptcy upon discovering that they cannot possibly cover their costs.

Just as important, the typical TELRIC model today does not even consistently apply this "perfect competition" premise, on which the construct of an "optimally efficient network" rests. Instead, that model is riddled with internal contradictions that systematically understate "costs."

It assumes, for some purposes, a hyper-dynamic market in which all innovation instantaneously drives down asset values, but it simultaneously assumes a very different, less competitive market for other purposes whenever the effect of the perfect competition premise would be to *raise* costs. For example, a carrier operating in TELRIC's perfectly competitive market would have much lower scale economies, much greater capital costs, and much shorter depreciation lives than have ever been modeled in any TELRIC study to date. This selective application of the "perfect competition" and "optimally efficient network" assumptions for some inputs but not others undermines investment incentives, for no carrier would build its own facilities at real-world costs in *this* market if it could purchase network elements instead at rates that illogically assume many of those costs away.

A key goal of this proceeding thus should be to resolve the methodological inconsistencies in the current application of TELRIC. The best way to do that—indeed, the only way that will ground TELRIC in the real world, ensure consistency of results, and send appropriate price signals to the market—is to base TELRIC on the forward-looking costs incurred by an efficient carrier occupying the ILEC's market position. To that end, the Commission should clarify that network element prices for a particular ILEC must reflect the forward-looking costs of a ubiquitous carrier whose scale economies, depreciation lives, and cost of capital are equivalent to those of that ILEC today. For consistency, that approach also would require the Commission to discard the incongruous assumption that efficiency-enhancing technological innovations, or novel network architecture concepts, instantaneously lower the forward-looking costs of all of the carrier's network assets.

In particular, the Commission should modify TELRIC to take as given not just current wire center locations, but also, more generally, the configuration, architecture, and technology

mix present in the ILEC's actual network. For the sake of transparency and predictability, those network attributes should be presumed to be efficient, given the incentives instilled by price cap regulation and facilities-based competition. This approach is fully consistent with forward-looking cost principles. As under TELRIC, network element rates would be calculated on the basis of current prices and actual ILEC labor rates and would thus reflect the investment and expense cost *today* of providing the elements in question, not the higher or lower historical costs reflected on the ILEC's books. Moreover, under SBC's proposed approach, the inquiry would be framed to ask how much it would cost to replace network assets, not in their current form, but in the form they will collectively take during a planning period of expected facilities upgrades documented in an ILEC's actual engineering plans. Although this approach would take as given whatever existing facilities remain in the network during that future period, it would also capture technological evolution within that period. Finally, the cost inquiry would exclude from the ensuing facilities mix any assets whose replacement costs are anomalously high because they are no longer available on the market and thus could be obtained, if at all, only at prices radically disproportionate to their underlying value.

This proposed framework would not only provide clarity to the general principles underlying the calculation of UNE prices, but also bring much-needed predictability to a number of highly divisive disputes about specific inputs to UNE cost models. Consider the case of "fill factors," which measure the proportion of a facility's capacity that, on average, is used when the facility is efficiently deployed. Different state commissions have adopted radically different fill factors for the "hypothetical network" at issue in the current version of TELRIC. Under the approach proposed here, UNE rates would be calculated on the basis of the current fills in an ILEC's existing network. Use of such actual fills is appropriate because price caps, facilities-

based competition, and service quality requirements have given ILECs strong incentives to design and operate their networks with efficient levels of spare capacity. For the same reasons, it is likewise appropriate to take as given other key network and operating costs, including, for example, (i) the materials costs and labor rates reflected in current contracts, (ii) the percentage of "aerial cable" within the total loop plant, and (iii) the ratio of fiber to copper in feeder facilities. (Note that, with respect to the latter two inputs, modifying TELRIC as proposed here may sometimes tend to *lower* ultimate UNE rates.) And depreciation lives should reflect the actual, GAAP-compliant lives used for the ILECs' financial statements—which are the most accurate indications of economic lives available and, despite contrary claims, do *not* err on the side of "conservatism." These and other specific inputs are addressed in Part III of these comments. With respect to each, the underlying principle is the same: The appropriate point of reference in determining forward-looking cost is the real-world experience of the ILECs whose network elements are at issue.

This modification of TELRIC is appropriate and necessary for several reasons. *First*, by basing TELRIC on the ILEC's forward-looking costs, as opposed to the costs of a hypothetical, optimally efficient competitor, this approach would give CLECs appropriate incentives to build their own facilities to the extent it would be more efficient for them to do so. *Second*, price cap regulation and competition (from wireless, cable, and Voice over Internet Protocol (VoIP) providers as well as CLECs) have given the major ILECs powerful, long-standing incentives to act efficiently in updating their networks, such that those networks are now appropriate proxies for the network of any efficient ubiquitous carrier. *Third*, and no less important, this approach is grounded in reality rather than speculation. It would therefore help make the ratesetting process less of a black box, less susceptible to result-oriented operation, and less dependent than

TELRIC is today on enormously intricate computer models understandable only to a few specialists.

These last two points are as critical as they are commonly overlooked. There is no good reason—short of artificially lowering UNE rates (and that is not a good reason)—for the Commission to speculate, or to permit state regulators to speculate, about how to deliver goods and services most efficiently. For one thing, that is not a role to which government regulators are well-suited. ILECs employ thousands of highly trained, specialized employees whose very job is to maximize the efficiency with which their companies operate. There is no basis for concluding that regulators can design and operate networks more efficiently than the people who are paid to do so by ILECs that have every incentive today to operate as efficiently as possible. In an era of rate-of-return regulation, ILECs could sometimes afford to subordinate efficiency to other goals. But rate-of-return regulation ended many years ago, and ILECs have had every incentive since then to become as efficient as any other company anywhere in the economy.

Indeed, with declining access lines and shrinking revenues as a result of both intermodal and intramodal competition, ILECs have come under relentless pressure to reduce costs as much as they possibly can. They have mined their networks, systems, and processes looking for inefficiencies; they have laid off workers; and they have cut capital expenditures—all in an effort to sustain profits in an age of declining revenue. Wall Street has noted these efforts with approval, but continues to punish ILEC stocks because it questions the extent to which this cost-cutting can continue and it harbors concerns about the long-run prospects of these disproportionately and irrationally regulated companies in an age of increasingly wide-open competition. For all of these reasons, the Commission should modify TELRIC by making clear that forward-looking costs should be based on an ILEC's real-world experience.

DISCUSSION

I. TELRIC IS FLAWED AND REQUIRES SUBSTANTIAL REFORM.

At the highest level of generality, this proceeding presents two discrete questions. *First*, what is the ultimate objective of cost-based pricing—*i.e.*, what "price signals" should an appropriate cost methodology send to the market, and how can regulators know when those signals are "accurate"? *Second*, against that backdrop, how should "cost" be defined—more specifically, how should TELRIC be adjusted (i) to root out the "central internal tensions" identified in the *NPRM* (at ¶ 50) and (ii) to avoid the black-box indeterminacy that has beset TELRIC's application since 1996? The first question logically precedes the second, and we briefly address it at the outset.

A. Below-Cost UNE Rates Prevent ILEC Cost Recovery, Distort Price Signals, and Artificially Depress Investment Incentives of CLECs and ILECs

The first step in reforming TELRIC is to clarify the Commission's objectives in designing any UNE cost methodology. The Commission has articulated two such goals: (1) the provision of appropriate price signals, and (2) recovery of an ILEC's forward-looking costs. *NPRM* ¶ 38. TELRIC achieves neither goal.

When TELRIC was originally formulated in 1996, cost-recovery concerns were less central to the Commission's analysis than the "premium" the Commission placed on "stimulat[ing] entry into the local exchange market." *NPRM* ¶ 2. As a result, the Commission based TELRIC on hypothetical conditions that could not exist in the real world; that were ostensibly designed to, but did not, replicate conditions in a "perfectly competitive market;" and that produced artificially low rates that invited non-facilities-based entry even as they discouraged investment. Moreover, because TELRIC rests so much on hypothesis and speculation, TELRIC has provided the means for ratcheting UNE rates lower and lower,

producing an escalating and unsustainable downward spiral in ILEC compensation. An incumbent simply cannot maintain a viable wholesale business when it is forced to sell wholesale goods and services below cost. It is similarly impossible to maintain a viable *retail* business when an incumbent's wholesale customers can arbitrage artificially low wholesale prices to siphon off the incumbent's highest revenue customers, leaving the incumbent to serve only those customers who generate less revenue than they cost to serve. TELRIC thus places incumbents in a classic lose-lose situation: they lose money on every wholesale line and they lose money on their remaining retail lines.

The Commission appears to recognize that its initial focus on "jump-starting" competition is no longer appropriate (if it ever was) and that ILEC cost-recovery concerns can no longer be blithely brushed aside. *Id.* As Wall Street's sobering appraisals make clear, ILECs face a new environment of ruthless competition in which regulatory undercompensation for the compelled use of their networks could have nationally devastating consequences.[3] When "Government set[s] wholesale local prices below real cost," as it has increasingly done in UNE rate proceedings throughout the United States, it "poison[s] prospects for economically sound facilities investment" and "contribute[s] to the destruction of companies, jobs, and shareholder wealth by discouraging economic investment and rewarding uneconomic investment."[4] The Commission can avert those consequences only by adjusting TELRIC to ensure adequate recovery of an ILEC's forward-looking costs.

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[3] *See, e.g.,* Scott Wooley, *Bad Connection: The giant local phone companies appear to have escaped the telecom crackup. Look again: They may be the final pillar to crumble*, Forbes Magazine (Aug. 12, 2002) ("As newcomers steal the fattest customers, the Bells will get stuck serving the low-spending, high cost ones. 'Inexorably,' [AT&T CEO David Dorman] says, 'cable and wireless are going to eat their share.'"); *see also infra* Part III.A.1.

[4] Scott C. Cleland, "Why De-Regulation Is Now The Dominant Telecom Trend/Theme," Precursor Group Independent Research (Nov. 28, 2001).

TELRIC also requires reformulation if it is to achieve the Commission's separate goal of sending appropriate "price signals" to the market. A "price signal" is said to be "accurate" if, for example, it gives a new entrant appropriate incentives to lease UNEs when, and only when, doing so can be expected to produce more efficient long-term outcomes than if the entrant were forced to obtain the relevant facilities on its own.[5]

Although the parties disagree about how to measure "cost," it should be common ground that below-cost UNE rates send inaccurate price signals to the market. They do so in at least three respects. *First*, they artificially depress any CLEC's incentives to obtain facilities of its own, even when doing so is in society's long-term interest. After all, no carrier would ever build facilities at cost if it could instead lease them below their real-world cost. This is cause for serious concern, because the Commission has stressed the importance of "encouraging competitive LECs to build their own facilities or migrate toward facilities-based entry."[6] The grim alternative is a regime in which—despite the enormous transaction costs posed by (among other things) "the tangled management inherent in shared use of a common resource"[7]—ILECs and CLECs end up competing in most markets about very little besides sales and marketing techniques.

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[5] *See* First Report and Order, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 11 FCC Rcd 15499, 15813 ¶ 620, 15846-47 ¶ 679, 15848-49 ¶¶ 683-85 (1996) ("*Local Competition Order*").

[6] Fourth Report and Order, *Deployment of Wireline Services Offering Advanced Telecommunications Capability*, 16 FCC Rcd 15435, 15437 ¶ 4 (2001); *see also* Notice of Proposed Rulemaking, *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, CC Docket No. 01-339, et al., FCC 01-361, Separate Statement of Chairman Michael K. Powell at 2 (2001) (stressing FCC's "ongoing commitment to the promotion of facilities-based competition").

[7] *USTA v. FCC*, 290 F.3d 415, 429 (D.C. Cir. 2002), *cert. denied*, 123 S. Ct. 1571 (2003).

Second, below-cost UNE rates subsidize the operations of CLECs whose business plans are otherwise insufficiently profitable to warrant entry into a particular market, much as above-cost call-termination rates inappropriately subsidized the proliferation in the late 1990s of CLECs that specialized in terminating dial-up traffic bound for Internet service providers.[8] The result, as with all irrational government subsidies, is an economically inefficient misallocation of society's resources. Such one-sided subsidies also betray the Commission's overarching mission to ensure that UNE rates are, as "Congress intended, *pro-competition*" rather than "*pro-competitor*."[9] Indeed, as Professors Aron and Rogerson explain in their attached analysis, below-cost UNE rates not only create arbitrary government preferences for one type of carrier over another, but turn valid public policy goals upside down by disadvantaging exactly those new entrants most likely to add value to the telecommunications sector.[10] In particular, they reward CLECs to the precise extent that they choose *not* to invest in their own networks by enabling non-facilities-based CLECs, through artificially low cost structures, to undercut the competitive position of other CLECs and intermodal providers that *have* invested in their own facilities.[11]

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[8] Order on Remand and Report and Order, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 16 FCC Rcd 9151, 9185 ¶ 76 (2001), *remanded on other grounds*, *WorldCom, Inc. v. FCC*, 288 F.3d 429 (D.C. Cir. 2002).

[9] *Local Competition Order*, 11 FCC Rcd at 15812 ¶ 618 (emphasis in original).

[10] *See* Debra Aron and William Rogerson, *The Economics of UNE Pricing* § 2.3 (Dec. 16, 2003) (attached as Exh. A).

[11] *See, e.g.,* Supplemental Order Clarification, *In re Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, 15 FCC Rcd 9587, 9597 ¶ 18 (2000) (permitting TELRIC-based alternative to special access services "could undercut the market position of many facilities-based competitive access providers," which constitute "a mature source of competition in telecommunications markets"), *aff'd*, *Competitive Telecommunications Ass'n v. FCC*, 309 F.3d 8, 16 (D.C. Cir. 2002); *see also* Comments of SBC Communications Inc., *Review of the Section 251 Unbundling Obligations of Incumbent Local*

Third, below-cost UNE rates send inaccurate price signals not just to *CLECs*, but also to *ILECs*, and in this respect as well they can have equally devastating consequences for the industry. As Professors Rogerson and Aron explain, "[t]he pricing regime must provide the ILEC with a credible promise that it will be reimbursed for the forward-looking costs it will actually incur to produce future output, or the ILEC will not invest and, ultimately, will go out of business." Exh. A § 2.2. In particular, rational ILECs will tend to avoid investing in new network facilities subject to unbundling requirements if they fear that the regulatory process will produce inadequate wholesale compensation. *See id.* The application of TELRIC in its present form presents enormous risks to ILECs considering large investments, both because TELRIC intrinsically skews the cost inquiry to understate network costs (as discussed below) and because, on top of that, regulators applying TELRIC have powerful short-run incentives—and are often under enormous political pressure—to drive down compensation levels still further to gin up "completely synthetic competition."[12]

As the Seventh Circuit recently summed up these related concerns: "Prices for unbundled elements affect not only the allocation of income among producers, but also new investment and innovation: if the price to rivals is too low, they won't build their own plant (why make capital investments when you can buy for less, one unbundled element at a time?), and the incumbents won't maintain or upgrade their facilities (why make costly capital

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Exchange Carriers, CC Docket No. 01-338, at ii (filed Apr. 5, 2002) ("[O]ne of the reasons so many CLECs have failed is that there were so many of them in the first place. Spurred on by the seemingly limitless availability of capital and Commission policies that encouraged widespread entry, CLECs flooded the market during the late 1990s . . . . Such policies destabilize facilities-based competitors by making it more difficult for them to win the market share necessary to cover their costs and to justify new investment. Worse yet, they force facilities-based carriers to compete against entities whose costs are determined, not by market prices and business realities, but by regulation.").

12 *USTA*, 290 F.3d at 424; *see also* Exh. A § 3.2.

investments if you have to sell local loops to rivals for less than it costs to produce them?)."[13] As Professors Aron and Rogerson explain, one of the key goals of this proceeding is thus to provide greater reassurance to ILECs, and a clearer message to CLECs, that government policies will not discourage what otherwise would be efficient investment. *See* Exh. A § 2. Meeting that objective will require, first, resolving the internal contradictions within TELRIC that systematically bias cost estimates downwards and, second, limiting the ability of regulators to set below-cost rates in applying open-ended cost criteria.

Finally, the Commission should bear in mind that even cost-based prices can send accurate price signals *only* to the extent that, in applying the "impairment" standard, the Commission has properly confined the threshold unbundling obligation to elements "linked (in some degree) to natural monopoly"—*i.e.*, those that exhibit "economies of scale 'over the entire extent of the market.'"[14] For any other elements, cost-based rates will be too low, and will send incorrect price signals, because they will induce a CLEC to lease UNEs from an ILEC in the many circumstances in which (i) the ILEC's average unit costs are lower than the CLEC's in the *short term* but (ii) society's *long term* interests would be better served by encouraging the CLEC, like new entrants in innumerable other industries, to build up its own asset base so as to match the incumbent's scale economies over time.[15] This is a particular concern today because the

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[13] *AT&T Communications of Illinois, Inc. v. Illinois Bell Tel. Co.*, 349 F.3d 402, 404 (7th Cir. Nov. 10, 2003).

[14] *USTA*, 290 F.3d at 427 (quoting 2 Alfred E. Kahn, *The Economics of Regulation: Principles and Institutions* 119 (1989)).

[15] As the D.C. Circuit has explained, "average unit costs are necessarily higher *at the outset* for any new entrant into virtually *any* business," *USTA*, 290 F.3d at 427 (emphasis added), because the scale economies of a start-up in any industry are necessarily lower than those of a large business with an established customer base. But this short-run cost differential supplies "no particular reason to think that . . . multiple, competitive supply is unsuitable," *id.*— and thus no reason to believe that economic efficiency is served when new entrants avail themselves of an

Commission has acknowledged that many UNEs that remain on the section 251(d)(2) unbundling list do *not* qualify as natural monopoly facilities.[16] This does not mean, of course, that the Commission should stray from a permissible understanding of "cost" in prescribing pricing rules for the industry. But it does mean that the Commission should be particularly careful to avoid exacerbating the problem by endorsing any methodology that errs at all on the side of *understating* cost. As discussed below, TELRIC in its present form is such a methodology.

B. In Its Current Form, TELRIC Is Deeply Flawed in Both Conception And Execution.

The current version of TELRIC is flawed in two fundamental respects. First, it rests on profoundly inconsistent methodological assumptions that, in tandem, produce UNE rates far below any sensible conception of "cost." Second, because it is so rooted in the hypothetical, it invites counterfactual speculation that predictably leads to still further reductions in UNE rates. We address each point in turn.

