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

In the Matter of)
)
Developing a Unified Intercarrier)
Compensation Regime)

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**REPLY COMMENTS OF
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EXECUTIVE SUMMARY

Bill-and-keep would permit, and CPNP would preclude, the steady deregulation of the telecommunications industry over the long term. In a nutshell, that is because bill-and-keep requires a carrier to recover from its *end users* costs that CPNP entitles it to recover from *other carriers* – and because, although there will always be a need to regulate the rates that even non-dominant carriers charge other carriers, there is never a need to regulate the rates such carriers charge their own end users. For example, if a non-dominant carrier charges an end user a supracompetitive rate for terminating calls, the market itself will correct the problem, because the carrier will lose the customer to a competitor with lower prices. But if the carrier is allowed to recover the costs of the same service from another carrier serving a different customer, no market mechanism can normally deter the first carrier from charging an arbitrarily high price.

Thus, so long as CPNP is the rule – so long as one carrier may recover its *own* network costs from *another* carrier rather than from its own end users – the only solution to this “terminating access monopoly” is pervasive regulation, even of the smallest upstart carrier. Such regulation is undesirable and, because of bill-and-keep, unnecessary. By requiring carriers to recover their network costs from their own end users rather than from other carriers, bill-and-keep would eliminate any need to regulate non-dominant carriers, because those end users could take their business elsewhere.

Opponents of bill-and-keep, such as AT&T, respond that the deregulatory benefits of bill-and-keep would be limited because the end user rates of ILECs (to the extent they are dominant in given markets) may still require regulation. That argument is unsound on two levels. To begin with, bill-and-keep would permit significant deregulation today, because, among other considerations, non-dominant carriers are already significant

terminators of traffic, as illustrated by the industry's recent experience with ISP-bound traffic and CLEC access charges.

More fundamentally, AT&T's argument on this point is remarkably short-sighted. Because any regime the Commission selects in this proceeding should be built to last, the question is not whether bill-and-keep presents obvious advantages over CPNP *today* (even though it does), but whether it will present such advantages ten and fifteen and twenty years from now. The answer is yes. As the telecommunications world becomes increasingly defined by intermodal competition, and as it becomes increasingly populated by non-dominant carriers, the choice between CPNP and bill-and-keep is, at bottom, a choice between heavy regulation of this industry and very little at all.

Opponents of bill-and-keep also suggest that the costs of unnecessary regulation are low -- that regulation is, in effect, no less capable than market forces of "getting the rates right." This is sophistry. As illustrated by years of unhappy experience with access charges and reciprocal compensation rates, regulation is unpredictable, destabilizing, and inherently incapable of setting accurate intercarrier rates for the recovery of origination and termination costs. That is why the legacy of such regulation is litigation and pervasive arbitrage. Moreover, unlike bill-and-keep, CPNP would permanently mire the Commission in inappropriate judgment calls about whether one class of carriers has higher or lower network costs than another and, accordingly, whether the intercarrier compensation rates of some carriers should be higher or lower than those of other carriers. Those decisions should be left to the market, as bill-and-keep would permit, and should not be left to regulation, as CPNP would require. No carrier should be forced to

subsidize another carrier's choice of technology or network architecture; such choices should be validated (or not) by the choices made by each carrier's own end users.

There is no merit to the time-worn argument that CPNP is more faithful than bill-and-keep to economic principles of cost causation. The premise of CPNP is that the calling party "causes" all the costs of a call. That is demonstrably false: for example, the called party "causes" many of those costs by publicly listing its telephone number and agreeing to take a given call, and the called party's network is free to choose more or less efficient terminating technology. By splitting costs between the calling and the called parties, bill-and-keep is thus *at least* as faithful as CPNP to principles of cost causation. As the Commission has already indicated, there is also no basis for concern that bill-and-keep would cause carriers to specialize in originating traffic or that it would increase the volume of unwanted calls. In any event, if unwanted calls were the problem, the answer would be to regulate them directly, as the Commission has already done.