1. The Current Version of TELRIC is Internally Inconsistent.

No methodology can send accurate price signals or achieve any other valid policy objective if it rests on mutually contradictory input assumptions that, in combination, systematically understate or overstate costs. As the Commission acknowledges, however, that is

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incumbent's lower costs by forgoing the opportunity to obtain facilities of their own. In effect, permitting CLECs to lease *non*-natural-monopoly facilities at an ILEC's lower unit costs is a competitively biased means of subsidizing entry by non-facilities-based CLECs; it is "*pro-competitor*" rather than, as "Congress intended, *pro-competition*." *Local Competition Order*, 11 FCC Rcd at 15812 ¶ 618 (emphasis in original).

[16] *See, e.g.,* Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, *Review of the Section 251 Obligations of Incumbent Local Exchange Carriers*, CC Docket Nos. 01-338, 96-98 & 98-147, FCC 03-36, ¶ 107 (rel. Aug. 21, 2003) ("*Triennial Review Order*") (determining that "impair" standard is more lenient than "essential facilities" standard).

precisely what current applications of TELRIC do. *See NPRM* ¶¶ 49-51. Understanding TELRIC's "central internal tension[]" (*id.* ¶ 50) requires a full appreciation of how typical TELRIC models operate in practice today—and, in particular, how they simultaneously model (i) a perfectly competitive wholesale market for some purposes and (ii) a market served by a single ubiquitous carrier for other purposes, biased in each context by the use of whatever modeling assumptions tend to drive UNE rates down. That mix-and-match exercise inexorably generates below-cost UNE rates, as discussed below.

Current TELRIC cost models typically ask the following question: If a single carrier were to build an optimally efficient network today to serve all customer locations within a particular geographic area, taking as given only the locations of existing wire centers, how much would it cost to construct and maintain the necessary facilities?[17] Assumptions about scale economies play a critical role in such models. Although the details vary from one model to the next, the per-line cost of a loop in any model is inversely proportional to the number of working lines in a given geographic area. The reason is straightforward: all else held equal, it is less costly *per line* to dig up the ground and install telephone cable to serve, for example, all 100 units in a new residential or business development than it is to do much of the same work to serve a proportionate sample of only 10 or 20 of those units. Similarly, larger capacity cables

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[17] *See NPRM* ¶¶ 17 ("The Commission's TELRIC pricing rules equate the incumbent LEC's cost of providing network elements with the cost today of building a local network that can provide all the services its current network provides, using the least-cost, most-efficient technology currently available," while "tak[ing] as given the existing wire center locations"); 47 C.F.R. § 505(b)(1) (TELRIC "should be measured based on the use of the most efficient telecommunications technology currently available and the lowest cost network configuration, given the existing location of the incumbent LEC's wire centers"); *see also NPRM* ¶ 18 (TELRIC "is designed to calculate the total cost of building a new, efficient network"); *id.* ¶ 30 ("A forward-looking costing methodology considers what it would cost today to build and operate an efficient network (or to expand an existing network) that can provide the same services as the incumbent's existing network.").

can be used where more lines are served, and the costs of structure can be distributed among a greater number of units. Increasing the number of working lines within a given area accordingly produces greater economies of scale and density, lower per-unit costs, and thus lower average UNE rates. Current TELRIC models take advantage of that phenomenon—and keep UNE rates low—by modeling a customer base served by a single ubiquitous provider.

At the same time, regulators today typically interpret TELRIC to require a model that *also* assumes instant incorporation of the latest technology throughout this ubiquitous hypothetical network. The most aggressive models assume that all network facilities will be instantaneously replaced the moment any new technology becomes available, with feeder and distribution routes (and fill) also instantaneously and optimally reconfigured with every material shift in demand demographics. For the reasons that follow, these dual assumptions are profoundly incompatible.

In the real world, even in perfectly competitive markets, firms do not instantaneously replace all of their facilities with every improvement in technology; indeed, it would be absurdly inefficient for them to try to do so. Thus, as Professors Aron and Rogerson explain, even the most efficient carrier's network will reflect a mix of new and older technology at any given time and will also reflect the growth of the network over time as demand evolves. *See* Exh. A § 3.1. There is, in fact, no serious dispute on this issue. Defenders of TELRIC claim, instead, that the assumption of instantaneous facilities replacement is "merely a proxy for what actually happens in [perfectly] competitive markets: the instantaneous downward *revaluation* of the economic value of existing assets in response to the rollout of newer, more efficient technology."[18] In a

[18] Letter from James W. Cicconi, General Counsel and Executive Vice President, AT&T, to Michael Powell, Chairman, FCC, CC Docket No. 01-338, Attachment at 4 (filed July 26, 2002) ("Cicconi Letter"); *see also* John W. Mayo, "Efficient Forward-Looking Telecommunications

perfectly efficient market, they hypothesize, even though *any given* carrier would have a mix of older and newer technology of various sizes and capacities, there would be *so many* fully facilities-based carriers competing for the business of the same customers that *some* carrier would be able to provide service to any given customer using only the most efficient cutting-edge technology, and that carrier would force a reduction in market price generally to its ideally low costs. This "perfect competition" premise thus logically envisions a market in which many different carriers—not just two or three, but 10 or 20—have deployed networks of their own throughout the calling area. Only in such a world could a purchaser of UNEs always expect to find on the market the most cutting-edge and most efficiently sized network for any given wholesale product.

There are two basic problems with this construct. First, it has all the logical coherence of a Lewis Carroll vignette, because markets do not function that way, particularly in an industry characterized by high capital costs and rapid technological innovation. Even if there were (say) 10 facilities-based local carriers vying for the same customers, each of them would charge those customers rates tending to reflect their average costs, for otherwise none of them could stay in business. Those average costs would necessarily reflect each carrier's mix of newer and older technology.

Networks as a Foundation for TELRIC," at 1.16 (submitted by AT&T in this docket on Dec. 4, 2003) ("While [TELRIC's presumed] efficiency may be challenging for any firm to achieve . . . it defines the cost level that a competitive market is expected to strive for and produce."); William J. Baumol, "TELRIC-Based Prices Are Compensatory Payments," at 2.5 (submitted by AT&T in this docket on Dec. 4, 2003) (ILECs "complain that no firm can be expected to be perfectly efficient, and that adherence to this standard prevents the ILEC from recouping any costs incurred in the past that happen to have been higher than the corresponding efficient costs in markets today. On the contrary, forward-looking pricing provides precisely the compensation that an ILEC could expect if it were operating in an effectively competitive market").

Second, and more fundamentally, the defenders of the pricing status quo are quite selective in how they actually apply this "perfect competition" construct. Specifically, they apply it only to those cost inputs for which it tends to generate low cost estimates; for the other inputs, they inconsistently model the costs of a ubiquitous and dominant carrier whose facilities are used to provide service to the vast majority of customers throughout a calling area. In several different respects, simultaneous use of these incompatible premises—one assuming a market inhabited by multiple competitors, the other assuming a ubiquitous carrier serving the entire market—artificially reduces TELRIC estimates well below the costs that would actually be found even in a perfectly competitive market. *See* Exh. A § 1 at 7-8. This arbitrarily weakens any incentive for either CLECs or ILECs to make facilities investments, even when it is efficient for them to do so.

One way in which the simultaneous use of these incompatible premises depresses UNE rates is by attributing to a hypothetical carrier in a perfectly competitive market the scale economies of a single carrier serving the entire market, even though many of those economies would be unavailable in a perfectly competitive market with (by hypothesis) a very large number of facilities-based competitors. As noted, the per-line cost estimate generated by today's TELRIC models reflects the economies of scale and density achievable by a ubiquitous carrier. Many of those economies would be lost, and per-line cost estimates would inevitably increase, if—as the concept of perfect competition presupposes—the "efficient carrier" were assumed to serve only a small fraction of the customers in a given calling area.

Indeed, if TELRIC were adjusted for analytical consistency so that it assumed many independently owned networks in a perfectly competitive wholesale market, the result—all other things being equal—would be to raise estimated loop placement costs for densely populated

areas to levels now associated, under the commonly applied assumption of one primary carrier, with much more sparsely populated areas. Moreover, the costs of the underlying materials themselves (such as copper, fiber-optic cables, and electronic equipment) would increase because, under current TELRIC models, they are frequently set as if the hypothetical carrier that buys them had the purchasing power of a carrier serving most or all of the lines in a market. Indeed, in many states, rates have even been reduced to reflect the savings the ILEC has attained through company-wide mergers.[19] All these efficiencies would need to be disregarded if regulators followed the "perfectly efficient market" hypothesis to its logical conclusion.

Quite apart from this scale economies mismatch, the combination of the ubiquitous carrier assumption with the perfect-competition assumption likewise distorts calculations of both capital costs and depreciation, arbitrarily driving UNE rates still further below cost. Most states have construed TELRIC to mandate the use of cost of capital figures appropriate for a ubiquitous ILEC in a monopoly or near-monopoly market rather than for one of many facilities-based carriers operating in a perfectly competitive wholesale market. In the *Triennial Review Order*, the Commission took certain steps to reconcile the cost of capital inquiry with the "competitive market" premise of TELRIC by "clarify[ing] that a TELRIC-based cost of capital should reflect the risks of a competitive market."[20] The Commission appears not to have focused, however, on just how high the cost of capital figure would have to be in order to ensure analytical consistency

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[19] *See, e.g.,* Tentative Order, *Generic Investigation re Verizon Pennsylvania, Inc.'s Unbundled Network Element Rates*, Docket No. R-00016683, at 68 (Penn. Pub. Util. Comm'n Oct. 24, 2002) ("*Pennsylvania Tentative UNE Order*"); Final UNE Order, *Massachusetts Public Utilities Commission, Investigation by the Dep't of Telecomm. and Energy on Its Own Motion into the Appropriate Pricing, based upon TELRIC, for UNEs*, D.T.E. 01-20, at 100-112 (July 11, 2002) ("*Massachusetts UNE Order*"); Order on Unbundled Network Element Rates, *Proceeding on Motion of the Commission to Examine New York Telephone Company's Rates for Unbundled Network Elements*, Case 98-C-1357 at 75-76 (N.Y. Pub. Serv. Comm'n Jan. 28, 2002).

[20] *Triennial Review Order* ¶ 680.

with the perfect-competition assumptions underlying other TELRIC inputs.[21] The relevant point of reference would *not* be the costs of capital raised by companies in normally competitive industries. Nor would it be the costs to a facilities-based CLEC of entering the telecommunications market with the current level of competition. The question would instead be how much it would cost a hypothetical telecommunications carrier to raise funds in this capital-intensive and technologically fluid industry *if* the market were populated by many co-equal providers of competing wholesale services, and if it featured facilities-based competition so fierce that it slashed prices instantly to levels reflecting universal deployment of the most efficient available technology. The answer is straightforward: the carrier would be lucky to find willing buyers for junk bonds under these circumstances.

Likewise, the depreciation lives for assets in this perfectly competitive market, with its full and immediate devaluation of all existing facilities upon the appearance of more efficient technology, would be short in the extreme. Suppose that we indulged, for the sake of argument, TELRIC's core fiction that carriers could somehow stay in business in such a market even though the combination of perfect competition, rapid technological innovation, and high fixed costs would deprive them of any opportunity to recover their average costs. In such a market, carriers would quickly lose whatever small customer base they enjoy unless they keep pace with the perfect competition by rapidly replacing their facilities with cutting-edge alternatives almost as soon as they appear. Again, no carrier could actually accomplish that feat and stay solvent. But, if it could, the consequence would be exceedingly brief depreciation lives for all of its network assets.

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[21] *NPRM* ¶ 51 n.99 (noting that the clarifications made in the *Triennial Review Order* "*begin* to address this concern") (emphasis added).

In sum, the defenders of TELRIC's current formulation cannot have it both ways. If they wish to assume a perfectly competitive market in order to produce an "instantaneous downward revaluation of the economic value of existing assets in response to the rollout of newer, more efficient technology,"[22] they will have to accept the logical consequences of that construct for scale economies, capital costs, and depreciation lives. But if those latter inputs are to reflect conditions in the actual market, consistency will require abandoning the "optimally efficient network" construct in favor of more a grounded methodology that takes as given the characteristics of the ILEC's existing network, as discussed in Part II below.

2. The Current Version of TELRIC Is Radically Indeterminate in Application.

Quite apart from the methodological inconsistency at the heart of TELRIC in its current form, the *NPRM* expresses well-justified concern that "the excessively hypothetical nature of the TELRIC inquiry" has produced "a 'black box' from which a variety of possible rates may emerge," and the "variable results may not reflect genuine cost differences." *NPRM* ¶¶ 6-7. Indeed, as Professors Aron and Rogerson demonstrate in the attached analysis, the radically divergent UNE rates that have emerged from this process do *not* correspond to any available measure of state-by-state cost differences. *See* Exh. A § 4.4. This "lack of predictability," the *NPRM* explains with considerable understatement, "is difficult to reconcile with our desire that [network element] prices send correct economic signals." *NPRM* ¶ 7.

TELRIC's radical indeterminacy, however, was predictable from the beginning. Because the current framework rests so heavily on the speculative costs of hypothetical networks, TELRIC rates can bear little relationship to real-world networks and real-world costs, even of competitors that are efficient. For example, the application of TELRIC in some SBC states has

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22 Cicconi Letter, Attachment at 4 (emphasis omitted).

produced loop distribution fill factors in the neighborhood of 80-85%—figures that no comparable ILEC or CLEC has ever remotely approached, much less matched, and which reflect nothing but the testimony of CLECs' hired "experts" as to what a hypothetical, least-cost, most efficient carrier ought to be able to achieve.[23]

More generally, because it is so open-ended, TELRIC has produced a variety of highly counterfactual assumptions about the costs of building a network. For example, some regulators have discounted the extra costs imposed by urban and suburban development (buildings, sidewalks, and paved roads) on the task of digging up the ground to place cable, reasoning that CLECs should have the "same opportunity" for cost savings that the ILEC had when building its own network many years ago, before development.[24] As the *NPRM* explains, this approach "erroneously assumes away not just the features of an incumbent LEC's existing network but also attributes of the real world in which incumbents and competitors operate." *NPRM* ¶ 47.

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[23] *See, e.g.*, Opinion, *Application of Ameritech Ohio for Approval of Carrier-to-Carrier Tariff*, Case Nos. 96-922-TP-UNC and 00-1368-TP-ATA (Ohio Pub. Utils. Comm'n Jan. 31, 2002) (85%) ("*Ohio UNE Order*"); Second Interim Order, *Investigation into Forward-Looking Cost Studies and Rates of Ameritech Illinois for Interconnection, Network Elements, Transport and Termination of Traffic*, Docket Nos. 96-0486 & 96-0569 (Ill. Commerce Comm'n Feb. 17, 1998) (80%) ("*Illinois UNE Order*").

[24] *See, e.g.*, Ruling on Applications for Rehearing, Reargument, or Reconsideration, *U S WEST Communications, Inc.'s Statement of Generally Available Terms and Conditions*, Docket No. 99A-577T, Decision No. C02-409, at 30-31 (Colo. Pub. Utils. Comm'n Apr. 17, 2002) (citing "the TELRIC assumptions of the HAI model and of other states' TELRIC prices" in "refrain[ing] from assuming a large share of expensive placement techniques to reflect existing structures," even though Qwest "may have some grounds in arguing [that] such an assumption is fanciful in terms of what real forward-looking costs will be"); Phase II Opinion and Order, *Investigation into Qwest Corp.'s Compliance with Certain Wholesale Pricing Requirements for Unbundled Network Elements and Resale Discounts*, Docket No. T-00000A-00-0194, Decision No. 64922, at 12-14 (Ariz. Corp. Comm'n June 12, 2002) ("*Arizona Order*") (basing structure sharing assumptions on conditions that "existed when [the ILEC network] was built"—when real estate developments were first under construction, when "a significant amount of developer-provided trench" was available, and when other utilities were not "already in place"); *id.* at 12 (similar decision for placement method assumptions).

Similarly, some TELRIC pricing models determine the placement and total mileage of loop facilities not by examining the architecture of the current network, but by running abstract mathematical algorithms that assume away obstructions (such as buildings and right-of-way restrictions) that can make loop deployment costly in the real world.[25]

Part III addresses these and other specific input issues at greater length. The purpose in raising these particular examples here is simply to illustrate the consequences of a cost model that permits regulators to speculate without limit about the supposed efficiencies of nonexistent carriers and networks. The inevitable result is the widespread adoption of counterfactual cost assumptions. In practice, these almost always lead to artificial *reductions* in UNE rates and corresponding distortions of price signals. As Professors Aron and Rogerson explain, the regulatory bodies that set UNE rates, like all government agencies, have strong incentives to overweight the short-term benefits of their decisions and to underweight the long-term costs to the public.[26] In this context, this means that the more discretion is built into the UNE ratesetting process, the more likely it is that rates will be set at levels that, while encouraging a high degree

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[25] *Arizona Order* at 21-22 (adopting "minimum spanning tree" function within the HAI cost model and noting that "the MST is used by the FCC in the FCC Synthesis Model"); *see* Davis Letter at 4; *cf.* Memorandum Opinion and Order, *Application by Qwest Communications Int'l, Inc. for Authorization to Provide In-Region, InterLATA Servs. In the States of Colorado etc.*, 17 FCC Rcd 26303, 26418 ¶ 201 (2002) ("*Qwest 9-State 271 Order*"), at ¶ 201 (noting that the Colorado PUC rejected the use of the MST function because it would be inappropriate to ignore "'real world limitations or sources of network placement cost such as buildings, rivers, lakes, etc.'"). *See generally infra* Part III.C.1.

[26] *See* Exh. A § 3.2; *see also, e.g.*, Michael Abramowicz, Speeding Up the Crawl to the Top, 20 YALE J. ON REG. 139, 158-159 (2003); Jonathan R. Macey & Geoffrey P. Miller, Deposit Insurance, the Implicit Regulatory Contract, and the Mismatch in the Term Structure of Banks' Assets and Liabilities, 12 YALE J. ON REG. 1, 18-19 (1995).

of non-facilities-based competition, will disserve the public's long-term interest in promoting facilities upkeep and investment.[27]

Exacerbating the problem is what the Commission aptly terms the "black box" character of current TELRIC cost modeling. The models championed by the CLECs and adopted in many states purport to address the costs of a purely hypothetical, optimally efficient network and take nothing for granted in the existing network except for the location of wire centers. The inner workings of such models are typically known only to a few people who have gained specialized knowledge about the applicable modeling software and the detailed formulas that drive the results. For that reason, and because these models rest so heavily on hypothesis, the current formulation of TELRIC is particularly susceptible to result-oriented calculation. As one Commissioner has observed, the Commission's own Synthesis Model—a modified version of which the Wireline Competition Bureau adopted for setting UNE rates in Virginia and which CLECs have urged other states to use in setting their own rates—is "an immensely complicated computer program . . . completely dependent on hundreds of assumptions about the local exchange markets and costs," and "simply by making different assumptions about local exchange networks, or by picking different input values for costs, the Commission is able to push the end result in whatever direction it chooses."[28]

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[27] As Representatives Tauzin, Dingell, and Upton have recognized, the problems with TELRIC pricing "ha[ve] grown steadily worse in recent years, as the initial prices that states established under the Commission's pricing rules have been dramatically reduced based on more extreme assumptions about the imaginary network." Letter from W.J. "Billy" Tauzin, John D. Dingell, and Fred Upton to the Honorable Michael K. Powell, at 2 (July 29, 2003). This, in turn, has been one of the "leading factors" contributing to the massive decline in telecommunications investment during the past three years. *Id.*

[28] *See generally* Tenth Report and Order, *Federal-State Joint Board on Universal Service; Forward-Looking Mechanism for High Cost Support for Non-Rural LECs*, 14 FCC Rcd 20156, 20430 (1999) ("*Inputs Order*") (dissenting statement of Commissioner Harold Furchtgott-Roth).