The defining attribute of bill-and-keep is a default division of financial responsibility, at some point between two networks, for the costs of handling traffic that travels over both networks; in the absence of negotiation, each carrier must recover from its end users, and not from other carriers, all network costs on its side of that point. The DeGraba proposal would establish that point at the end office serving the called party and would then rely on negotiations to produce more efficient outcomes. That approach suffers from two significant shortcomings. First, it would give a comparative bargaining advantage to carriers (such as ILECs) that have many end offices to which other carriers (such as CLECs) must bear the financial burden of providing transport. Second, by requiring carriers to obtain transport to points deep within an ILEC's network, the

DeGraba approach would increase calls for regulatory intervention in the use of an ILEC's transport facilities.

To avoid those problems, Qwest proposes an alternative approach, under which a carrier would bear a default financial obligation to deliver traffic to the "edge" of another carrier's network. Designation of the "edge" of a network would vary depending on whether the network is circuit-switched or packet-switched, given the quite different ways such networks operate. The edge of a hierarchical circuit-switched network would be defined as the access tandem serving the called party's end office. In contrast, the "edge" of a packet-switched network would be defined as any technically feasible point, such as a gateway, within a defined geographic area. Because this "edge of the network" approach would sharply limit the number of points to which carriers would bear a default financial responsibility to deliver traffic, it would be more equitable than DeGraba's approach as among carriers, and it would be more likely to produce efficient, negotiated transport solutions, such as the deployment of two-way trunks where justified by traffic volumes. Moreover, by permitting a carrier to relinquish financial responsibility for traffic at the edge of an ILEC's network, it would reduce calls for government intervention in the provision of an ILEC's transport facilities at regulated rates.

There is no merit to the contention that bill-and-keep would increase an ILEC's ability to discriminate against unaffiliated interexchange carriers. The potential for such discrimination is logically independent of the Commission's choice of intercarrier compensation regimes. Under bill-and-keep, as under CPNP, existing safeguards such as 47 U.S.C. § 272(e) would suffice to protect competition in the interexchange market. To remove any doubt on this issue, the Commission should simply clarify that, under bill-

and-keep, each ILEC must provide its end users with access to unaffiliated IXCs on the same terms, at the same rates, and with the same quality of service as the access it provides to its own IXC affiliate.

Some commenters oppose bill-and-keep on the ground that, by shifting network costs to end users rather than IXCs, it would reduce the implicit cross-subsidies that smaller ILECs currently receive under the geographic averaging mechanism of 47 U.S.C. § 254(g). That, however, is ultimately just an argument for replacing such cross-subsidies with explicit, competitively neutral funding mechanisms. There is no valid argument for continuing to fund universal service through implicit, competitively skewed subsidy mechanisms based on access charges.

Although the Commission may lack jurisdiction to impose bill-and-keep for intrastate access traffic, the Tenth Circuit's recent universal service decision underscores the Commission's responsibility to give states incentives to adopt appropriate funding mechanisms on the intrastate side of the ledger. For example, the Commission may condition the receipt of federal universal service funding on a state's willingness to remove implicit subsidies from intrastate access charges. Once those subsidies are eliminated, the states would perceive little advantage in retaining the current access charge regime, and a national consensus would likely develop in support of bill-and-keep for all traffic. Finally, there is no merit to suggestions that the 1996 Act precludes bill-and-keep for all traffic falling within the scope of 47 U.S.C. § 251(b)(5). The language of section 252(d)(2) is appropriately understood to permit a choice between *either* bill-and-keep *or* a truly cost-based CPNP regime. The Commission is free to choose the regime that better serves the public interest, and that regime is bill-and-keep.

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carrier to charge another. That, in a nutshell, is why bill-and-keep is preferable to CPNP. Unlike CPNP, it would eliminate the terminating access monopoly without regulation of non-dominant carriers, it would avoid the destabilizing arbitrage opportunities and litigation that inevitably accompany regulated intercarrier rates, and it would emphasize the role of market forces, rather than regulation, in a carrier's efforts to recover its network costs.