Numerous state cost proceedings have likewise illustrated that the disputes among opposing modeling specialists can be so technical and obscure that no one fully understands where the ultimate numbers have come from. Professors Aron and Rogerson's analysis demonstrates that the consequences are immense: From these proceedings emerge radically different UNE rates that state-by-state differences in population or geography cannot explain. *See* Exh. A § 4.4. By itself, the investment-chilling uncertainty produced by such indeterminacy justifies tying UNE rates more closely to the real-world attributes of the ILEC's actual network, quite apart from the need to resolve the methodological contradictions discussed above.

II. UNE RATES SHOULD BE BASED ON AN ILEC'S ACTUAL FORWARD-LOOKING COSTS.

A. A Model of Actual Forward-Looking Costs.

One theoretically possible means of resolving TELRIC's current use of self-contradictory cost assumptions would be to retain the hypothetical network premise and affirm the assumption that the forward-looking costs of that network instantaneously reflect all efficiency-enhancing innovations, but clarify that this approach (i) precludes the inconsistent assumption of ubiquitous service to all customer locations, and (ii) requires depreciation lives and a cost of capital that fully account for the risks of operating in such a hypothetical market. This approach is undesirable for at least two reasons. First, because this approach would not be based on the costs of any actual network or carrier, it would perpetuate and even heighten TELRIC's current emphasis on speculation about what type of network a hypothetically efficient carrier would build if it were to enter the market today. This would involve the same unpredictable flights of fancy that have undermined public confidence in the current iteration of TELRIC and have produced wildly inconsistent UNE rates from one state to another. Second, if faithfully implemented, this approach could produce quite dramatic increases in UNE rates because, as

noted above, the cost of capital would necessarily be exorbitant, and the depreciation lives extremely short.

A far preferable means of resolving TELRIC's internal contradictions would be to base UNE rates on the costs incurred by an efficient carrier occupying the ILEC's market position—using a cost of capital and a set of depreciation lives applicable to the ILEC, given the current level and direction of competition—but to abandon the premise that each aspect of that carrier's network will reflect the cutting-edge efficiency of a perfectly competitive market or anything resembling it. Under this approach, the concept of "efficiency" would denote *not* the unattainable efficiency of a next-generation network deployed instantaneously today by a hypothetical carrier with no prior investment history, but instead the more realistic efficiency of the ubiquitous networks built up over time and operated by the ILECs whose "costs" are at issue.

There can be little question, moreover, that those networks are highly efficient *as ubiquitous networks* designed to meet carrier-of-last resort and service quality obligations throughout the relevant geographic regions. All major ILECs have been subject to price cap regulation for many years, and such regulation has given them powerful incentives to maximize the efficiency of their networks and operations, as Professors Aron and Rogerson confirm. *See* Exh. A § 5.[29] Increasing facilities-based competition from wireless carriers, cable companies, and facilities-based CLECs—including competitive access providers—has reinforced those efficiency incentives and has led the major ILECs to slash capital expenditures and lay off tens of thousands of employees. For example, from the end of 2000 to December 13, 2003, SBC reduced its wireline work force from 189,000 to 155,000 employees, a reduction of almost 18%,

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[29] *See generally USTA v. FCC*, 188 F.3d 521 (D.C. Cir. 1999); *National Rural Telecomm. Ass'n v. FCC*, 988 F.2d 174 (D.C. Cir. 1993).

and recently announced plans to make additional cuts in 2004.[30] Verizon recently reported that it had induced more than 21,000 of its employees to accept an early retirement offer.[31] Even so, Wall Street continues to punish ILEC stock prices because financial analysts express growing concern about whether, to preserve margins in an increasingly competitive environment, the ILECs have any fat left to cut. Earlier this year, for example, Morgan Stanley analysts "downgraded their view" of the Bell companies in part because "'[t]he ability of the companies to materially cut capex [capital expenditures] and headcount from here appears to be diminishing,' the analysts said."[32] And, among the major ILECs, SBC in particular is now recognized as having the "least capex left to cut."[33]

Of course, there may be aspects of any carrier's network that fall short of cutting-edge standards for technological efficiency. Even in extremely competitive markets, no firm instantaneously replaces all of its facilities as each improvement in technology occurs. Grounding all aspects of the forward-looking cost inquiry on conditions in an ILEC's actual network is the only reasonable means of measuring actual forward-looking costs while retaining the cost-lowering assumptions associated with the incumbent's network.

The Commission should make this presumption of network efficiency—*i.e.*, the presumption that ILEC networks are efficient *as ubiquitous networks*—irrebuttable as to all

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30 *See* Shawn Young, *SBC to Cut Jobs, May Raise Dividend*, Wall Street Journal, Dec. 10, 2003, at B6.

31 *Verizon Announces Estimated Charges and Ongoing Savings From Voluntary Separation Plan* (Dec. 9, 2003), *available at* http://investor.verizon.com/news/VZ/2003-12-09_X603687.html.

32 John Curran, "Analysts Offer More Cautious View of Prospects for Bell Companies," TR Daily, Apr. 3, 2003 (internal alteration omitted).

33 *See* Precursor Reports, *Telecom Hemorrhage and Separation from Economic Growth Continues* (Nov. 17, 2003).

LECs subject to price cap regulation in a particular state. There are significant advantages to the establishment of bright-line rules in any regulatory setting.[34] Those advantages are particularly pronounced in this context, where the absence of bright lines in TELRIC proceedings since 1996 has produced opacity, unpredictability, extreme litigiousness, and radical state-by-state inconsistencies in outcome. And not much would be gained in any event by making this presumption rebuttable, given that price cap regulation and marketplace competition have exerted enormous pressure on the major ILECs to make efficient operational and investment decisions. Finally, quite apart from that consideration, basing TELRIC on an ILEC's existing network will help ensure that CLECs will have the incentive to build their own facilities whenever they can do so on a more efficient basis than the ILEC—and will therefore encourage facilities-based competition to appear precisely where and when the ILEC's network is less than state of the art.

As discussed more fully below, UNE rates set under this revised approach would reflect the present cost of building and maintaining the ILEC network as it will be constituted (excluding any obsolete facilities) at the midpoint of a three-year "planning period" of network evolution as documented by actual ILEC engineering plans and guidelines. TELRIC would continue to ask, as before, "what it would cost today to build and operate an efficient network . . . that can provide the same services as the incumbent's existing network." *NPRM* ¶ 30. The principal difference is that this new approach would recognize that ILEC networks are efficient in the sense relevant to a properly reformulated cost inquiry: they are efficient as ubiquitous

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[34] *See, e.g., Time Warner Entm't Co., L.P. v. FCC*, 240 F.3d 1126, 1141 (D.C. Cir. 2001) (approving of the FCC's decision to set a bright line rule because such a rule "reduces regulatory costs, provides regulatory certainty, and permits planning of financial transactions."); *see also WorldCom, Inc. v. FCC*, 238 F.3d 449, 461 (D.C. Cir. 2001) (noting that when lines have to be drawn, agencies such as the FCC are authorized to make "rational legislative-type judgments") (quoting *WJG Tel. Co. v. FCC*, 675 F.2d 386, 388-89 (D.C. Cir. 1982)).

networks. This new approach would thus be, as the Commission proposes, "more firmly rooted in the real-world attributes of the [ILEC's] existing network, rather than the speculative attributes of a purely hypothetical network." *Id.* ¶ 4. And it would thereby resolve the "central internal tensions" discussed above, *id.* ¶ 50, and, equally important, alleviate much of TELRIC's present indeterminacy.

Part III of these comments addresses in detail how this general approach would affect the determination of particular inputs, but we note several major themes at the outset. Under SBC's proposal, TELRIC would take as given not just the locations of existing wire centers and customer locations, but other characteristics of the existing network, such as those relating to routing, configuration, architecture, and technology mix. The investment-related costs of individual network components (such as switches, cables, and poles) would be determined by identifying the costs the incumbent actually incurs to obtain and deploy those components today or expects to incur over the planning period. The costs of maintaining and operating the incumbent's network would reflect the incumbent's current maintenance and operating expenses, with adjustments for inflation and productivity improvements that the incumbent actually expects to achieve during the planning period. The cost of capital would reflect the risks that incumbents face from current and anticipated future competition and regulation. Depreciation schedules would reflect the GAAP lives used for an ILEC's financial statements. And the incumbent would be entitled to recover the costs it *actually* incurs when performing non-recurring tasks for CLECs, with adjustments for any technology improvements that the ILEC plans to implement during the relevant period.

This "actual forward-looking cost" approach is far preferable to the purely hypothetical, perfect-competition approach described above, not just because it would require less dramatic

adjustments to current TELRIC prices and would be less dependent on hypothetical speculation, but more fundamentally because it much more faithfully represents an efficient production model achievable in the real world. It is also closer than the alternative to the Commission's original conception of TELRIC. For example, one passage of the *Local Competition Order* states that TELRIC, despite how it generally has been applied over the years, is at bottom designed to measure the "costs that incumbents actually expect to incur."[35] In the *UNE Remand Order*, the Commission likewise entitled ILECs to recover certain "loop provisioning" costs that probably would not arise in an efficient network built from scratch today.[36] In authorizing such recovery, the Commission reasoned that an ILEC's actual network facilities must be taken as given—that "the incumbent LEC may incur costs" in modifying those facilities and, "under our rules, the incumbent should be able to charge" for incurring those costs.[37] The Commission should now extrapolate from these principles to UNE pricing as a whole: Prices should reflect the actual forward-looking costs of the ILEC whose network is at issue, rather than the speculative forward-looking costs of a hypothetical "most efficient" carrier.

B. A Model Based on Actual Forward-Looking Costs Is Theoretically Appropriate.

The modifications proposed here would mark only an incremental change in theory from TELRIC as it is formulated today. As the Commission observes, any forward-looking cost

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[35] *Local Competition Order*, 11 FCC Rcd at 15848-49 ¶ 685; *see also* 47 U.S.C. § 252(d)(1)(i) (compensation must reflect the "cost . . . of providing" UNEs).

[36] Third Report and Order and Fourth Further Notice of Proposed Rulemaking, *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, 15 FCC Rcd 3696, 3784 ¶ 193 (1999) ("*UNE Remand Order*").

[37] *Id.* Although the Commission subsequently granted the states "discretion to conclude that loop conditioning costs are not forward-looking costs," *Triennial Review Order* ¶ 641 n.1944, it neither compelled them to do so nor explained its departure from its treatment of the issue in the *UNE Remand Order*.

inquiry that accounts for total network costs is, in essence, a replacement cost methodology, because it asks "what it would cost today to build and operate an efficient network . . . that can provide the same services as the incumbent's existing network." *NPRM* ¶ 30. Perhaps the most critical factor that distinguishes one replacement cost methodology from another is the extent to which each holds constant—or takes "as given"—particular characteristics of the existing network in calculating how much it would cost to replace their functions.

Significantly, *no one* proposes the use of a so-called "green field" approach to forward-looking cost, which would take *nothing* as given about the existing network. Indeed, TELRIC itself is two steps removed from the green field approach, because it already takes as given two key aspects of the existing network: its use of wireline (rather than wireless) technology, and its placement of existing wire centers. The Commission told the Supreme Court that "such a hybrid of 'existing' and 'most efficient' design . . . serve[s] multiple purposes," including "encourag[ing] new entrants to design and build networks of their own" and "enabl[ing] state public utility commissions to implement TELRIC more expeditiously."[38] But the Commission rightly acknowledged that it "might reasonably have drawn the line somewhere else within the structure of the network" in deciding how much about that network to take as given for purposes of determining its replacement costs.[39]

As the *NPRM* suggests, experience with TELRIC over the past several years now shows that the line *must be* drawn somewhere else if the Commission is to achieve the benefits it attributed to the partial reliance of the current methodology on aspects of the "existing" network. Like taking "as given" existing wire center locations, taking "as given" the ILEC's additional

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[38] Reply Brief for Petitioners United States and the FCC, *Verizon Communications Inc. v. FCC*, 535 U.S. 467 (2002), 2001 WL 881216 at *5 ("FCC Reply Br.").

[39] *Id.*

network attributes would do far a better job than the current version of TELRIC of "encourag[ing] new entrants to design and build networks of their own" and "enabl[ing] state public utility commissions to implement TELRIC more expeditiously."[40] As to the first point, TELRIC's internal contradictions should be resolved by making its various input assumptions mutually consistent and more realistic in order to give CLECs accurate price signals about when it would be efficient, and when inefficient, to build facilities of their own. As explained, CLECs will be discouraged from incurring the costs of investing in facilities of their own if they can lease them instead at rates that arbitrarily assume many of those costs away. As to the second point, the objectives of regulatory efficiency and transparency would be better served by an increased reliance on facts observable in the real world rather than by continued abstract speculation about hypothetical networks represented in computer models inscrutable to the average person.

Moreover, as the Commission itself suggests (*NPRM* ¶ 54), the approach proposed here would avoid the methodological anomalies that would arise from a pure "reproduction cost" methodology, which measures the current cost of replicating all existing network assets in the exact physical form that they take today. First, as discussed, SBC's approach asks how much it would cost to replace network assets in the technological form they will collectively take at the midpoint of an additional three-year period of the expected facilities upgrades documented in an ILEC's actual engineering plans.[41] Although this approach would take as given whatever

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[40] *Id.*

[41] Three years is both the typical approximate duration of rates established in cost studies throughout the nation and, in most cases, the farthest in advance that ILECs plan concrete network upgrades. Basing the cost inquiry on the state of the network at the midpoint of a three-year planning period is a reasonable and highly administrable proxy for accommodating network evolution on a rolling basis throughout that period. Although the *NPRM* suggests that the Commission may consider adopting study periods longer than three years for these purposes, *see*

existing facilities will remain in the network at that point, it would also capture the actual technological evolution that will occur in the incumbent's network within that period. This methodology would thus ensure that CLECs face no competitive disadvantage in using UNEs to compete with ILECs, because UNE rates would reflect all changes in efficiency resulting from the ILEC's network evolution over the course of the typical period covered by the rates in a given cost proceeding. As the Commission has suggested, this approach would "provide an appropriate middle ground between the hypothetical assumptions required under our current rules," on the one hand, and a pure reproduction cost approach on the other. *NPRM* ¶ 54.

SBC's proposal departs from a reproduction cost methodology in a second, equally important respect as well. It is conceivable that, in a few circumstances, the present-day replacement costs of the ILEC's facilities mix, even as it evolves within the planning period, would be anomalously high because a few facilities in that mix are no longer available on the market—and therefore could be obtained, if at all, only at prices radically disproportionate to their underlying value. For example, analog switches are not generally available on the market, even though some may still be found in the network, and it may be impossible to build one today without constructing an entire factory for that purpose. In such circumstances (which are likely to be uncommon), the obsolete facilities should be excluded from the facilities mix. That

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NPRM ¶ 54, that would be inappropriate for two related reasons. First, the central objective of this proceeding is to reduce speculation in the application of TELRIC, and resolve TELRIC's basic internal contradiction, by tying the cost inquiry to the real-world experience and plans of the ILEC itself. Because ILECs do not generally plan most network upgrades more than three years in advance, expanding the planning period beyond three years would reintroduce precisely the counterfactual speculation that the Commission seeks to avoid in this proceeding. Second, even the *present* version of TELRIC restricts the cost inquiry to "the most efficient telecommunications technology *currently available.*" 47 C.F.R. § 51.505(b)(1) (emphasis added). Extending the study period beyond three years would almost certainly lead to speculation about *future* technology that is *not* currently available—and would detach TELRIC even more radically from any coherent understanding of present-day forward-looking costs.

exclusion would preclude the potential anomalies that might otherwise be presented by the type of "reproduction cost" methodology discussed in the *NPRM*. *NPRM* ¶ 69.[42]

The Commission has also asked whether, by taking more as given about the existing network than TELRIC does in its present form, an approach that reflects an ILEC's actual forward-looking costs is based impermissibly on "embedded costs." *NPRM* ¶ 55. It is not. The question under this approach is not "how much did the ILEC spend on the network facilities requested by a CLEC," but "how much would it cost the ILEC today to replace and maintain such facilities, consistent with the technology choices and network configuration (including feeder and distribution routes) in the incumbent's actual network, and taking account of facilities upgrades over the planning period." Thus, as noted above, if a particular facility actually cost the ILEC $2000 three years ago but would cost $1000 today—because, for example, technological innovation in the interim has lowered the market price—the forward-looking cost of that facility is $1000, not $2000 (or whatever undepreciated portion of that figure remains on the ILEC's books). An embedded cost methodology, by contrast, would entitle the ILEC in this example to recovery of the actual $2000 that it paid or still carries, not half that figure, as under our proposal.

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[42] The modifications proposed here would not, of course, involve a shift from a long-run to a short-run incremental cost methodology. *Cf. NPRM* ¶¶ 55-56. Roughly speaking, the difference between the two in this regulatory context is that "short-run incremental cost" measures only the (sometimes negligible) marginal costs of accommodating a competitor's needs on already-built network facilities, whereas "long-run incremental cost" also measures (among other things) capital investment in the facilities themselves. *See generally* Alfred Kahn, *The Economics of Regulation: Principles and Institutions* 63-122 (1989). For example, the short run incremental cost of providing an already-installed loop to a CLEC might be limited to the cost of a hot cut and miscellaneous expenses, whereas the long run incremental cost would also include (among other things) the materials and placement costs of the loop. There is no question that, if revised as proposed, TELRIC would remain very much a "long run incremental cost" methodology, because it would properly continue to account for this broader category of costs.

At the same time, as the Commission itself has recognized under even the present version of TELRIC, an ILEC's recent historical costs can be highly probative evidence of forward-looking costs.[43] Indeed, recent historical costs are often the best evidence for determining forward-looking costs, and—with respect to some costs, such as those reflected in current contracts for labor or materials—they may be the *only* valid evidence of forward-looking cost. We discuss these issues in greater detail in Part III of these comments.

Finally, focusing the cost inquiry more closely on an ILEC's actual network would not place CLECs at any irremediable *informational* disadvantage in litigating any factual issues about which the ILEC, as owner of that network, may have special knowledge.[44] With respect to a number of cost inputs, this informational concern does not even arise, because the cost information in question is either publicly reported (such as the depreciation life ranges used to prepare the ILEC financial reports) or documented in third-party contracts (such as materials costs or labor rates). Indeed, even under the current formulation of TELRIC, the cost inquiry often begins with an analysis of an ILEC's actual costs, and modifying the substantive inquiry as proposed here would create few forms of informational asymmetry that do not already exist.

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[43] *See, e.g.*, Brief for Appellees FCC and United States at 17-18, *AT&T Corp. v. FCC*, 220 F.3d 607 (D.C. Cir. 2000) ("If appellants are claiming that TELRIC precludes consideration of historical costs in calculating forward-looking costs, they are wrong. Indeed, in the very universal service proceeding upon which appellants rely, the FCC itself used historical data to estimate forward-looking costs."); *see also* Memorandum Opinion and Order, *Joint Application by BellSouth Corp., BellSouth Telecommunications Inc. and BellSouth Long Distance, Inc. for Provision of In-Region InterLATA Services in Georgia and Louisiana*, 17 FCC Rcd 9018, 9039-40 ¶ 36 (2002) (finding that rates based on existing network were TELRIC-compliant on the ground that "[w]hile BellSouth's loop model was based on a sample of existing loops, the record demonstrates that loops were redesigned to reflect forward-looking criteria rather than reproducing the existing network."); *AT&T Communications, Inc. v. BellSouth Telecomm., Inc.*, 20 F. Supp. 2d 1097, 1101 (E.D. Ky. 1998) ("The PSC was within its discretion when it rejected AT&T's cost studies that were based on a perfectly efficient hypothetical model for studies that were based on BellSouth's preexisting network.").

[44] *See NPRM* ¶ 60. *See generally Local Competition Order*, 11 FCC Rcd at 15847 ¶ 680.

Finally, to the extent that this approach does create such asymmetry in particular circumstances, the Commission could remedy that concern by designing narrowly tailored discovery obligations and appropriate confidentiality protections to ensure that all parties have relevant data and that the UNE pricing process is streamlined.

III. TO ENSURE ACCURATE IMPLEMENTATION OF TELRIC REFORMS, THE COMMISSION SHOULD PROVIDE SPECIFIC GUIDANCE ON THE FOLLOWING KEY INPUT ISSUES.

A. Cost of Capital

The cost of capital input is designed to ensure that the incumbent's investors are adequately compensated for their investments given the relevant market and regulatory risks. The cost of capital factor is a critical input in all recurring UNE rates because, once the cost of capital is calculated, it is applied as a multiplying factor to *all* investments to ensure proper cost recovery. As discussed above, and as the Commission has observed, UNE rates can send meaningful economic signals only if "state commissions . . . use a consistent set of assumptions when they calculate the three components of rates (operating expenses, cost of capital, and depreciation expense)." *NPRM* ¶ 84. The Commission accordingly clarified in the *Triennial Review Order* that "[t]o calculate rates based on an assumption of a forward-looking network that uses the most efficient technology (*i.e.*, the network that would be deployed in a competitive market), without also compensating for the risks associated with investment in such a network, would reduce artificially the value of the incumbent LEC network and send improper pricing signals to competitors."[45] Despite this clarification, further guidance is needed from the Commission on this critical input.

As discussed in Part I, retention of TELRIC as it typically has been applied, which presupposes a perfectly competitive market in which the value of all network assets instantaneously reflects all technological innovation, would require raising the cost of capital calculation to very high levels. The question would be how much of a risk premium reasonable

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[45] *Triennial Review Order* ¶ 682; *see also id.* ¶ 675 (noting that cost of capital and depreciation are "the[] two components of TELRIC [that] are the primary vehicles by which any risks associated with new facilities and new services may be reflected in UNE prices").

investors would demand when lending money to yet another facilities-based entrant into an already crushingly competitive telecommunications marketplace populated by *many* fully facilities-based rivals, all of whom are competing for the same customers and at least one of whom has all of the latest, most efficient technology to serve any given customer. In those market conditions, the entrant would be lucky to obtain financing on junk-bond terms. That is presumably not the outcome the Commission hoped to produce when it "clarified" in the *Triennial Review Order* that cost of capital calculations should assume a competitive market, but it is the logical consequence of bringing analytical consistency to TELRIC.

At the other end of the spectrum, CLECs have advocated extremely *low* costs of capital in state UNE proceedings, arguing that incumbents do not face substantial competition of any kind even in today's actual market.[46] And, under the current version of TELRIC, state commissions have adopted costs of capital as low as 8.82%.[47] These estimated capital costs do not account for the risks of markets with any competition, let alone "the price that would exist in a market in which there is facilities-based competition," which the Commission has established as a basic requirement of TELRIC,[48] or the extreme risk inherent in the perfectly competitive market modeled by the current version of TELRIC. Moreover, application of TELRIC has produced wildly inconsistent costs of capital across states: in SBC's regions, for example, the

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[46] *See* Opening Comments of Joint Applicants AT&T Communications of California, Inc. and WorldCom, Inc., *Joint Application of AT&T Communications of California, Inc (U 5002 C) and WorldCom, Inc. for the Commission to Reexamine the Recurring Costs and Prices of Unbundled Switching in Its First Annual Review of Unbundled Network Element Costs Pursuant to Ordering Paragraph 11 of D.99-11-050, et al.*, Application 01-02-024, *et al.*, at 19 (Cal. Pub. Utils. Comm'n Oct. 18, 2002) (advocating 7.70% for SBC).

[47] *See* Decision and Order, *Board's Review of Unbundled Network Elements Rates, Terms and Conditions of Bell Atlantic-New Jersey, Inc.*, Docket No. TO00060356, at 40 (N.J. Bd. Pub. Utils. Mar. 6, 2002).

[48] *See NPRM* ¶ 83; *Triennial Review Order* ¶¶ 680-84.

state commission-ordered costs of capital range from 12.19% (in Connecticut) to 9.52% (Illinois), with *no* correlation to any real-world distinctions in the levels of risk SBC faces in those markets.

If TELRIC were reformed as proposed above to reflect the actual forward-looking costs of the ILEC, the appropriate cost of capital input would be neither the anomalously high figure applicable in a perfectly competitive market nor the anomalously low figure proposed by the CLECs in these state proceedings. It would instead be a cost of capital based on market evidence that reflects the level of risk that the ILEC *actually* faces in the marketplace as it currently exists and is expected to evolve. *Cf. NPRM* ¶ 84. Unlike some UNE rate inputs, the cost of capital must be calculated through a model, but it can still be based on relevant real-world evidence. The Commission accordingly should establish certain principles to guide the selection of the real-world evidence and assumptions that appropriately account for the relevant risk. The Commission should also provide guidance on each of the major components of a cost of capital calculation: (i) the cost of equity, (ii) the cost of debt, and (iii) the relative weighting of those two figures in an overall capital structure.[49]

1. Risk Assumptions

The Commission should first establish that the risk involved in the provision of UNEs is not the risk that incumbents faced years ago as monopoly providers of retail services. Instead, the cost of capital should take into account not only the very real competition that already has developed to date, but also the additional risk that competitors will likely capture more and more

[49] The cost of capital calculation consists of three major components: the cost of equity, the cost of debt, and the capital structure. Once the first two components are determined, they are weighted according to the capital structure to produce an overall cost of capital. For example, a 13.0 percent cost of equity and a 7.18 percent cost of debt combined with a capital structure consisting of 86 percent equity and 14 percent debt, would produce an overall weighted average cost of capital of 12.19 percent [(13.0 x .86) + (7.18 x .14) = 12.19].

of the incumbents' market share over time. It is undoubtedly the potential continued growth rate of CLECs' market share that can most affects the incumbent's current risks and incentives. *See, e.g.*, Exh. A §§ 1, 2.2. Investors will obviously consider these forward-looking risks in establishing the terms on which they are willing to invest, and thus a cost of capital that is intended to reflect the true competitive risk associated with investment in the incumbent's network must similarly reflect these forward-looking considerations.

Indeed, investors have expressed increasing skepticism about the prospects for the major ILECs in a marketplace that appears highly vulnerable to ruthless intermodal competition, some going so far as to declare that "U.S. ILECs are in mortal peril."[50] Wireless carriers have captured significant market share in competition with incumbents' voice services. At the end of 2002, such carriers had 140 million subscribers, and $75 billion in revenues for the year.[51] Cable modem providers have begun gaining in the voice telephony market as well, and Time Warner Cable recently announced agreements with MCI and Sprint that would allow it to "continue its

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[50] *See ILECs 'Doomed' By Next-Generation Networks, Experts Say*, Communications Daily (Nov. 10, 2003) (quoting John McQuillan, co-chairman of Next Generation Networks); Alex Salkever, *Why the Bells Should Be Very Scared; Free Voice Calls Transmitted Over the Internet Are Fast Becoming Mainstream. To Survive, Today's Phone Companies Must Adjust, Radically*, Business Week Online (Nov. 11, 2003) ("twisted copper is on the verge of giving way to the Internet"); Reinhardt Krause, *With Broadband, Bundling, SBC Aiming for Comeback*, Investor's Business Daily (Nov. 14, 2003) ("The growth of VoIP, or voice over Internet protocol, is also [in addition to wireless] threatening the Bells."); *see also FCC Reports Wireless Sub Growth is Leveling, Mobile is on Rise*, Communications Daily (June 27, 2003) (estimating that wireless traffic has displaced 30 percent of total wireline minutes); Business Wire, *Consumers Abandon Landlines and Increase Mobile Call Volumes, Creating Strong Growth in the Wireless Market, Reports Yankee Group* (Sept. 16, 2002) (predicting that, by 2006, U.S. mobile subscribers will increase by 50% and will "dominate personal calling and severely cannibalize landline minutes of use.").

[51] Wireline Competition Bureau Industry Analysis and Technology Division, "Trends in Telephone Service," at 11-1 (August 2003), *available at* http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/trend803.pdf.

aggressive rollout" of its residential phone service.[52] And VoIP providers, who substitute their service (over broadband) for circuit-switched telephony, present a clear threat to the core of the incumbents' business.[53] Just last week, AT&T announced its plans for imminent implementation of "the first national rollout of [VoIP]" to residential and business customers.[54] Incumbents also face significant and increasing competition in the form of UNE-based and facilities-based CLECs. AT&T's Chairman and CEO recently touted his company's "position of strength," which he attributed to its "scale, financial strength and industry leading brand."[55]

As a recent Ernst & Young report concluded, "[m]obile wireless, cable telephony, and voice over IP are all seeking to take market share from traditional telephone companies . . . intermodal competition is shaking up business-as-usual for fixed telephone service providers."[56] Analysts thus predict that all ILECs will "continue to face competitive line loss and intensive

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52 *See Time Warner Cable Partners with MCI And Sprint For Nationwide Rollout Of Digital Phone* (Dec. 8, 2003), *available at* http://media.aoltimewarner.com/media/press_view.cfm?release_num=55253663; *see also* Monica Rivituso, *Telechasm*, SmartMoney.com (Feb. 26, 2003), *available at* http://www.smartmoney.com/sectorpatrol/index.cfm?story=20030225 (finding that "traditional landline telephony is feeling the heat from wireless carriers and cable operators alike."); Mark Main, *The Emerging Consumer VoIP Market*, Access@Ovum (visited Dec. 15, 2003), *available at* http://www.ovum.com/go/content/c,37484 (arguing that VoIP provided by cable operators is a direct threat to ILECs).

53 *See* Salkever, *supra* note 52 (noting IBM's announcement of plans to move 80% of its employees to VoIP and that "VOIP has caught fire over the past two years with corporate customers"); *see also ILECs 'Doomed' by Next-Generation Networks, Experts Say*, *supra* note 52.

54 Andrew Backover, *AT&T to Add Internet Phone Service*, USA Today (Dec. 11, 2003), *available at* http://www.usatoday.com/money/industries/telecom/2003-12-11-att_x.htm.

55 Press Release, AT&T Chairman Outlines Aggressive Competitive Strategy at CSFB Conference (Dec. 11, 2003), *available at* http://biz.yahoo.com/prnews/031211/nyth130_1.html.

56 Darla Martin Tucker, "Competition Ringing as New Players Join in Phone Fray," *The Business Press* (Sept. 29, 2003).

pricing pressure" over the near and long term as regulatory developments, such as wireline-to-wireless local number portability, and technological developments, such as VoIP, take hold.[57] In SBC's region in particular, as a result of these developments, the number of residential local phone lines fell 4.1% in the third quarter of 2003 alone.[58]

In addition to these competitive risks, ILECs face separate risks imposed by the applicable regulatory regime. These risks have a profound effect on ILECs' businesses today, and the Commission has thus recognized that they must be included in determining a cost of capital under TELRIC.[59] For example, under the 1996 Act, incumbent carriers not only *face* increasingly robust competition, but are forced to *assist* their competitors' entry into the market and their capture of the incumbents' existing customer base. They are then left with enormous sunk investment costs that they cannot recover. Further, while the ILECs must base the UNE rates they charge CLECs on projected demand, CLECs need not commit to use those UNEs for any set period of time. If they decide to leave the market or to use other facilities to serve their customers, the projected demand will not materialize—yet the UNE rates will remain unaffected.

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[57] Precursor Reports, *Telecom Hemorrhage and Separation from Economic Growth Continues* (Nov. 17, 2003) (predicting overall declines in profitability for ILECs, and noting that "SBC has lost, and continues to lose, the greatest portion of its lines overall"); Peter Rojas, "Bon Voyage, Baby Bells: A New Internet Service Means You Don't Need the Phone Company Anymore," *Slate* (Dec. 17, 2002) (describing Vonage's VoIP application and its prospects to replace traditional voice service); David S. Bennahum, "You Can Hear Verizon Now, But Can You Hear it Later?" *Slate* (Oct. 21, 2003) (describing, *inter alia*, the challenge that VoIP poses to ILECs).

[58] *See* Reinhardt Krause, "With Broadband, SBC Aiming for Comeback," *Investor's Business Daily* (Nov. 14, 2003).

[59] *See* FCC Reply Br., 2001 WL 881216 at *12 n.8 ("an appropriate cost of capital determination takes into account . . . risks associated with the regulatory regime to which a firm is subject").

In addition, regulatory distinctions between incumbents and competitors create opportunities for arbitrage that further threaten the ILECs' market position over the long term. Unlike ILECs, CLECs are not subject to carrier-of-last-resort obligations or to the same service quality standards or specific retail pricing rules that are imposed on ILECs. CLECs therefore are able to take advantage of the above-cost rates the ILECs typically must collect from their business and urban customers in order to subsidize rural and other high-cost customers. By focusing only on these customers, CLECs can easily undercut the ILECs' rates and capture significant market share, while leaving the ILEC with the highest cost customers who pay the lowest rates. As Forbes Magazine has summarized the matter, "[c]ompetitors leasing [Bell company] lines can exploit weaknesses in the Bell's kooky pricing structures, relics of their days as regulated monopolies, to steal the most profitable customers . . . . The Bells will have a hard time holding off the panoply of new competitors, says David Dorman . . . chief executive of AT&T . . .. As newcomers steal the fattest customers, the Bells will get stuck serving the low-spending, high cost ones. 'Inexorably,' he says, 'cable and wireless are going to eat their share.'"[60]

Finally, ILECs face the inherent uncertainty of the TELRIC and UNE rules themselves, which, in application, have changed considerably over the years. For example, the rates that incumbents are able to charge for UNEs may be revised at any time by the state commissions, typically downward. The Commission's unbundling rules also have been in a constant state of flux and have been struck down in part on multiple occasions, creating substantial uncertainty.[61]

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60 *See* Wooley, *supra* note 3.

61 *See AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366 (1999) (striking down Commission's first set of unbundling rules); *USTA v. FCC*, 290 F.3d 415, 429 (D.C. Cir. 2002), cert. denied, 123 S. Ct. 1571 (2003) (striking down unbundling rules adopted on remand from *Iowa Utilities Board*). *Cf. Verizon Communications, Inc. v. FCC*, 535 U.S. 467 (2002).

As the Commission has recognized, this regulatory unpredictability imposes significant costs and "drain[s] critical resources away from carriers' efforts to bring customers new products and services and to invest in existing and newer technologies and infrastructures."[62]

These are precisely the types of risks that investors consider and that any sensible cost methodology must take into account. All of these risks substantially increase the rate of return that would be required for any investment of debt or equity in the incumbents' UNE-related business. And a sound UNE pricing inquiry must fully account for such risks, both to give incumbents an opportunity to recover their forward-looking costs and to ensure that UNE prices send correct economic signals to the market generally. Clearly as a starting point, the risk-adjusted cost of capital should be no lower than the 11.25% established by the Commission as the default "starting point" in the *Local Competition Order*, and should in fact be adjusted significantly upward to account for these risks.[63]

2. Cost of Equity

A carrier's cost of capital is a function of its cost of equity and cost of debt. The cost of equity component is particularly sensitive to the relevant risk level. Disputes about cost of equity range from the appropriate model choice to the selection of every single input used in the various models. It is critical that the Commission provide guidance to state commissions concerning the calculation of an appropriate cost of equity in order to reduce the complexity and unpredictability of this inquiry and to ensure that the approaches that state commissions adopt are consistent with the assumptions used elsewhere in TELRIC studies.

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[62] Notice of Proposed Rulemaking, *Performance Measurements and Standards for Unbundled Network Elements and Interconnection*, 16 FCC Rcd 20641, Separate Statement of Chairman Michael K. Powell at 1-2 (2001).

[63] *See Local Competition Order* at 15856 ¶ 702.

Equity investment returns compensate a company's shareholders for the use of their capital to finance plant and other equipment needed to provide service. The cost of equity is the minimum return that equity investors will accept for the company's use of their investment. A cost of equity measurement rests on the fundamental economic principle that investors incorporate risks into their investment decisions. In capital markets where relatively risk-free investments are available, such as government-issued bonds, investors will make riskier investments only if they are offered a return greater than the rate of return on a risk-free asset. The rate of return that investors will demand increases as the risk of a particular investment increases, so that riskier assets (such as equity) must yield a higher rate of return than safer assets (such as debt) to induce investment.