Supporters and opponents of bill-and-keep seem to be talking past one another largely because the supporters are approaching the issue from the perspective of the industry over the long term, whereas opponents are focused on the transitory disputes and special interests that tend to characterize a portion of the industry at any fixed point in time. Thus, the parties most opposed to bill-and-keep for LEC-to-LEC traffic are those that have made short-term windfalls by specializing in the termination of traffic at above-cost rates. The parties most opposed to bill-and-keep for access traffic are certain incumbent LECs that have a particular stake in preserving the economically irrational – and ultimately unsustainable – role of access revenues in the funding of universal service. And, more generally, the parties most opposed to bill-and-keep in any setting are carriers such as AT&T that have staked their business plans on the continuation of heavy regulatory intervention in all aspects of the telecommunications industry.

Moreover, although some parties contend that the Commission should continue to have two vastly different regimes for “local” and “long distance” traffic, that anachronistic approach would exacerbate the arbitrage and inefficiency that already beset the telecommunications world. At the end of the day, a call is simply a call, and arbitrage will inevitably thwart any artificial, distance-related distinction among types of calls.

Moreover, as several CLECs observe, the Commission should view with considerable skepticism any suggestion by incumbent LECs that bill-and-keep makes less sense for access traffic than for other kinds of traffic – or that, five years after enactment of section 254, regulators should still postpone the day in which a competitively neutral funding mechanism, rather than the nationwide customer base of conventional IXCs (see 47 U.S.C. § 254(g)), subsidizes network costs in high-cost areas. The Commission should thus simultaneously adopt bill-and-keep for all traffic within its jurisdiction and encourage the states to do the same.

ARGUMENT

- I. Bill-and-keep is preferable to alternative intercarrier compensation schemes, and the policy arguments of its opponents are without basis.**
 - A. Bill-and-keep is the best long-run solution to the terminating access monopoly problem.**

There are two serious contenders for the role of unified intercarrier compensation scheme in the long run: a “cost-based” CPNP approach, and bill-and-keep. CPNP would require the government to regulate certain intercarrier rates in perpetuity, whether a given carrier is dominant or not. Moreover, because such regulation is necessarily both imperfect and contentious, it would guarantee a world of arbitrage, litigation, and industry instability. Bill-and-keep avoids those problems, and for that reason alone it is the better choice, particularly over the long term.

- I. Bill-and-keep is the optimal solution to the terminating access monopoly in an increasingly competitive world.**

The first major advantage of bill-and-keep over CPNP derives from the fact that, whereas there would always be an obvious need to regulate the termination rates that non-dominant carriers charge other carriers, there is never a need to regulate the rates

they charge their end users. Because bill-and-keep would require carriers to recover from *end users* costs that CPNP would entitle them to recover from *other carriers*, bill-and-keep would eliminate the terminating access monopoly with little or no regulation of non-dominant carriers (and potentially, in some contexts, less regulation of dominant carriers as well). In contrast, CPNP would guarantee permanent, heavy regulation of every carrier, whether dominant or not. That advantage is comprehensively discussed in the attached Declaration of William Rogerson ("Rogerson Decl."), at 8-15.

Here it is important to focus on the severity **and** breadth of the "terminating access monopoly." That term refers not only to the recent efforts by some CLECs to charge IXC's radically above-cost rates for the termination of interexchange traffic, although that is perhaps the most obvious and familiar manifestation of the problem, but more generally to an economic phenomenon that arises whenever two or more carriers must cooperate in the completion of a call. In any given local or long-distance call involving more than one carrier, the terminating carrier typically controls the only line and local switch connecting the called party to the network, and the caller typically lacks any relationship with the terminating carrier. As a result, the terminating carrier has strong incentives to extract as high a payment as possible from the carrier with which the caller does have a relationship, and the caller is normally powerless to do much about it.