Because the forward-looking cost of equity is a measure of the stream of cash flows that investors expect from owning shares of the company, it must be estimated using a cost model that can account for the relevant considerations, including factors such as the level of risk and the company's rate of growth. In SBC's view, it is not necessarily critical for the Commission to select one specific *model* to calculate the cost of equity so long as the Commission establishes a basic approach to guide the *inputs* used in connection with any model. Indeed, SBC typically uses two models to estimate cost of equity and then compares the results of both.[64] Selecting just one such model would eliminate substantial debate in UNE cost cases and would save all parties significant time, as would instructing state commissions to employ these two models and average their costs. Any steps the Commission takes in that direction would help streamline the UNE costing process.

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[64] Specifically, SBC typically employs the one-stage discounted cash flow ("DCF") model, and checks the results of that model against the Capital Asset Pricing Model ("CAPM").

As to inputs, the Commission should at a minimum preclude the use of backward-looking and unreliable assumptions—concerning, for example, proxy groups and growth rates—in whatever cost-of-equity model state commissions employ.[65] Instead, the assumptions should adequately account for the risks that the incumbent will face over the foreseeable future (or, if TELRIC is not reformed as the Commission proposes, then for the enormous risks inherent in perfect competition). The Commission should specify, to start, that the appropriate proxy group must be composed of companies operating in competitive environments, such as ILEC holding companies, as this is the *minimum* level of risk that the ILEC will face as a provider of UNEs in a market characterized, as this one is, by increasing intermodal competition. The goal, as the Wireline Competition Bureau acknowledged in the *Virginia Arbitration Order*, is to "produce a useful benchmark for the risk faced on average by established companies in competitive markets."[66] SBC submits that ILEC holding companies are a fair—indeed, conservative—proxy group to use in estimating the cost of equity. Because they are able to diversify risk more than a UNE-only provider could, their overall risk level is almost certainly lower than the risk level attributable specifically to the underlying UNE-based business. But the Commission need not

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[65] When the DCF model is used, the growth rate assumption is one of the most critical inputs. The growth rate correlates to the level of risk reflected by the model. High-growth companies are inherently riskier than steady, moderate-growth companies. It is therefore inappropriate to assume the growth rate of the latter when modeling the cost of equity for a company that faces high levels of risk.

[66] Memorandum Opinion and Order, *Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration*, CC Docket Nos. 00-218 & 00-251, DA 03-2738, ¶ 90 (rel. Aug. 29, 2003) ("*Virginia Arbitration Order*"). Notably, because of differences in scale economies and fixed costs, the cost of capital in actual competitive markets is much lower than the hypothetical cost of capital would be in the perfectly competitive telecommunications market posited by the original formulation of TELRIC: a market contested by numerous, fully facilities-based rivals.

select the specific proxy group; it need simply clarify that the proxy group *must* be composed of companies in competitive industries.

The Commission also should require that the data used in connection with the inputs in the cost of equity model be publicly available and recognized as reliable. For example, the relevant data for the telephone holding companies in the proxy group SBC proposes may be obtained from commonly accepted and readily accessible sources such as Value Line and I/B/E/S, which provide expected dividend yields for future quarters for SBC and other parent corporations of incumbent carriers. The CLECs, in contrast, typically do not rely on data that investors or economists employ: instead, they tend to search for the consultant or analyst that will support whatever numbers suit the CLECs' regulatory objectives. But the assumptions used for cost of equity calculations should have real-world significance and thus should, wherever possible, reflect relevant data on which investors actually rely, not data created for a cost study. Likewise, the Commission should clarify that assumptions such as growth rates should reflect the principles discussed above: real, competitive markets in which investors' expectations of risk are fully reflected.

3. Cost of Debt

The cost of debt measures what it costs a company to raise new debt funds in the marketplace. Because of the guarantees that attend debt investments, investment in bonds is significantly less risky than equity investments and therefore commands a lower rate of return.[67]

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[67] While not as risky as equity investment, investment in ILEC bonds is becoming increasingly risky, in large part because of developing competition and regulatory obligations. The Commission should clarify that such developments must be reflected in the cost of debt calculation. For example, Moody's Investors Service recently found that Verizon "may have [its] debt ratings reduced because of government rules forcing [it] to lease lines at discounts to competitors." Scott Lanman, *U.S. Local-Phone Carriers' Ratings May Be Hurt By FCC Rules*, Bloomberg News Service (Oct. 24, 2003).

In state UNE proceedings, both CLECs and ILECs, as well as the state commissions themselves, have generally agreed that the most appropriate way to estimate a forward-looking cost of debt for TELRIC purposes is to examine the bond ratings of the incumbent itself and other ILECs. The cost of debt can then be calculated based on the recent yields of bonds of those ratings as reported by Moody's, the most reputable source for such data. Such an approach is straightforward and easily implemented.

In recent proceedings, CLECs have sought to skew the inquiry by using the cost of short-term debt rather than long-term debt.[68] But short-term debt has no place in a TELRIC analysis. It is used not to finance long-term capital investments such as network facilities, but instead to cover irrelevant non-UNE related expenditures such as immediate cash needs. It makes no sense to adjust the cost of UNE facilities based on the return that typically would be provided to lenders in an entirely different, shorter term venture. Furthermore, though short-term debt produces a relatively low rate of return today because interest rates are at all-time low levels, over time short-term debt rates fluctuate dramatically and are far too risky for long-term use. For this reason, companies do not use short-term debt to finance long-term investments. Long-term debt is the exclusive vehicle for financing capital investments in network facilities. The Commission should accordingly clarify that only *long-term* debt is relevant to the TELRIC inquiry.

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[68] *See* Declaration of Terry L. Murray in Support of Joint Applicants AT&T Communications of California, Inc. and WorldCom, Inc., *Joint Application of AT&T Communications of California, Inc (U 5002 C) and WorldCom, Inc. for the Commission to Reexamine the Recurring Costs and Prices of Unbundled Switching in Its First Annual Review of Unbundled Network Element Costs Pursuant to Ordering Paragraph 11 of D.99-11-050, et al.*, Application 01-02-024, *et al.*, at 66-67 (filed with the CA P.U.C. Oct. 18, 2002).

4. Capital Structure

A company's capital structure reflects the mix and proportions of capital used to finance a company's assets and is critical to calculating an appropriately forward-looking weighted average cost of capital. In particular, the capital structure determines how equity and debt costs will be weighted.

The Commission need not dictate a specific capital structure to be used in TELRIC studies, as these may differ from company to company. But the Commission should make clear that the capital structure used for TELRIC purposes must be based on *market value*. A market-based capital structure measures the current relative amounts of debt and equity that investors have invested in the company and thus signifies the market-determined, competitive return that is sufficient to attract capital. In UNE rate proceedings to date, CLECs have instead advocated the use of capital structures based on book value.[69] But book value capital structures, recorded on a company's financial statements, reflect the company's historical accounting records and cannot reliably indicate current and *forward-looking* market investments in a company's debt and equity. In particular, such structures are distorted by the impact of telephone holding company restructurings of the recent past, including downsizings, write-offs, spin-offs, mergers, refinancing, and other one-time events.

For these reasons, there is broad consensus that market value weights should be used to estimate the weighted average cost of capital. For example, Shannon Pratt, a leading authority in business valuation, has emphasized that, in calculating a weighted average cost of capital for investment purposes, "[t]he critical point is that the relative weightings of debt and equity or

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[69] *See, e.g.*, *Virginia Arbitration Order* ¶ 101-102 (AT&T/WorldCom proposed a capital structure of 34.5% equity, 65.5% debt, which was rejected by the Bureau because it was based in part on book value).

other capital components are based on the market values of each component, not on the book values."[70] Likewise, in setting a capital structure of 80% equity, 20% debt for Verizon in the *Virginia Arbitration Order*, the Bureau correctly found that, "[i]n calculating TELRIC prices, the theoretically correct capital structure is based on market values of debt and equity, not book values."[71] It similarly concluded: "[T]he book value of [the incumbent's] existing network is irrelevant for the[] purpose[]" of determining TELRIC rates.[72]

Determining the market-based capital structure for a particular ILEC providing UNEs is difficult because most ILECs are publicly traded only at the holding company level. Although looking to an ILEC's parent company is slightly imperfect, because the parent company's greater risk diversification will permit a more conservative capital structure, that approach will certainly not *overstate* the proportion of (higher cost) equity that should be assumed, and it may present the most straightforward and reliable proxy available. The Commission could therefore adopt this approach and direct that the market value capital structure of the particular ILEC's parent company is the appropriate capital structure input.[73]

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70 Eugene F. Brigham and Louis C. Gapenski, *Financial Management Theory and Practice*, at 442-443 (5th Ed.) (citing Pratt); *see also* Copeland/Weston, *Financial Theory and Corporate Policy*, Chapter 13, Third Edition, 1988, Addison-Wesley, Reading, MA.; Brealey/Myers, *Principles of Corporate Finance*, Chapter 9, page 214, Fifth Edition, 1996, McGraw-Hill; and Robert C. Higgins, *Analysis for Financial Management,* Chapter 8, Fourth Edition, 1995, Irwin.

71 *Virginia Arbitration Order* ¶ 102.

72 *Id.*

73 *See id.* ¶ 103 (looking to an average of ILEC parent holding company capital structures). As the Bureau explained, it looked to the sample group of ILECs for these data to be consistent with its cost of equity calculation. The Commission could likewise find that a consistent data sample should be used in cost of equity and capital structure calculations.

B. Depreciation

Depreciation lives are another critical input in any TELRIC cost study and have a significant impact on whether UNE rates will allow ILECs to recover a fair measure of their costs by accounting for the appropriate level of risk the carrier will face going forward. The Commission has, from the start, required that TELRIC cost studies use "economic depreciation rates" and that the lives selected "should account for expected declines in the value of capital goods."[74] The *NPRM* recognizes that the Commission should give guidance to state commissions concerning the appropriate choice of depreciation lives in a reformed TELRIC approach that accounts for the real-world characteristics of the ILEC's network. *See NPRM* ¶ 100. As with other inputs, the Commission's guidance on this issue should be driven by the need for the consistency in the assumptions underlying UNE rates: Under a forward-looking methodology that is designed to measure the incumbent's actual costs, the measure of depreciation should itself be forward-looking and should account for the actual risk posed by real and anticipated competition and technological change. As discussed below, the only lives that meet these criteria are the lives based on Generally Accepted Accounting Principles ("GAAP") that the incumbents use for financial accounting purposes.

As the Commission has recognized, the lack of concrete principles for setting depreciation lives has led to great inconsistency among state commissions on this issue.[75] In many cases, that inconsistency has allowed serious understatement of economic lives. CLECs typically advocate, and a number of state commissions have adopted, regulatory depreciation lives originally prescribed by the Commission years ago for purposes such as retail ratesetting in

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[74] 47 C.F.R. § 51.505(b)(3); *Local Competition Order* at 15849 ¶ 686.

[75] *See Triennial Review Order* ¶ 685.

the context of rate-of-return regulation.[76] These prescribed regulatory lives were established by examining now-long-obsolete historic data regarding ILEC plant placement and asset retirements. These lives are therefore intrinsically *backward*-looking, out of date, and not a valid basis for setting forward-looking depreciation lives under *any* interpretation of TELRIC.

While the *Triennial Review Order* left open the possibility that prescribed regulatory lives could be appropriate for use in TELRIC studies,[77] lives set in the mid-1990s, in some cases even *before* the 1996 Act, simply cannot account for the significant competitive and technological changes the industry has experienced since then. The explosion of wireless, cable telephony and broadband, for example—all of which significantly affect the economic value of the traditional wireline network—occurred only in the past few years. For the same reasons, even the *ranges* of depreciation lives previously prescribed by the FCC are out of date and unreliable. The FCC set ranges for assets in 1994 and 1995, and these ranges were based on a statistical analysis of previously prescribed lives.[78] Indeed, some of the lives on which the ranges were based were already as much as seven years old at the time the ranges were set. Although the FCC selectively updated these ranges in 1999,[79] that update was not based on a comprehensive examination and, in any event, is already four years out of date.

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76 *See Virginia Arbitration Order* ¶¶ 108-111 (AT&T/WorldCom proposed lives prescribed by the FCC in 1996); *Massachusetts UNE Order* at 75-80 (AT&T/WorldCom and a coalition of CLECs proposed lives prescribed by the FCC in 1996); *Pennsylvania Tentative UNE Order* at 41-46 (AT&T/WorldCom proposed lives prescribed by the FCC in 1995).

77 *See Triennial Review Order* ¶ 688.

78 Second Report and Order, *Simplification of the Depreciation Prescription Process*, 9 FCC Rcd 3206, 3209 ¶ 25 (1994); Third Report and Order, *Simplification of the Depreciation Prescription Process*, 10 FCC Rcd 8442, 8447 ¶ 12 (1995).

79 Report and Order, *1998 Biennial Regulatory Review -- Review of Depreciation Requirements for Incumbent Local Exchange Carriers*, 15 FCC Rcd 242 (1999).

The Commission has recognized in the past that use of the main alternative to regulatory lives—GAAP lives—is TELRIC-compliant.[80] But the Commission has never affirmatively established GAAP lives as the standard. It should do so now. Unlike outdated regulatory lives, GAAP lives send the most "appropriate economic signals," *NPRM* ¶ 2, for encouraging efficient competition and investment. An ILEC's GAAP lives are reviewed annually and updated as necessary to reflect the continuing effects of competition and technological innovation on telecommunications assets.

Those effects have been significant. In recent years, competition—primarily intermodal—has eroded the value of telecommunications assets. For example, as wireless and cable providers and new facilities-based CLECs have begun to offer full service over high-speed networks, incumbents are shifting their mix of investment away from copper-based facilities and circuit switches toward fiber facilities and packet switches, which offer competing capabilities. This transition, which is already underway, has substantially shortened the lives of those older technologies, including even modern technology such as digital circuit switches. Technology Futures, Inc. ("TFI"), a consulting firm that provides technology and market forecasts, estimates that within five years, today's digital copper distribution cable, digital circuit switches, and

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[80] *See* Memorandum Opinion and Order, *Joint Application by SBC Communications Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region, InterLATA Services in Kansas and Oklahoma*, 16 FCC Rcd 6237, 6273 ¶ 74 (2001); *see also* Reply Declaration of Daniel J. Whelan and Gary E. Sanford, Appendix A, Volume 2, Tab F to Reply Comments of Verizon Pennsylvania (filed Aug. 6, 2001), *Application by Verizon Pennsylvania Inc., et al., for Authorization to Provide In-Region, InterLATA Services in Pennsylvania*, CC Docket No. 01-138, at 16-18 (Aug. 6, 2001).

digital loop carrier (DLC) circuit equipment will no longer be the technology of choice even for voice services.[81]

Even where competition is not displacing existing facilities, it has forced ILECs and manufacturers to fine-tune their networks to increase speed and efficiency and to provide new features and applications. Thus, replacements and upgrades have become much more prevalent than they were 5 or 10 years ago. As discussed below, for example, the continued deployment of switch technology upgrades constitutes a major component of switching costs today.

Facilities-based competition from cable telephony, wireless, and broadband providers shortens depreciation lives for a separate reason as well—as these competitors capture significant incumbent market share, they cause stranded ILEC investment. TFI forecasts that, by 2009, incumbents will serve half as many narrowband access lines (including UNE and resale) than they do today, and by 2012 one-third as many.[82] Since intermodal and facilities-based competitors bypass the incumbents' networks entirely, their increasing market share leaves incumbent carriers without even the revenues that come from wholesale provision of UNEs. Other technological innovation similarly threatens the value of ILEC assets. Technologies such as VoIP have begun to gain momentum, allowing an end-user to obtain voice telephony over a cable modem connection or other broadband platform and thereby eliminating the need for an ILEC voice line at all—either on a retail or wholesale basis. GAAP lives can be fine-tuned to account for such competitive and technological developments and their impact on asset values. Outdated regulatory lives cannot.

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[81] L.K. Vanston, R.L. Hodges, *Transforming the Local Exchange Network: Review and Update* (Technology Futures, 2003), at 7-12.

[82] L.K. Vanston, *Forecasts of Access Line Competition in the Local Exchange* (Technology Futures, 2003), at 18. Even if broadband lines are included, TFI forecasts that ILECs will provision 45% fewer access lines in 2012 than today.

Despite CLEC claims to the contrary, GAAP lives are exceedingly reliable. To comply with GAAP, depreciation lives must be unbiased, verifiable, and completely neutral to any particular goals aside from accuracy. The Financial Accounting Standards Board ("FASB"), the preeminent accounting standards-setting body, mandates that all accounting information, including depreciation lives, contain no "bias intended to attain a predetermined result or to induce a particular mode of behavior."[83] In particular, GAAP does not permit any "conservative bias," contrary to the claims of some CLECs.[84] The Accounting Standards Executive Committee—the organization that establishes the guiding principles for GAAP—determined ten years ago that "conservatism" should no longer be within the hierarchy of accounting principles.[85] Current formulations of GAAP aim for *accuracy*, not conservatism.[86]

Nor do companies have any *incentive* to claim overly short or "conservative" GAAP lives. Using shorter lives would produce higher expenses and lower net income. Since GAAP lives are used in reports to the Securities and Exchange Commission, shorter lives tend to depress both the company's stock price and management compensation. In light of the recent economic downturn and the resulting plunge of stock prices, it is implausible to suggest that

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[83] *See* FASB Statement of Financial Accounting Concepts No. 2, "Qualitative Characteristics of Accounting Information," Figure 1 and Glossary.

[84] *See NPRM* ¶ 100 (seeking "comment on whether compliance with GAAP results in any systemic bias").

[85] Financial Accounting Standards Board ("FASB"), Statement of Position 93-3, "Rescission of Accounting Principles Board Statements," March 19, 1993, ¶ 7; *see also* FASB Statement of Financial Accounting Concepts No. 2, "Qualitative Characteristics of Accounting Information," Figure 1 (listing the hierarchy of accounting concepts, which does not include conservatism).

[86] *See, e.g.*, FASB Statement of Financial Accounting Concepts No. 2, "Qualitative Characteristics of Accounting Information," ¶ 101 (emphasizing the ultimate importance of neutrality and accuracy).

ILECs would understate GAAP lives in the hope of obtaining some entirely speculative collateral benefit in the form of higher UNE rates. And in any event, GAAP lives are verified against data produced by other entities outside the company: the company's depreciation experts compare the ILEC's lives to life estimates performed by outside consulting organizations and similar companies.