That terminating monopoly problem would thus require pervasive rate regulation of a carrier's termination rates *even if* the other carrier were entitled to pass the high costs of termination back, in the form of higher rates, to the particular calling parties that place the calls at issue. *See* Rogerson Decl. 9-12. But the problem is even worse than that, because various regulatory obstacles typically preclude ILECs (for local calls) and IXCs

(for long-distance calls) from passing such costs back to a specific calling party. *See, e.g., 47 U.S.C. § 254(g)*. The calling party thus normally lacks any interest in affecting the rates the terminating carrier charges for local or long-distance calls. *See Rogerson Decl. 9, 12-13.*³ Indeed, those same regulatory obstacles deprive a calling party of any incentive to object when a LEC charges an IXC arbitrarily high rates for *origination* as well. *See id.* at 13-14. In short, because the existing regime insulates LECs from any pressure *by their own end users* to lower above-cost intercarrier rates, CPNP does not create the price signals needed to ensure rational correspondence between prices and cost. The Commission has traditionally turned to rate regulation to address that problem: regulation under section 251(b)(5) of transport and termination rates for local traffic, and regulation under section 201 of access charges for interexchange traffic.

Bill-and-keep would eliminate, at the source, the very need for regulation of intercarrier termination charges. Some commenters observe that bill-and-keep would not immediately eliminate the need for regulation of all termination charges, because, until competition develops, dominant carriers may still have the ability and incentive to charge their end users more than the economic cost of the services they provide. *E.g., AT&T Comments 17*. Even in the short term, that argument misses the key points that CLECs are already significant terminators of traffic; that, where they are, they hold a monopoly over terminating access; and that bill-and-keep would thus dramatically reduce the extent to which this Commission would need to regulate them, since there would be no need to

³ Under CPNP, even if ILECs and IXCs were permitted to pass these costs back to calling parties, it is unlikely that calling parties would be sufficiently motivated by (or even attentive to) inefficiently high termination rates that they would withhold calls to end users of particular carriers and thereby exert indirect pressure on those carriers to lower those rates to efficient levels. *See Rogerson Decl. 8-12*.

regulate the rates they charge their own end users (as distinguished from the rates they charge other carriers).

The argument for CPNP, and against bill-and-keep, becomes even weaker when analyzed within the long time horizon that this Commission should consider when deciding the best way to bring long-term rationality to the field of intercarrier compensation. The premise of the 1996 Act, and of the Commission's regulatory philosophy as a whole, is that facilities-based competition will succeed over the long term in providing an ever-growing number of consumers with an expanding set of telecommunications alternatives to incumbent LECs. The parties may dispute the details of that inexorable trend, but even today, and even in the residential sector, competition is more widespread than industry pessimists would have this Commission believe. Wireless services, for example, are already available as an alternative to landline telephony for most Americans. "While most wireless customers may not be willing to 'cut the cord' just yet in the sense of canceling their subscription to wireline telephone service, it is indisputable that wireless service has significantly changed the way Americans communicate. . . . For some, wireless service is no longer a complement to wireline service but has become the preferred method of communication."⁴ Moreover, in a world in which cable modem service has leapt out to an early head start over DSL as the predominant broadband technology for residential subscribers (in part because of regulatory disparities), an increasing number of consumers can be expected to choose the

⁴ *In the Matter of Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, Sixth Report, FCC 01-192 (rel. July 17, 2001), at 32.

cable modem platform as the source for all of their telecommunications needs, including voice telephony.⁵ And, of course, such forms of intermodal competition merely supplement the statutory rights CLECs enjoy to an ILEC's own network under the 1996 Act.⁶

It is against this backdrop that the Commission should review AT&T's claim (Comments 17) that bill-and-keep would have no effect on the need to regulate termination rates and would simply change (from carriers to end users) the identities of the parties that must pay such rates. As AT&T appears to recognize, its position rests on the premise that competition is futile and that incumbent LECs will retain the same market position in ten, fifteen, or twenty years that they have today. If that premise is false – and all indications are that it is false – the advantages of bill-and-keep over CPNP become dramatically apparent. In a competitive world populated by non-dominant carriers, the choice between bill-and-keep and CPNP is, quite literally, a choice between continued heavy regulation of this industry and very little regulation at all.

⁵ See Remarks of FCC Chairman Michael K. Powell, “‘Digital Broadband Migration’ Part II” (Oct 23, 2001) (<http://www.fcc.gov/Speeches/Powell/2001/spmcp109.html>), at 3-4 (noting “the real competitive choices that have been introduced through alternate platforms, particularly wireless and cable telephony services,” and predicting that “[a] great deal of competition . . . , particularly for residential consumers, will come from other platforms such as cable and wireless systems”).