Finally, even a perfectly accurate means of determining depreciation lives will lead to substantial undercompensation and distorted price signals whenever the period between rate cases is shorter than an asset's depreciable life if, as is often the case, the asset's forward-looking cost will decline over time. No carrier could hope to recover even the efficient, forward-looking costs for a declining cost asset (measured at year 1) using a straight-line depreciation schedule culminating at the expected conclusion of the facility's economic life if the asset is continuously re-priced to match the progressively lower regulatory cost estimates along the way. Thus, as Commission Staff noted in the Policy Paper released with the *NPRM*, "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] The Commission should correct this problem by directing the states to make additional adjustments to depreciation schedules, such as a write-up of investments, accelerated depreciation, or shortening the GAAP lives as a simpler proxy for accelerated depreciation.

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[87] David M. Mandy & William W. Sharkey, "Dynamic Pricing and Investment from Static Proxy Models," OSP Working Paper at 1 (Sept. 2003).

C. Loop Costs

The loop element consists of the transmission facilities that connect customer locations to telephone company central offices. The recurring costs of the loop include the costs of (1) purchasing and installing local loop components such as copper and fiber cables, support structures for the cables, DLC electronics, and other components of loop investment, and (2) operating and maintaining loop facilities. Incumbents incur enormous costs in deploying and maintaining loops, and it is particularly important to set UNE prices that reflect those costs.

The *NPRM* seeks comment on how a reformed TELRIC should address four of the key cost inputs for the loop: network routing and topography (*NPRM* ¶¶ 63-66), technology mix (*id.* ¶¶ 67-70), placement costs and sharing (*id.* ¶¶ 71-72), and fill factors (*id.* ¶¶ 73-75). In each case, the Commission should follow the basic methodological precepts discussed in Parts I and II and anchor the cost inquiry in the actual characteristics of the ILEC's network, taking into account the ILEC's plans to upgrade the network during the planning period. Only then can the Commission meet the goals it has set for itself in this proceeding: internal consistency in its cost methodology, an end to black-box indeterminacy in the state-by-state application of that methodology, and the transmission of economically accurate price signals to the market.[88]

1. Network Routing and Topography.

The *NPRM* first seeks comment on whether TELRIC should be revised to take as given not just the current wire center locations, but also the routing and topography of an ILEC's network—and tentatively concludes that it should. *See NPRM* ¶¶ 63-66. That tentative

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[88] Because there are some similarities between the facilities used to provide local loops and the facilities used to provide interoffice transport (such as the need for cables and support structures for both types of facilities), the issues identified in the *NPRM* with respect to local loops also affect the pricing of unbundled interoffice transport. The Commission should thus clarify that its answers to these questions apply equally to unbundled local loops and unbundled interoffice transport.

conclusion is correct for the reasons discussed in Part I—and in the attached analysis of Professors Aron and Rogerson. The relevant question is not what kind of network a hypothetical carrier would build today in a flash; it is instead what kind of network an actual ubiquitous carrier—subject to the constraints of price caps and competition, as discussed in Part II above—has built up over the course of time to serve the full demand the ILEC serves (and is obligated to serve) at real-world customer locations. Indeed, if a scorched node model were used, consistency would require not just abandonment of an ILEC's scale economies, lower capital costs, and longer depreciation lives (as explained in Part I), but also imposition of the full costs to a hypothetical (non-ILEC) carrier of obtaining the rights of way and other authorizations needed to build the network today from scratch (and proof that the hypothetical network would actually work). The combination of these factors would produce dramatically higher UNE rates, which still would not be grounded in the forward-looking costs of the *incumbent*. That nonsensical outcome shows once more why it is important to use the incumbent's real-world network routing choices and experience to the extent possible, rather than relying on complex and purely speculative modeling assumptions.

Grounding the inquiry in reality would also keep the cost inquiry from descending into black box speculation.[89] For example, some CLECs have championed a network routing function available in some cost models that arbitrarily lowers network costs by ignoring homes, rivers, right-of-way restrictions and all other impediments that could interfere with the least expensive and most direct path between any two points on a map. These CLECs seek to justify this modeling fantasy on the theory that an accompanying "right-angle routing function"

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[89] *See NPRM* ¶ 7 (noting that "the excessively hypothetical nature of the TELRIC inquiry" as currently interpreted "can make network modeling opaque and make it difficult to understand how actual UNE rates are derived").

compensates for these artificial cost savings by inefficiently *zig-zagging* through real-world obstacles rather than passing through them in a straight line.[90] As might be expected, that dubious claim is the subject of fiercely opposing expert testimony. Ultimately, as Drs. Aron and Rogerson explain, ignoring "practical considerations that drive real engineering practices . . . results in costs that could not be achieved by a real carrier." *See* Exh. A § 3.1. Grounding TELRIC in the routing characteristics of the actual network would preclude the need for such exercises in methodological obscurantism and, just as important, would ensure analytical consistency within TELRIC as a whole. The Commission should accordingly establish that, in addition to taking as given the incumbent's wire center locations, UNE cost models also should take as given distribution areas and remote terminal locations as they exist in the incumbents' networks, as well as actual customer locations.

2. Technology Mix.

The analysis in Parts I and II above establishes that an internally consistent TELRIC model would require use of the technology mix in the ILEC's network, taking into account the upgrades that the ILEC plans to implement during the planning period. TELRIC's "current availability" limitation already is designed to ensure that technology assumptions do not become purely hypothetical but must be limited to technology that in fact *could* be deployed today. The revised approach to TELRIC described above would tie the analysis more closely to the technology that the incumbent has in the network today or actually intends to deploy. For example, assumptions concerning deployment of remote terminal technology should reflect the state of the network today and the anticipated forward-looking evolution of the network as reflected in the incumbents' plans. There is no reason to depart from this approach with respect

[90] *See, e.g.*, Letter from Joan Marsh, Director, Federal Government Affairs, AT&T, to Marlene Dortch, Secretary, FCC, WC Docket No. 03-173, Att. at 5 (filed Oct. 8, 2003).

to loop technology or plant: in general, the outside plant technology that is in use today is not "obsolete," in the manner of the analog switch example, discussed above in Part I. Copper and fiber both still have appropriate, current applications, and carriers continue to employ each of the digital loop carrier technologies (UDLC and the different types of IDLC). Taking this existing technology mix as given is the analytical consequence of taking for granted the many low-cost attributes of the ILEC network, including its scale economies and lower capital costs.

3. Placement Costs, Sharing, and Structure Type

Two of the major components of loop costs (and thus of UNE costs generally) are the costs of building support structures and the costs of placing cables and equipment, which we denote collectively as "placement costs."[91] These costs vary considerably from region to region and even from neighborhood to neighborhood. The Commission should clarify that under *any* approach to TELRIC, but especially its proposed revisions, these costs cannot be based on hypothetical assumptions, but "must be representative of the real world" and "based upon the incumbent LEC's actual network topography" and experience. *NPRM* ¶ 53.

UNE cost models typically account for placement costs through several inputs. For present purposes, these fall into two major categories. The first input category consists of the gross placement costs themselves: the costs of building cable support structures (such as poles and conduit) and the costs of installing cable within those structures. The only feasible way to reflect all of the real-world, region-specific variables that affect structure and placement costs in a ubiquitous network—variables such as local ordinances, weather patterns, traffic conditions, and labor prices—is to rely on the ILEC's real-world experience. Thus, consistent with the *NPRM*'s tentative conclusion that UNE pricing should reflect the attributes of the ILEC's actual

[91] Support structure and cable placement costs also affect the cost of providing interoffice transport, but to a much lesser extent.

network, the Commission should clarify that UNE prices should be based on placement costs from recent ILEC projects, the ILEC's installation contracts, and other such real-world data.

A large percentage of total loop placement costs consists of the labor costs incurred in placing buried or underground cable. Those costs depend in part on the type of surface that work crews must dig up: for example, it is much cheaper to plow and backfill dirt than it is to cut through concrete or asphalt in developed areas and then restore it to its original condition. Some of the debate about placement costs thus turns on disagreements about the "placement methods" appropriate for particular areas. Relying on a footnote in the *Inputs Order*, CLECs have enjoyed some success in advocating the use of cheap placement methods (such as "plowing") in modeling the costs of laying cable in highly developed areas, even though no real-world carrier could ever hope to "plow" and then "backfill" a paved city street. The *NPRM* appropriately discredits this advocacy, observing that it "erroneously assumes away not just the features of an incumbent LEC's existing network but also attributes of the real world in which incumbents and competitors operate." *NPRM* ¶ 47. The Commission should reaffirm that conclusion in its final order in this proceeding.[92]

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[92] Under the current TELRIC regime, CLECs have argued—and have sometimes persuaded regulators—that, if the entire network were reconstructed at once, the scale economies associated with such an enormous project would permit a hypothetical replacement carrier to erect poles, install conduit, and dig trenches at a substantially lower cost than what ILECs actually incur in building these structures in the existing network over time. *See, e.g., Virginia Arbitration Order* ¶¶ 292-302. But this argument is nonsensical. For the reasons discussed in Part I, it is methodologically untenable to posit the instantaneous creation of a ubiquitous network in the first place. Because no CLEC (or ILEC) would ever construct a network in that manner, UNE prices based on an instantaneous replacement assumption would send incorrect economic signals to CLECs about whether to lease UNEs or construct their own facilities over time. Moreover, even if an entire network could be built immediately, the scale of such a project might well trigger a shortage of the raw materials, equipment, and labor necessary to build the network in such a short time, thereby driving up the costs of installing network facilities far beyond the costs that ILECs pay today.

The second major placement-related input category concerns the question of *sharing*. Some UNE cost models include explicit inputs for structure sharing that are expressed as the percentage of structure costs that the ILEC is assumed to bear. Though SBC's cost models do not include an explicit input for structure sharing, SBC implicitly accounts for sharing in its gross placement and structure cost inputs by including in its cost inputs and calculations only those structure costs SBC actually incurs. Regardless of the form of the input, the sharing issue concerns the extent to which a carrier can expect to save on placement costs by sharing them with other utilities, such as power or cable companies, that wish to install their own plant at the same time. With respect to buried cable, sharing opportunities are typically very limited in already-developed areas, because by definition the "other utilities" that would supposedly split these costs have already placed most of their own facilities in those areas. Relying again on a passage in the *Inputs Order*, however, CLECs commonly advocate, sometimes successfully, absurdly high savings figures—often greater than 50%—even with respect to cable placed below ground in downtown urban areas.[93] In effect, such figures assume that every time a carrier digs up the ground to lay cable in such areas, other utilities come along to pay most of the cost of digging, even though those other utilities have almost no need to share such costs because they have already deployed their facilities.

The CLECs' advocacy on such points is usually accompanied by "expert" testimony that relies not on any carrier's actual sharing experiences, but on the expert's own speculation about what life would be like in the most ideally perfect of all environments in which to do business as a telecommunications carrier. In reality, no carrier—ILEC or CLEC—has ever been able to exploit sharing opportunities to anywhere near the magnitude advocated by the CLECs, even in

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[93] *See generally supra* note 26.

developing areas.[94] And no one has ever articulated any serious reason to believe that ILECs are less efficient than other carriers in minimizing placement costs and maximizing sharing opportunities, since the price cap regime will automatically punish any such inefficiency. There is, in sum, no reason to depart from the ILEC's structure sharing experience in UNE cost studies.

The CLECs' counterfactual approach to placement costs and sharing is actually inconsistent even with the current version of TELRIC. Even that version asks how much it would cost to deploy a reconstituted network in conditions present *today*. *See NPRM* ¶ 17. That means taking the world as it actually exists today. If a certain percentage of neighborhoods covered by the network are already developed, the extra costs and lower sharing percentages of laying cable in such neighborhoods must be taken into account, even under TELRIC as it is currently formulated. The contrary approach not only is nonsensical, but also guarantees perverse price signals: no rational CLEC would ever pay today's higher costs of deploying a network if it could instead lease ILEC facilities at prices reflecting the lower costs of building a network many years ago, before development made the process more expensive. More fundamentally, these flights of analytical fancy illustrate once more the current TELRIC's underlying tendency to *invite* counterfactual reasoning of all kinds and to detach the cost inquiry from any carrier's real-world experience. The solution proposed here—basing placement costs and sharing percentages on an ILEC's recent experience—would cure that problem at its source.

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[94] There are several complications and costs to sharing that make it limited even in new developments, where no carriers or utilities have yet laid their lines. Even if two carriers are prepared to install cable along the same route at the same time (which is seldom the case), sharing of trenches requires a significant amount of coordination that can be quite costly. Coordination of timing is important, because the trenches in which cables are placed cannot be left open for long periods. Safety and other concerns may also dictate that a carrier and (say) an electric power utility place their cables in separate conduit systems.

Another related input concerns the question of "structure type." Current TELRIC cost models often permit extreme flexibility in the percentage of loop cable placed on poles ("aerial" cable) rather than under the ground ("buried" or "underground" cable). Aerial cable often is the least expensive cabling option in the short term, but it can be more costly to maintain over the long term because of its exposure to weather conditions and other factors. Also, its use has been increasingly limited by local authorities for aesthetic reasons.[95] Similarly, the initial costs of installing buried cable (cable placed directly in trenches) are lower than the initial costs of placing underground cable (cable placed in underground conduit), but underground conduit offers several long-term advantages, such as the ability to restore service more quickly and cheaply and to add more cable on a route without re-digging along the route. Consistent with the general methodological considerations discussed above, the cost analysis should take as given the percentages of aerial, buried, and underground cable expected to be found in an ILEC's network during the planning period. This is one respect in which the *NPRM*'s proposed adherence to the real-world attributes of the existing ILEC network may tend to lower, rather than raise, UNE rates, because low-cost aerial cable is more prevalent in ILEC networks today than it would be if those networks were to be reconstructed from scratch.

4. Fill Factors

Fill factors measure the portions of various network components that are utilized, or "filled," at a given point in time. For cost study purposes, the capacity that is not utilized is considered spare.[96] For example, if a 100-pair cable serves 45 working lines, that cable would

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95 *See, e.g.*, *Qwest 9-State 271 Order* at 26415-16 ¶ 194.

96 Network engineers define spare capacity more narrowly as capacity that is non-working and available for assignment to provision and order. According to this definition, spare capacity would not include non-revenue producing units of capacity such as defective units or units reserved for administrative and maintenance purposes.

have a fill of 45% (or 0.45) and spare capacity of 55% (or 0.55). Fill factors are used in UNE cost studies to determine how much spare capacity (including maintenance spare) is in the modeled network. Because users of the network bear a pro rata share of the costs of the spare capacity, the use of higher fill factors (and less spare capacity) in UNE cost studies means that purchasers of UNEs bear lower spare capacity costs. Conversely, the use of lower fill factors in UNE cost studies means that purchasers of UNEs bear higher spare capacity costs. Fill factors are thus an important driver of the costs of loops and certain other UNEs.

The considerations discussed in Part I of these comments apply as much to fills as to any other input. So long as a TELRIC model keeps UNE costs down by presupposing an ILEC's scale economies, capital costs, and depreciation lives, consistency requires the use of the ILEC's actual fills as well. Indeed, those fills are the *only* reliable evidence of the fills that are demonstrably achievable in a functional network capable of meeting the service standards imposed on a ubiquitous carrier. Like other ILECs, SBC follows engineering guidelines that have been developed through decades of experience and are designed to meet customer demand as efficiently as possible while enabling SBC to maintain the level of service quality expected of it as a ubiquitous carrier of last resort. And like *all* carriers, SBC is constrained by the need to use network components that come only in discrete sizes and by the "breakage" that results when these discrete sizes do not exactly match a carrier's needs. As noted above, this unavoidably produces real-world "spare" capacity beyond the amount called for in SBC's engineering guidelines. Any suggestion that SBC and other incumbents have incentives to maintain a network with inefficiently low fills (high levels of spare capacity) is groundless. Installing excess spare capacity for no reason would mean investing in capital only to have it sit idle and

not produce a return. SBC has no incentive to do that, particularly in a price-cap regime that penalizes inefficiency.

The *NPRM* asks whether price caps have been in effect long enough to ensure efficient fills within ILEC networks. *See NPRM* ¶ 74. The answer is yes. Price caps have been in place throughout most of SBC's service areas on the state and federal levels for many years. Any "excess" spare in the network from the pre-price-cap era would have been filled by demand growth over the intervening period. As plant additions have supplemented the capacity of older pre-price-caps plant, the sizing of those additions has been subject to the pressure of price caps and competition, as described in more detail in Part II above, and as confirmed in the analysis of Professors Aron and Rogerson. *See* Exh. A § 5. That is why, even under the *current* version of TELRIC, an ILEC's actual fills represent the most reasonable proxy available for the fills that any similarly situated efficient carrier would adopt. And, as the Seventh Circuit recently observed, if an incumbent's "current fill factors are the efficient ones (or within the range that a student of the subject might think a reasonable estimate of that figure), then they are exactly the right figures to use."[97]

In contrast, the fill factors routinely proposed by CLECs and often adopted by state commissions are exactly the *wrong* ones to use. CLECs have consistently urged state commissions to set fills well above the levels any ILEC or CLEC could reasonably and efficiently achieve, with no support other than the speculation of the CLECs' cost witnesses. For example, regulators in SBC's Ameritech states have adopted fill factors for distribution cables that are as high as 80% and 85%,[98] even though the actual fills in those states fall below 50%—

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[97] *AT&T Communications of Illinois, Inc. v. Illinois Bell Tel. Co.*, 349 F.3d 402, 411 (7th Cir. Nov. 10, 2003).

[98] *See, e.g., Ohio UNE Order* (85%); *Illinois UNE Order* (80%).

and even though this Commission has consistently approved loop distribution fills between 40% and 50% in a host of section 271 proceedings.[99] The effect of such baselessly high fill factors has been to cut TELRIC adrift from the constraints of the real world, contrary to the Commission's tentative proposal "to more closely account for the real-world attributes of the routing and topography of an incumbent LEC's network." *NPRM* ¶ 74.

Significantly, if an ILEC ever could raise its fills to the levels that CLECs advocate for UNE cost models, the result would be (i) radical decreases in both efficiency and service quality and (ii) radical increases in repair, maintenance, and provisioning costs. For example, if a network component fails, carriers typically look to restore service by switching service over to available spare components. This allows a carrier to restore service quickly without having to incur the expense of repairing or replacing the failed component immediately. If the network does not contain sufficient spare capacity to restore service, subscribers must wait until the component can be repaired or replaced before service can be restored. Emergency repairs also tend to be more expensive than repairs performed on a planned basis. The supposed cost savings of higher fills are thus illusory. *See* Exh. A § 3.2.

Insufficient levels of spare capacity also increase the cost of accommodating shifts and overall growth in demand. Demand in a particular area (for example, on a particular street) can increase quickly and without warning to the incumbent, as when existing residential subscribers order second lines, or businesses order new lines to accommodate increased call volumes. If the incumbent has sufficient spare facilities in place, such orders can be provisioned quickly and at little cost; if not, the incumbent must bear the far less efficient costs of sequential construction

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[99] *See, e.g.,* Memorandum Opinion and Order, *Joint Application by BellSouth Corp. et al. for Provision of In-Region, InterLATA Services in Georgia and Louisiana*, CC Docket No. 02-35, 17 FCC Rcd 9018, at 9053-55 ¶¶ 66-70 (2002) (approving the 41% and 48% distribution fill factors adopted by the Georgia and Louisiana commissions, respectively).

and installation. *See* Exh. A § 3.2. Similarly, customer churn—defined as the movement of customers and shifting of demand within a service area—increases the amount of spare capacity in the network. When a customer moves from one house to another, the first house may remain vacant for a period of days, weeks, or months before the next customer moves in. Incumbents frequently leave facilities assigned to a vacant location so that service can be activated for the next customer without requiring a premises visit. In SBC's service area, the U.S. Census Bureau reports that vacant housing units account for anywhere from 6% to 13% of all housing units.[100] Similarly, in new developments, incumbents must have facilities in place to provide service to customers without knowing whether those customers will even order services from the incumbent. Otherwise, incumbents risk having to pay penalties for failing to meet service quality standards. Ignoring these considerations produces utterly meaningless "efficiencies" that could never be duplicated in the real world and thus are of little economic significance. *See* Exh. A §§ 3.1-.2.

In sum, basing UNE rates on unrealistically high fill assumptions without accounting for the other costs associated with insufficient levels of spare capacity would distort price signals and deter efficient facilities-based investment by CLECs and ILECs alike. Since the costs of building a real network would invariably be higher than the artificially low rates produced by those assumptions, CLECs would always opt for UNEs over their own investment, even where that choice is inefficient from the public's long-term perspective. *See* Exh. A § 2.3.

Further, it is both unfair and incoherent as a policy matter to force incumbents (and not CLECs) to act as carriers of last resort on the one hand—and to subject them to penalties for failing to meet particular service quality standards—but then, on the other hand, to deny them

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[100] *See* U.S. Census Bureau, American Community Survey Profile (2002), *available at* http://www.census.gov/acs/www/Products/Profiles/Single/2002/ACS/index.htm.

compensation for the costs of maintaining the spare capacity needed to satisfy those requirements. In Indiana, for example, SBC must complete 90% of installation orders within 5 days and maintain a network that generates fewer than 10 trouble reports annually per 100 lines.[101] Without sufficient spare capacity, SBC would not be able to provision a sufficient percentage of new orders within the prescribed 5-day period, nor would SBC be able to minimize trouble reports by switching customers to more stable facilities when service problems are first reported. It makes no sense to impose these obligations and penalties on incumbents while at the same time denying them the costs they necessarily incur to meet these requirements.

Notably, the CLECs have been unable to demonstrate that *any* comparable real-world network has actually functioned with fill levels that are significantly higher than the levels ILECs generally have achieved. Nor have CLECs explained how significantly higher fill levels even *could* be achieved by ILECs on a forward-looking basis without seriously compromising service quality and significantly increasing the costs of operating the network. There certainly is no reason to think competition would have the effect of increasing current levels of fill. If anything, competition may decrease utilization levels by increasing customer churn and the unpredictability of demand. If ILECs must continue to be able to serve all comers, the result likely may be increased levels of spare, even stranded, capacity. Indeed, SBC and other ILECs already face the effects of increasing facilities-based competition as the total number of ILEC access lines has begun to decline in a number of jurisdictions. In some cases, SBC's fill levels

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[101] *See generally* Opinion, *Investigation on the Commission's Own Motion into any and All Matters Relating to Access Charge Reform and Universal Service Reform, Including, but Not Limited to, High Cost or Universal Service Funding Mechanisms Relative to Telephone and Telecommunications Services Within the State of Indiana Pursuant to: I.C. 8-1-2-51, 58, 59, 69; 8-1-2.6, et seq., and Other Related Statutes, As Well As the Federal Telecommunications Act of 1996*, Cause Nos. 40781-S1, 40849 & 41058 (Ind. Util. Reg. Comm'n Mar. 19, 2001); Ind. Admin. Code. tit. 170, r. 7-1.2-9.

have begun to decrease as a result. SBC expects that competition will continue to *decrease* utilization in incumbents' networks on a forward-looking basis, though the full extent to which it will do so is still unclear.

Finally, adopting a UNE pricing methodology that presumes that actual fill levels are efficient also would promote predictability and administrative economy. Such a presumption would reduce state commissions' discretion to engage in guessing games about the "proper" level of spare capacity and would thus eliminate the vast inconsistencies among states on that issue. For example, the distribution fill factors adopted in SBC's states have ranged from 38% in California to 85% in Ohio.[102] At the very least, even if the Commission does not adopt a rule requiring that TELRIC be based on existing fill levels, it should eliminate the wide discrepancy in fill factors across states by adopting a reasonable range of such factors that is based on empirical evidence regarding the fill levels in incumbents' networks today.

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[102] Opinion, *Rulemaking on the Commission's Own Motion to Govern Open Access to Bottleneck Services and Establish a Framework for Network Architecture Development of Dominant Carrier Networks; Investigation on the Commission's Own Motion into Open Access and Network Architecture Development of Dominant Carrier Networks*, Dec. No. 96-08-021, at 44, 62-63 (Cal. Pub. Utils. Comm'n Aug. 2, 1996) (approving Pacific's 38% distribution fill factor and ordering GTE to apply the same fill factor in its cost studies); Opinion, *Application of Ameritech Ohio for Approval of Carrier-to-Carrier Tariff*, Case Nos. 96-922-TP-UNC and 00-1368-TP-ATA (Ohio Pub. Utils. Comm'n Jan. 31, 2002) (85%).

D. Switching Costs

In clarifying TELRIC to account for the real-world characteristics of the incumbent's network, the Commission should provide specific guidance on the major drivers of switching costs: (i) technology mix; and (ii) the proper mix of new, growth, and upgrade equipment purchases to be assumed.

With respect to the first issue, the Commission should make clear that, as with every other element, the appropriate inquiry is the technology mix present in the incumbent's network at the midpoint of the network planning period (excluding any facilities that are obsolete and would thus be anomalously costly to replace, such as analog switches, *see* Part II, *supra*). CLECs often have advocated that regulators assume that the network contain only the least expensive switching technology produced by any of the available switch manufacturers. In other words, if Siemens, Lucent, and Nortel all produce a particular type of switch or component, the CLECs argue that regulators should assume deployment of only the least expensive of the three. But this ignores the benefits of a multiple-vendor approach and the fact that the switches differ in aspects other than price alone. These differences drive the selection of a particular switch in the design and deployment of the network. The selection of which manufacturer's equipment to deploy should be tailored to the real-world engineering needs of the network, not chosen on the basis of an isolated list price. *See generally* Exh. A §§ 3.1-.2. The mix of switch types that the carrier deploys reflects the efficient balance of the various engineering and business concerns. Furthermore, it would be enormously expensive in the real world network to switch in mid-stream from one particular manufacturer's technology to another's. While the latter's technology might, standing alone, be less expensive, the costs of making all the *other* network modifications that would be required to preserve the compatibility of all related facilities would be enormous. And, for the reasons discussed in Parts I and II, it is economically untenable to

assume away the constraints of the ILEC's existing network in designing a forward-looking cost methodology.

Moreover, as the Commission itself has recognized, switching is extremely competitive, such that many CLECs can obtain switching on the market at costs that compete with the ILECs' costs. As a result, "competitive carriers have significantly increased their switch deployment and the number of lines they have served [in recent years]."[103] Incumbents thus face exceptionally intense pressure not only from price caps but from healthy competition to decrease their switching costs while simultaneously enhancing features and performance to keep up with the competitive offerings of other carriers. The technology mix the incumbent has in its network and will deploy over the planning period thus is the best basis for measuring forward-looking switching costs.

With respect to the second issue, the Commission should make clear that the per-line cost of switching should reflect the real-world prices the incumbent expects to pay for switching equipment. This requires using the incumbent's real-world vendor contracts and its technology purchasing experience and plans. Again, it is important to ensure that costs reflect the prices offered by *all* the manufacturers whose equipment the incumbent purchases, not just the least expensive one. And it is similarly important to factor in all the equipment the incumbent will purchase, which will be weighted to the purchase of switch additions and upgrades, not exclusively or even predominantly to new switches.

The switching prices incumbents actually pay are based on negotiated prices. The overall price the incumbent receives from each manufacturer reflects the mix of new switches and growth additions and upgrades the incumbents typically purchase after they have become locked

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[103] *Triennial Review Order* ¶ 436.

into a particular switching technology, and that are *necessary* to operate the switch in a functioning network. The price for new switches typically is relatively lower than the price for other switch equipment because the carrier is then "locked in" to that manufacturer's switch technology; the price for later additions and for necessary upgrades thus typically is relatively higher. The *overall* price reflects the total price the incumbent would pay to the particular manufacturer for all the equipment that the incumbent purchases in connection with a particular switch.

Indeed, per-line prices for new switches are relatively *low* only because of the vendors' expectations that the carrier will purchase subsequent, more expensive growth and upgrade equipment. It therefore makes no sense to base switching prices only on new switch prices: no carrier could ever obtain all of its required switching equipment at that lower price. Indeed, both the Commission and the D.C. Circuit have recognized that this approach is untenable: it makes no sense to posit these discounts in isolation from the more costly subsequent purchases that, from the vendor's perspective, make the discounts possible in the first place.[104] And the CLECs' approach would also provide an entirely artificial picture of an incumbent's real-world switching costs. In reality, the cost of the switch, over time, must include the additions and upgrade components that are added after the initial switch purchase.

Nor does it make any sense to omit upgrades (or additions) on the theory that those would not be necessary if the switch were truly forward-looking. Switching technology is *designed* to

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[104] *See AT&T Corp. v. FCC*, 220 F.3d 607, 618 (D.C. Cir. 2000) ("growth additions to existing switches cost more than new switches only because vendors offer substantial new switch discounts in order to make telephone companies dependent on the vendors' technology to update the switches"); *NPRM* ¶ 77 ("The Commission recognized that certain vendors provide a greater discount for new switches and a smaller discount for growth additions, and that the large initial discount is available only when an overall purchase of both new and growth equipment is planned."). *See generally Virginia Arbitration Order* ¶ 385.

incorporate upgrades. Such planned upgrades are as much an inherent part of switch engineering as is spare capacity in the planning and sizing of network plant. The cost of a switch that will be "up-to-date" throughout the relevant planning period is one that includes the planned upgrades.[105]

[105] The *NPRM* asks "whether the Commission should continue to apply the same pricing rules to UNEs"—such as switching—"and to reciprocal compensation." *NPRM* ¶ 148. In the Commission's long-running *Intercarrier Compensation* proceeding, SBC advocates the adoption of bill-and-keep for the relevant classes of traffic. That approach would pose no conflict with any reasonable methodology that the Commission adopts for assigning rates to the switching element (or any other UNE).

E. Calculation of Forward-Looking Expenses

In addition to the issues discussed above, which relate primarily to determining the incumbent's investment costs, the Commission should address the appropriate calculation of the expenses incumbents incur to provide UNEs. The *NPRM* recognizes that the calculation of monthly operating expenses for the provision of UNEs has been an area "of controversy." *NPRM* ¶ 109. The *NPRM* thus asks two particularly significant questions about how such controversies might be resolved under a revised UNE pricing regime. First, the Commission asks generally whether there is one particular means that should be used to calculate operating expenses, such as the use of annual cost factors ("ACFs"). *Id.* Second, the *NPRM* asks whether it would be appropriate to rely on existing expenses as a basis for estimating forward-looking expenses for UNE pricing purposes, and whether the Commission should make specific assumptions about how expenses should be projected over time. *Id.* ¶ 110-112.

With respect to the *first* question, cost factors are an appropriate method of calculating forward-looking expenses for UNE cost studies. Cost factors are ratios that are applied to a particular type of cost, such as the investment for a particular type of plant, to produce a related cost, such as the maintenance expense for that type of plant. Both ILEC and CLEC cost studies typically rely on cost factors to calculate forward-looking expenses, and SBC generally agrees that cost factors are a good approach for determining forward-looking expenses. However, as explained below, the Commission should provide additional guidance to ensure that cost factors are calculated and applied in a way that does not understate forward-looking expenses.

The *second* question is readily answered by the Commission's tentative commitment to tie UNE pricing more closely to the incumbent's actual network. As the Commission moves away from a purely hypothetical cost standard that assumes perfect (and unattainable) efficiency, it should find that the ratios of the incumbent's actual current expenses to the incumbent's actual

current investment for each asset category provide the best starting point for calculating forward-looking expenses.[106] Thus, if the TELRIC framework is reformed, as it should be, to account more closely for the attributes of the incumbent's existing network, the cost inquiry should likewise fully reflect the expenses the incumbent incurs to operate *that* network today and during the planning period. The ILEC's recent experience is by far the best basis for "projecting expenses" (*NPRM* ¶ 110), because the expenses associated with maintaining a particular asset today are not likely to change dramatically over time. They are also the best evidence of the expenses that would be incurred by any efficient carrier serving the incumbent's customers. As discussed above, there can be no doubt that incumbents act as efficiently as any other business in minimizing their expenses. Price caps and intermodal competition inexorably penalize an incumbent for any waste and, as described above, have caused incumbents to root out and eliminate excess costs, whether those costs come in the form of excess investment or excess expenses.

Moreover, adjusting expenses to account for the speculative efficiencies of a hypothetical carrier would produce the same methodological self-contradiction that marks TELRIC as it is currently applied, as discussed in Part I. Basing the inquiry on the ILEC's actual experience would eliminate the need for the Commission to rely on speculation about forward-looking improvements or to make general assumptions about what factors might influence expenses going forward. And it would ensure that forward-looking operating expenses reflect the same assumptions used to determine the network configuration and corresponding investments.[107] Thus, the starting point for the calculation of forward-looking cost factors should be the

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[106] The most feasible way to distinguish asset categories is by USOA account.

[107] *See NPRM* ¶ 117 ("We believe that consistency among the various components of rates is important.").

incumbent's current expenses. At the same time, estimated expenses under the revised methodology proposed here should account for (i) known, quantifiable, and account-specific changes that will result from the incumbent's documented plans to upgrade its network or systems during the planning period and (ii) expected changes in vendor prices or labor rates over the planning period.

There is no basis for any assumption that forward-looking "expenses will be reduced in proportion to reductions in investment." *NPRM* ¶ 110. Indeed, forward-looking expense levels may not decrease at *all* simply because aggregate investments decrease. For example, if a vendor reduces the price of digital loop carrier equipment by 20%, there is no reason to believe that the cost of maintaining that equipment also will decrease by 20%. UNE cost studies should thus assume reductions to current expenses only to the extent that such reductions are quantifiable and will in fact result from specific network improvements over the planning period. For that reason, an adjustment mechanism may be needed to ensure that the use of a cost factor within a given cost model does not produce unjustified and illogical changes to expense levels with every change in the level of investment. Of course, such swings are likely to be less substantial if, as it has proposed, the Commission ties investment assumptions to the ILEC's actual network characteristics and plans. Nevertheless, some adjustment may still be necessary.

Apart from changes to expense levels resulting from the incumbent's documented engineering or investment plans, current expenses should be adjusted only to account for expected inflation and changes in labor costs (*i.e.*, productivity) over the planning period. Changes in labor costs are best measured based on the incumbent's actual experience and concrete plans: as noted, price caps and competition have given incumbents every incentive to increase productivity as much as possible, and will continue to do so. By contrast, other carriers'

measures of productivity are not an appropriate benchmark. *See NPRM* ¶ 112. Since labor rates can account for a large measure of improvements or decreases in productivity, carriers serving different regions and using different labor forces will face very different productivity gains or losses in different periods. The Commission should also ensure that cost savings achieved through planned technology upgrades (such as replacing copper facilities with fiber facilities), which SBC captures by using *account-specific* expense factors (which, for example, are lower for fiber than copper), are not double-counted through additional productivity adjustments that would drive down the factors still further.

Finally, to avoid understating forward-looking expenses, it is important to ensure that cost factors are calculated and applied using consistent assumptions designed to produce a realistic measure of costs. For example, SBC calculates the shared cost component[108] of its common and shared cost factor as the ratio of (1) wholesale marketing and uncollectibles costs to (2) total wholesale direct costs. In an effort to produce lower UNE rates, CLECs have advocated reducing this factor by changing the denominator to total wholesale *revenues* (which typically are substantially higher than wholesale direct costs).[109] The resulting cost ratios are lower and thus produce lower shared cost recovery, but without any logical justification: Because the alternative ratios do not represent the relationship of forward-looking wholesale shared costs to the direct costs of providing UNEs, applying those ratios to the direct costs of providing UNEs produces essentially meaningless results. To avoid such illogical reductions in UNE costs, the

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108 Shared costs are associated with activities such as wholesale marketing and uncollectibles.

109 Some regulators have improperly reduced the shared cost factor by changing the denominator to reflect total company-wide direct costs (which include *both wholesale and retail* direct costs). *See, e.g.,* Final Decision, *Investigation Into Ameritech Wisconsin's Unbundled Network Elements*, Docket No. 6720-TI-161, at 30-34 (Wisc. Pub. Serv. Comm'n Mar. 22, 2002).

Commission should clarify that *all* cost factors must be calculated and applied in a manner that avoids such cost understatements.

For the above reasons, the Commission should clarify that cost factors should be based on the incumbent's actual current expenses and the incumbent's actual current investment, and should be adjusted only to account for (i) the documented plans of the incumbent that would produce known, quantifiable, and account-specific changes to the incumbent's actual forward-looking expenses or investment, or (ii) expected changes in vendor prices or labor costs over the planning period.

F. Non-Recurring Costs

Non-recurring costs (NRCs) are the one-time costs that an ILEC incurs to meet a CLEC's requests for UNEs, interconnection, or other services. In most cases, such costs are largely a function of the labor-related activities the ILEC performs in "processing" a CLEC order and "provisioning" a requested UNE or interconnection arrangement, or in performing a subsequent disconnection function when the CLEC cancels its request for UNEs or interconnection. These *non*-recurring costs—which the ILEC incurs because of, and specifically to benefit, the requesting CLEC—are distinguished from the *recurring* costs that the ILEC incurs to build and maintain its network for *all* users, retail or wholesale. These non-recurring wholesale costs are often directly analogous to non-recurring costs an ILEC incurs when fulfilling retail orders.