⁶ See *Local Telephone Competition: Status as of December 31, 2000* (Industry Analysis Div. May 2001), at 1 (reporting a “29% growth in CLEC market size during the *second half of the year 2000*”) (emphasis added); *id.* at 2 (reporting that, over the course of the year 2000, the number of UNE loops that ILECs provided to other carriers increased “by 62%, to a total of about 5.3 million,” in addition to the 6.8 million lines resold to CLECs).

2. Regulation is incapable of getting intercarrier rates “right.”

Opponents of bill-and-keep further suggest that regulation is just as capable as the market of fixing an appropriate price to recover the costs of termination (or, in the case of access traffic, the costs of origination as well). Those opponents both overestimate the ability of regulation to “get the price right” and underestimate the social and economic costs of getting the price wrong. AT&T, for example, contends that any arbitrage problem associated with CPNP “is *easily solved* simply by strict application of the existing requirement of cost-based prices.” AT&T Comments 8 (emphasis added).

These opponents appear unaware that regulators have tried and failed for many years to produce prices for origination and termination services that are accurately structured to reflect the “costs” of providing those services, and the result has been litigation, arbitrage, and regulatory uncertainty. Indeed, one need look no further than the Fifth Circuit’s recent decision rejecting the 6.5% X-factor justification in the *CALLS Order*, or the D.C. Circuit’s rejection of the Commission’s prior rationale for the same X-factor, to recall how impossible it is to achieve regulatory certainty in this area so long as one carrier may charge another for its own origination or termination costs.⁷ And, as discussed in Qwest’s opening comments (at 12-15), the fault lies not in the regulators but in the type of regulatory question at issue.

“Getting the rates right” is impossible enough on several levels even when the Commission has answered all the basic methodological questions. See Rogerson Decl. 14-15, 18-20. First, as the experience in the states has shown, regulators acting in good

⁷ See *Texas Office of Public Util. Counsel v. FCC*, 265 F.3d 313, 328-29 (5th Cir. 2001); *United States Tel. Ass’n v. FCC*, 188 F.3d 521 (D.C. Cir. 1999).

faith can and do disagree profoundly in the application of a single methodology – TELRIC – to any given rate element.⁸ Second, regulators cannot, and should not, be expected to keep pace on a monthly basis with the latest price-reducing developments in termination rates. *Id.* at 5, 14-15. And, even if they could, the industry's inability to predict what regulators will do itself tends to skew the market. Bill-and-keep would altogether eliminate that problem by specifying a single, predictable, and permanent solution to the recovery of termination costs.

Third, simply as a matter of practical necessity, CPNP narrows the options available for the recovery of termination costs. CPNP all but requires some variant of per-minute pricing because, as a practical matter, that is the only feasible way to enable a terminating carrier to allocate responsibility for termination among the multiplicity of other carriers that deliver traffic to any given subscriber of the terminating carrier.⁹ Bill-and-keep, in contrast, would permit carriers to experiment with various combinations of usage-sensitive and flat-rated charges on the subscribers with whom they have a steady, ongoing relationship – an option that is infeasible under CPNP. This distinction between the two approaches is quite significant, because, as discussed in Qwest's opening comments (at 12-15), no per-minute rate can accurately reflect the costs of providing

⁸ See, e.g., *In the Matter of Joint Application by SBC Communications, Inc., et al., for Provision of In-Region, InterLATA Services in Kansas and Oklahoma*, Memorandum Opinion and Order, CC Docket No. 00-217, FCC 01-29, 191 (rel. Jan. 22, 2001) (“TELRIC-based pricing can result in a range of rates, which is wide enough to encompass” “significantly different” rates in different states).

⁹ Indeed, in curtailing the use of the flat-rated PICC on IXCs in favor of an increased subscriber line charge, the Commission itself indicated that direct end user charges allow for more “straightforward, economically rational pricing structure[s]” than do intercarrier charges. *Access Charge Reform*, Sixth Report and Order, 15 FCC Rcd 12962, 12991-92, ¶ 78 (2000) (“*CALLS Order*”) (eliminating the residential and single-line business Presubscribed Interexchange Carrier Charge).

termination services. From an economic perspective, the costs to be recovered are the extremely lumpy costs (unassociated with any particular call) of assuring adequate capacity to accommodate traffic during peak load periods.¹⁰ When the market is permitted to decide how those costs should be recovered (as, for example, in the unregulated retail plans offered by wireless carriers), the result is a range of different solutions, most of which involve some element of flat-rated pricing. Again, for the network costs at issue here, that is an option available only under bill-and-keep, not under CPNP.

Even more fundamentally, CPNP would require the Commission and the states to continue playing a heavy regulatory role in the resolution of disputes among different categories of carriers about whether and how each such category should be treated differently in the intercarrier compensation calculus. Such disputes already abound within the industry. For example, CLECs and ILECs argue about whether, as AT&T contends, a CLEC should be able to “charge higher ‘tandem’ switching rates when it terminates calls from a switch in its efficient, single-layer switching architecture that serves a geographic area comparable to a tandem switch in the incumbent’s legacy two-layer switching architecture.” AT&T Comments iii. At the same time, CLECs and ILECs argue about whether carriers that specialize in terminating traffic to a specific kind of customer – such as ISPs – incur lower termination costs and should be compensated less. See *ISP Reciprocal Compensation Order* ¶ 93. Similarly, LECs and CMRS

¹⁰ *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Intercarrier Compensation for ISP-Bound Traffic*, Order on Remand and Report and Order, CC Docket Nos. 96-98, 99-68, FCC 01-131, at ¶ 76 (rel. Apr. 27 2001) (“*ISP Reciprocal Compensation Order*”).

providers argue about whether the latter incur higher termination costs than the former. See, e.g., *NPRM* ¶¶ 104-05; AT&T Wireless Comments 22-23.

Unlike bill-and-keep, CPNP compels the Commission to resolve such disputes. And, to resolve them, the Commission must make intrusive, value-laden comparisons among incommensurable network architectures and technologies and the costs they generate in handling particular kinds of traffic. Such comparisons are inevitably inexact, transitory, controversial – and unnecessary. Indeed, the Commission could avoid such comparisons altogether by moving to a bill-and-keep regime. Under bill-and-keep, the Commission would no longer need to ask whether CLECs have achieved unusual efficiencies by specializing in a single class of customers. Nor would it need to decide whether CLECs should be paid more than ILECs for termination at the central office on the theory that “CLEC networks may use long-loops or fiber rings in place of the tandem switches deployed by ILECs,” and “delivery of a call to the CLEC central office may often be the functional equivalent” – for pricing purposes – “of delivering a call to the ILEC tandem office.” *Focal Comments* 45. These cross-technology comparisons are arbitrary and, ultimately, deeply inimical to any truly deregulatory approach to telecommunications. More fundamentally, no carrier should be compelled to subsidize, through another carrier’s origination or termination rates, that second carrier’s choice of network architecture. That second carrier should have its choice validated – or not – based on the willingness of its own end users to support it by paying rates to that carrier.

3. The regulatory inaccuracies inherent in CPNP have significant market-distorting consequences.

Contrary to the position of CPNP’s champions, the arbitrage consequences of not “getting the price” right under CPNP are considerable and ultimately quite harmful to the

industry. As the ISP experience has shown, an entire segment of the telecommunications industry can grow up in reliance on a gap between termination rates and costs, and the cost of making the necessary regulatory correction is further industry instability. In a competitive environment, so long as CPNP is the rule, such arbitrage opportunities will be unavoidable, because carriers will always look for ways to exploit the inevitable inaccuracies in government-imposed intercarrier rates. And the effects of such distortions will be particularly severe where – as is the norm under current regulation – the originating carrier or IXC lacks authority to pass artificially high intercarrier termination rates back to the specific end users that originate the calls. *See, e.g.*, 47 U.S.C. § 254(g); *see generally* Rogerson Decl. 13-14.