The *NPRM* seeks comment on two general sets of NRC-related issues. First, to what extent should non-recurring charges reflect the ILEC's *actual* non-recurring costs, as opposed to the *hypothetical* costs of a "most efficient" carrier? Second, under what circumstances, if any, would it be appropriate to defer an ILEC's recovery of these one-time costs by forcing it to recover them over an extended period in the form of recurring rates, rather than up front in the form of a non-recurring charge? In each case, the answer follows from the general cost principles set forth above: ILECs should be entitled to recover their actual forward-looking costs, rather than the speculative costs of a hypothetical wholesaler, and they should be entitled to recover them in the manner in which they are incurred: up front.

1. ILECs Should Be Permitted to Recover Their Actual Non-Recurring Costs.

As discussed above, UNE and interconnection rates in general should be based on an ILEC's actual forward-looking costs rather than the speculative costs of a hypothetical "most efficient" carrier. The rationales for that conclusion apply with at least as much force to non-

recurring charges as to recurring charges. First, for non-recurring costs no less than recurring ones, basing rates on an ILEC's actual costs (including the actual costs of labor) would make the rate-setting process more predictable, more reliably linked to the real world, and less subject to speculation about the supposed efficiencies of hypothetical networks. In particular, it would free regulators from dependence on the highly subjective opinions of subject matter experts concerning the time it would take a hypothetical carrier to perform non-recurring tasks and the imagined labor rates such a carrier might pay. *See NPRM* ¶ 119. Those opinions have produced bizarre divergences in non-recurring costs from state to state within SBC's region, discrepancies that cannot be explained by differences in labor rates or by any relevant network differences. State commissions should, instead, look to the ILEC's actual experience in provisioning UNEs, including time estimates provided by persons who actually perform the work and historical data demonstrating how often such work must be performed. In the nearly eight years since the passage of the Act and issuance of the *Local Competition Order,* SBC and other ILECs have gained significant experience with ordering and provisioning UNE orders. That experience has resulted in efficient and streamlined processes that form a reasonable basis for estimating current task times.

Second, as discussed above, it is methodologically inconsistent to base *some* cost inputs on the speculative efficiencies of a hypothetical carrier's network in a perfectly competitive market while nonetheless basing *other* cost inputs (such as capital costs, depreciation, and scale economies) on the characteristics of an ILEC's network in today's actual telecommunications market. Instead, consistency requires basing all inputs, rather than just some, on an ILEC's actual forward-looking costs. As the *NPRM* suggests, that point applies no less to NRC inputs than to recurring cost inputs; because "consistency among the various components of rates is

important," it would be inappropriate to "us[e] one set of network assumptions for recurring charges and a different set of network assumptions for NRCs." *NPRM* ¶ 117. Similarly, the Commission is right to express "concern that network assumptions that depart significantly from an incumbent LEC's existing network" can produce systematic underrecovery of "the cost of non-recurring activities that would be required in establishing a competitive market." *Id.*

Finally, as with other aspects of ILEC's networks and operating costs, there is every reason to believe that ILECs' current non-recurring costs are efficient and forward-looking. Indeed, this principle applies with additional force in the context of non-recurring costs. Non-recurring costs are the costs of doing business *today* using the network that the incumbent has in place (or will have in place during the planning period). It makes no sense to base non-recurring costs on altogether different technology that might one day be deployed in this or some other network. Such technology cannot reduce the costs of performing non-recurring activities on existing plant today.

If anything, the Commission has been particularly sensitive in the NRC context to the need for genuine recovery of an ILEC's actual forward-looking costs. For example, it has determined that, when an ILEC "incur[s] costs" in removing load coils from loops shorter than 18,000 feet, "the incumbent *should be able to charge*" the requesting CLEC to recover those costs, even though efficient "networks built today normally should not require [such] devices on [such] loops."[110] Put differently, the Commission's current rules permit an ILEC to recover its actual non-recurring costs even in contexts where a cutting-edge network built today, such as a

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[110] *UNE Remand Order* at 3784 ¶ 193 (emphasis added); *accord* FCC Reply Br., 2001 WL 881216 at *9 n.7 (rejecting "the . . . suggestion . . . that TELRIC authorizes regulators to require incumbents to modify, 'for free,' loops to facilitate certain advanced services," even though the work might not be required in a hypothetical, different network) (citations omitted); *cf. supra* note 39 (discussing Commission's unexplained decision in the *Triennial Review Order* to give states more "discretion" on this issue).

network free of bridged taps and load coils, would enable a carrier to avoid such costs. There is no principled basis for treating other non-recurring activities differently from loop conditioning in this respect, and it is inappropriate to base non-recurring charges on technology an ILEC neither uses nor plans to use in the immediate future.

Some CLECs have expressed concern that an ILEC might have anticompetitive incentives to delay efficiency enhancements in its ordering and provisioning processes if it knows that regulators will base non-recurring charges on its actual non-recurring costs. Those concerns are without basis. To begin with, they plausibly arise only where the non-recurring activities performed in the wholesale context have no analog in the retail context. In most cases, there is a retail analog to the wholesale activity in question, and price cap regulation will give an ILEC strong incentives to cut costs by improving its efficiency in handling such activities. In these cases, any failure to make analogous improvements on the wholesale side would be subject to prompt detection.

Even where there is no direct retail analog for a given function or activity, ILECs retain appropriate incentives to reduce the costs of performing non-recurring activities by adopting efficiency-enhancing measures and systems. As an initial matter, the stringent limits that regulators have imposed on non-recurring charges since the adoption of the original TELRIC rules in 1996 have already given the ILECs seven years of powerful incentives to lower these costs across the board.[111] And, in almost all states, the major ILECs are subject to exceptionally rigorous performance measures and to large self-executing penalties for non-performance. That

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[111] *See generally* W. Kip Viscusi, John M. Vernon & Joseph E. Harrington, Jr., *Economics of Regulation and Antitrust* 363 (3d ed. 2000) ("Once the new prices are set, they remain unchanged until the next rate case. Hence the period during which prices remain fixed provides an incentive for the company to be cost efficient. . . . This incentive for cost efficiency is often referred to as the result of regulatory lag.").

regime gives ILECs strong inducements to avoid liability by developing dependable, automated systems. For all of these reasons, there is no need to distort an otherwise appropriate cost methodology to give ILECs additional incentives to reduce their ordering and provisioning costs.

Finally, while the appropriate starting point for determining non-recurring costs is the incumbent's current cost of provisioning UNEs, it is nonetheless appropriate to adjust those costs to reflect network and systems changes the incumbent actually intends to make by the mid-point of the three-year planning period, as well as any expected changes in labor rates during that period. This approach would ensure (i) that rates will reflect the costs that the ILEC actually expects to incur, (ii) that all parties will benefit from any increases in efficiency that the incumbent will actually achieve, and (iii) that the methodology for recurring and non-recurring costs will remain mutually consistent.

2. Non-Recurring Costs Should Be Recovered Through One-Time Charges.

The Commission should reject any proposal to force an ILEC to recover its non-recurring costs only over time, in the form of higher recurring rates, rather than up front, from the particular CLEC that orders the non-recurring service, at the time those out-of-pocket costs are incurred. CLECs may choose to recover the non-recurring costs they incur from their end-users over time, but that business decision is irrelevant to the issue of how wholesale costs should be recovered from the cost-causing CLEC.

In the *Local Competition Order*, the Commission gave state commissions discretion to experiment with deferred recovery of non-recurring costs.[112] That approach, however, contradicts the more general economic principle, to which the Commission has otherwise adhered, that ILEC rates should "recover costs in a manner that reflects the way they are

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112 *Local Competition Order* at 15875-76 ¶ 749.

incurred."[113] Indeed, in competitive access proceedings before 1996, the Commission concluded that ILECs should "recover through an NRC their full one-time costs of providing, terminating or modifying an access service."[114] It explained that the contrary approach—"load[ing] the unrecovered non-recurring costs into recurring rates"—would be "inconsistent with the policies . . . that favor recovering costs from the cost causer": namely, the competitive carrier that orders the network provisioning function.[115] When, in the *Local Competition Order*, the Commission gave state commissions discretion to ignore those policies, it made no effort to square that decision with the basic cost-causation principles it had followed in these prior proceedings.

The Commission should now make clear that, like other costs, non-recurring costs should be recovered "in a manner that reflects the way they are incurred,"[116] and that ILECs are accordingly entitled to recover their one-time ordering and provisioning costs in the form of up-front non-recurring charges collected from the CLEC for which the non-recurring task is performed. The costs at issue are actual costs that ILECs must pay to fill a CLEC's order, and the requesting CLEC causes those costs by ordering particular network provisioning functions. The question is whether the CLEC should reimburse the ILEC for those costs up front, when they are incurred, or whether the ILEC instead should be forced to try to collect those costs later in the form of recurring charges spread among all CLECs over time. As discussed below, if the CLEC wishes to postpone payment for those costs, it should obtain financing from third parties (rather than ILECs) at rates determined by the free market (rather than government regulators).

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113 *Id.* at 15874 ¶ 743.

114 Memorandum Opinion and Order, *Investigation of Interstate Access Tariff Non-Recurring Charges*, 2 FCC Rcd 3498, 3501 ¶ 33 (1987) ("*Interstate Access Tariff Order*").

115 *Id.* at 3502, ¶ 35.

116 *Local Competition Order* at 15874 ¶ 743.

In the free market, a buyer that wishes to defer payment for goods or services past the time of delivery ordinarily must either obtain financing from the seller (typically on the seller's terms) or seek a loan from one of many financial institutions. Either way, the buyer must pay interest on the principal, and that interest includes, among other things, a risk premium to cover the possibility that the buyer will ultimately fail to make payment. In the case of deferred compensation for an ILEC's non-recurring costs, the risk of non-payment is particularly acute, both because of instability in the telecommunications industry and because high rates of customer "churn" often exempt given CLECs from paying recurring rates over a long enough period to ensure full cost recovery for the ILEC.[117] Indeed, because of the uncertainty of complete prospective recovery, if ILECs were forced to recover non-recurring costs through their recurring rates, it would be reasonable to expect a very substantial increase in recurring rates for *all* CLECs across the board.

As in innumerable other contexts throughout the economy, however, the size of the deferred-compensation premium that a buyer of a service (here, the CLEC) must pay the seller (here, the ILEC) is properly determined by the free market, not by government regulators. Whether or not ILECs are dominant in local exchange markets, they are obviously not dominant in the financial markets. To the contrary, the financial markets are highly competitive, and CLECs may avail themselves of those markets to obtain any financing they may need in order to provide service in particular areas. If a CLEC cannot obtain such financing on favorable terms,

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[117] *See, e.g.*, Letter from Kimberly Scardino, Senior Counsel, WorldCom, to Michelle Carey, FCC, CC Docket Nos. 01-338, 96-98, 98-147, at 1-2 (Nov. 15, 2002) (stating that "MCI loses 50% of its new [long distance] customers within the first three months," that MCI experiences only "a slightly lower level of churn" for its bundled local and long distance offering, and that "[h]igh non-recurring charges and the internal manpower costs associated with manual hot cuts are almost impossible to recover for customers that switch to another carrier within the first six months").

that is because the market has expressed an appropriate—and presumptively valid—skepticism about the economic rationality of the CLEC's business plan. In all events, a CLEC's failure to persuade the private sector to invest in its business plan at favorable rates is no reason to force an *ILEC* to serve as the CLEC's banker-of-last-resort.

Deferring recovery of non-recurring costs is also deeply inconsistent with principles of competitive neutrality. Compelling an ILEC to extend such credit to CLECs on regulated terms (*i.e.*, on terms that the free market would not bear) necessarily creates an implicit subsidy for the benefit of certain CLECs—*i.e.*, those that, on average, hold their customers for shorter-than-usual periods. Creating this implicit subsidy would undermine the Commission's central mandate to ensure pricing rules that are, as "Congress intended, *pro-competition*" rather than "*pro-competitor.*"[118] It would also instill a wholly irrational regulatory disadvantage for that subset of CLECs whose superior customer service record enables them to keep customers for longer-than-usual periods, because these latter CLECs would end up paying (through higher recurring charges) a large share of the non-recurring costs disproportionately caused by the CLECs with greater customer churn. As the Commission explained in addressing similar issues fifteen years ago, entitling ILECs to "recover through an NRC their full one-time costs of providing, terminating or modifying an access service. . . . is consistent with our policies encouraging the recovery of costs from cost causers and would reduce the subsidy of short-term users by longer term customers."[119] And, more generally, loading non-recurring costs onto recurring rates might cause CLECs that order fewer or less expensive non-recurring tasks to

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118 *Local Competition Order* at 15812 ¶ 618 (emphasis in original).

119 *Interstate Access Tariff Order* at 3502 ¶ 33.

subsidize the costs attributable to CLECs that are heavy consumers of non-recurring labor or whose businesses involve some of the more expensive non-recurring tasks.

Deferred recovery of an ILEC's non-recurring costs is also unnecessary to protect competition in local markets. First, requiring a CLEC to pay the non-recurring costs that it causes when it causes them does not erect "barriers to entry" in those markets.[120] As in the competitive access proceedings, "[t]he record does not demonstrate that the potential negative effects of high NRCs outweigh the strong policy attraction of developing rates that recover costs from the cost causer."[121] Indeed, the evidence is to the contrary, because substantial competition has developed throughout the United States even though most states have ordered recovery of non-recurring costs through up-front charges. Just as important, to warrant government intervention, a putative "barrier to entry" must, at a minimum, threaten to exclude a new entrant whose participation in a market would add to overall social welfare in the long run.[122] As discussed, requiring CLECs to pay up front for the non-recurring costs they cause does not erect a barrier to entry in that sense, because a CLEC is free to persuade private investors that its business plan makes good economic sense despite these start-up costs and is likely (though not certain) to be profitable over the long run. There is no reason why regulators should substitute their own judgment on such matters for that of the private investment community and, in the process, inflict a competitive disadvantage on the ILEC and other CLECs.

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120 *Cf. Local Competition Order* at 15875-76 ¶ 749 (speculating that deferred recovery of non-recurring costs would "reduc[e] financial barriers to entry").

121 *Interstate Access Tariff Order* at 3502 ¶ 33.

122 *See generally USTA v. FCC*, 290 F.3d 415, 427 (D.C. Cir. 2002) ("To rely on cost disparities that are universal as between new entrants and incumbents in *any* industry is to invoke a concept too broad, even in support of an *initial* mandate, to be reasonably linked to the purpose of the Act's unbundling provisions.").

The *NPRM* seeks comment on the proper compensation rules the Commission should adopt in circumstances where more than one carrier may benefit over time from the performance of certain non-recurring tasks. When an ILEC fills a CLEC order for UNEs or interconnection services, it always provides direct benefits to the requesting CLEC, but it may also provide indirect future benefits to other carriers. The speculative prospect of such future use by other carriers provides no basis for excusing the initial CLEC from paying the costs it causes by placing the initial order. As the Commission has previously determined, "requiring the interconnector to pay the full cost of [interconnection] equipment up front is reasonable because LECs should not be forced to underwrite the risk of investing in equipment dedicated to the interconnector's use, regardless of whether the equipment might be reusable."[123] After all, the costs and risks associated with non-recurring activities are those that *every* provider bears in a competitive industry—the ILEC included. Consider the Commission's example of the CLEC that orders a cross-connect at the feeder-distribution interface (FDI), incurs a non-recurring charge, and then loses the relevant customer to another carrier. *NPRM* ¶ 122. ILECs themselves incur such costs every time they need to install a cross-connect to provision service to a new retail customer, and they bear the risk that the customer will be lost to a CLEC. If that happens, the ILEC will receive no refund, the CLEC will incur no non-recurring charge, and instead the CLEC will benefit from the incumbent's work at no cost to itself. There is no competitively neutral reason to shield CLECs from these same risks when they are the ones ordering non-recurring functions on behalf of their own customers.

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[123] Second Report and Order, *Local Exchange Carriers' Rates, Terms and Conditions for Expanded Interconnection through Physical Collocation for Special Access and Switched Transport,* 12 FCC Rcd 18730, 18750 ¶ 33 (1997).

G. The Commission Should Not Adopt a Productivity Factor or Similar Mechanism to Adjust UNE Prices Over Time.

The *NPRM* asks whether it would be appropriate to adopt a productivity factor to adjust UNE prices periodically rather than conducting new cost studies. *NPRM* ¶¶ 138-40. SBC submits that this approach would be completely at odds with the Commission's stated goal of adopting a UNE pricing methodology "that is more firmly rooted in the real-world attributes of the existing network." *NPRM* ¶ 4. A uniform productivity factor could not possibly reflect the incumbent's real-world costs, because it would by definition be based on predictive assumptions—which would be no less speculative and controversial here than in the price cap context—rather than actual data about the incumbent's network and expenses. This would move in the exact opposite direction from the one proposed in the *NPRM*.

Nor would it make sense to simply assume that productivity will always increase, or that costs will predictably decrease, over time. In fact, some critical costs (such as labor costs) are *increasing* over time. And even to the extent that some material costs may have decreased in recent years, there is no sound basis to assume "that the trend will continue."[124] In fact, as the D.C. Circuit has found, telecommunications productivity "fluctuat[es]" and "thrash[es] about wildly," making "predictive value" judgments that are fixed over time factually indefensible.[125] Thus, even an appropriately calculated adjustment factor could not remain in effect for more than a short period, and regulators would have to recalculate adjustment factors regularly to account for real-world changes. Each time they did so, they would have to conduct what would amount to a new cost proceeding. The ensuing litigation would create regulatory uncertainty and would defeat the purpose of attempting to simplify UNE pricing proceedings.

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124 *USTA v. FCC*, 188 F.3d 521, 526 (D.C. Cir. 1999).

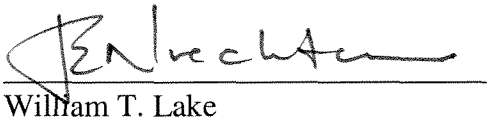
125 *Id.*

In any event, as explained above, changes in expenses and gross investment do not necessarily correlate at all. Labor and material costs will change in different proportions, and will do so for different UNEs and in different regions. It therefore would be completely arbitrary to adopt a national productivity mechanism or one that applied equally to all UNEs. At the same time, developing a generalized productivity factor that would make any sense—or developing several different ones—would be exceptionally complex, and certainly no more streamlined than a full-fledged UNE cost case.

CONCLUSION

The Commission should modify its TELRIC methodology in accordance with the foregoing principles.

Respectfully submitted,



William T. Lake
William R. Richardson, Jr.
Jonathan E. Nuechterlein
David M. Kreeger
Meredith B. Halama
Polly B. Smothergill
WILMER, CUTLER & PICKERING
2445 M Street, N.W.
Washington, DC 20037
(202) 663-6000

Jim Lamoureux
Gary Phillips
Paul K. Mancini
SBC COMMUNICATIONS INC.
1401 Eye Street, N.W.
Washington, D.C. 20005
(202) 326-8800

Counsel for SBC Communications Inc.

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