The ISP example illustrates the consequences of such regulatory distortion. Above-cost termination rates produced not just an artificial subsidy for heavy dial-up Internet usage, but a wealth transfer from ILECs (the originating carriers paying the above-cost rates) to CLECs (the terminating carriers that received those rates). Because the states did not permit the ILECs to pass that burden back specifically to the end users who made ISP-bound calls (indeed, the states generally barred the ILECs from responding to the increased traffic by raising their rates at all), those end users received no price signals to use the ILECs' networks efficiently. This Commission wisely recognized that it makes no sense to subsidize heavy use of the Internet by artificially disadvantaging one class of carriers (and their shareholders or rate-payers) to the benefit of another. *See ISP Reciprocal Compensation Order* ¶¶ 66-76. Moreover, correcting the problem disrupted business plans that were based on gaming the regulatory system, and that in turn caused further economic dislocation. Contrary to the inexplicable position

taken by Time-Warner Telecom (Comments 10-11), the underlying culprit here was the regulatory problem, not the correction. And there would have been no such problem, and thus no need for subsequent correction, if the government had chosen bill-and-keep from the outset.

The type of arbitrage opportunity created by excessive *intercarrier* rates should be distinguished from the quite different arbitrage opportunities that arise when regulation sets an above-cost *retail* rate for a service offered by a dominant carrier, a competitive carrier offers the same service at an unregulated rate, and the market actors choosing between those two services *are the same ones who must pay the rate*. In that context, those market actors (typically end users) receive immediate price signals that cause them to choose the cheaper service, and that dynamic automatically begins moving industry prices towards costs.

That is not the case here: When a regulator sets *intercarrier* termination rates too high, it is often the case that *no* relevant market actor will receive appropriate price signals, and arbitrary intercarrier wealth transfers may persist without any market correction whatsoever. That is what was so pernicious about above-cost reciprocal compensation rates in the ISP-bound traffic context. Because the typical originating carrier (an ILEC) was barred from passing back to particular end users the termination rates charged by a CLEC serving an ISP, no end user had any incentive to avoid ISPs served by CLECs that charged above-cost rates, and the only mechanism for correcting the problem was a purely regulatory one. Such distortions will always be a threat so long as government engages in the precarious exercise of making one carrier pay for another's network costs.

B. Bill-and-keep is consistent with principles of cost-causation.

As explained in William Rogerson's Declaration (at 25-28), bill-and-keep is at least as consistent as CPNP with economic principles of cost causation. Indeed, the very premise of CPNP is that the calling party is responsible for all of a call's costs and that the called party is responsible for none. That premise is obviously false: the called party is capable of precluding costs from being incurred simply by declining to take a call or choosing to terminate it, and the called party's network has continuous opportunities to pick more or less efficient terminating technology. The supposed economic advantage of CPNP is illusory on another level as well, because regulatory restrictions preclude carriers in a wide range of circumstances from passing the costs of specific calls back to the individual calling parties that supposedly "cause" them.

In questioning the economic foundation of bill-and-keep, most opponents attack a straw man: the notion, upon which arguments for bill-and-keep do *not* rest, that the calling party and the called party evenly share exactly the same benefit on any given call. *E.g.*, Time-Warner Telecom Comments 6. The question is not whether each party shares *benefits*, but whether each is a causer of *costs* in the sense that each stands in a position to preclude certain costs from being incurred. The answer to that question is undoubtedly yes: each carrier can take measures to lower the costs of termination, and each end user can take measures – from hanging up to requesting an unlisted number – to avoid call-related costs.

Second, and more fundamentally, the argument for bill-and-keep is not that it perfectly assigns costs to the parties that cause them, but that its method of allocating costs is at least as efficient as CPNP's alternative method and that it is preferable to

CPNP in the other respects discussed above (namely, an increased reliance on market forces rather than regulation in the recovery of each carrier's network costs, the elimination of arbitrage opportunities, and the preservation of long-term industry stability). There can be no credible argument that CPNP somehow does a better job than bill-and-keep of allocating costs: with respect to any given call, CPNP inaccurately presumes that the calling party must pay for 100% of the call, even though, by answering the telephone and permitting the call to continue, the called party is responsible for a significant percentage of the costs that are incurred.

Proponents of CPNP contend that this deficiency will be sorted out if every called party perceives an obligation to settle accounts by placing a commensurate number of calls back to the original calling parties. *E.g.*, AT&T Comments 23. But that is no answer at all. Many calls are made between parties without any kind of ongoing relationship, and there is no reason to believe that, even where parties do make an effort to call each other back, the resulting costs will be borne with anything approaching proportionality. In sum, the principle of cost-causation is not remotely a strike against, and if anything is further support for, the adoption of bill-and-keep over CPNP. See Rogerson Decl. 25-28.

C. There is no basis for concern that bill-and-keep would induce carriers to specialize in originating traffic or would increase the number of unwanted calls.

In the *ISP Reciprocal Compensation Order*, the Commission soundly repudiated its previous concern that bill-and-keep would give carriers uneconomic incentives to specialize in the origination of traffic. As the Commission observed there, “[a] carrier must provide originating switching functions and must recover the costs of those

functions from the originating end-user, not from other carriers. Originating traffic thus lacks the same opportunity for cost-shifting that reciprocal compensation provides with respect to serving customers with disproportionately incoming traffic.” *ISP Reciprocal Compensation Order* ¶ 73.

That analysis is correct. In contending otherwise, a few CLECs argue that bill-and-keep would enable carriers specializing in origination to undersell the rates that other carriers charge their own subscribers. *E.g.*, Time-Warner Telecom Comments 11. The CLECs’ argument is that those other carriers must charge their subscribers not just for the origination costs of any given call, but for the termination costs of that same call as well. This argument is without merit. If bill-and-keep is the intercarrier compensation rule, a carrier operating in a competitive environment will succeed in charging its end users only for the portion of network costs for which it is legally responsible. By hypothesis, that will not include the costs of terminating a call on another carrier’s network. As a result, there would be no regulatory incentive for a carrier to specialize in originating traffic, because the price it could successfully charge for performing that service would need to cover the quite significant costs of origination plus some significant portion of transport, and those would be the same costs that other, competing carriers would need to recover as well. *See AT&T Wireless Comments 27-28.*

Some CLECs contend that current ILEC retail rates are designed to recover both the origination and the termination costs of all (non-access) calls originating on the ILEC’s network. *E.g.*, Time-Warner Telecom Comments 23-25; *see also* Focal Comments 10-11. That contention, which the Commission has already rejected, is both inaccurate and irrelevant to the merits of bill-and-keep. As a factual matter, the

Commission has repudiated similar claims by the same CLECs "that ILEC end-user rates are designed to recover from the originating end-user the costs of delivering calls to ISPs." *ISP Reciprocal Compensation Order* ¶ 88. As the Commission observed, "most states have adopted price cap regulation of local rates," and thus "rates do not necessarily correlate to cost in the manner the CLECs suggest." *Id.* at n. 174. That is not only true but an understatement. Even apart from the typical inability of ILECs to raise local rates to accommodate the growth of ISP-bound traffic, the use of price caps renders nonsensical any effort to draw a close correspondence between an ILEC's current retail prices and the specific functions that are performed in the disposition of local calls.

In any event, even if ILEC rates were currently structured such that some CLECs would specialize in originating traffic if exempted from an obligation to cover termination costs, that fact could not logically support an argument against bill-and-keep. Unlike the low termination rates (and sharing of intercarrier revenues) that CLECs could offer ISPs before the Commission stepped in this past April, the lower retail rates charged by the CLECs for originating traffic would not reflect an arbitrary carrier-to-carrier wealth transfer or any other irrational subsidy. They would reflect only the underlying cost of providing the portion of the service for which those CLECs would be responsible under bill-and-keep. To the extent that ILECs respond to those low rates by reducing their own rates to compete for the same customers, that would be an obvious benefit of bill-and-keep, not a disadvantage.

There is, finally, no empirical basis for the argument that bill-and-keep would increase the number of unwanted calls by companies that place more calls than they receive, such as telemarketers. As an initial matter, it is obviously not the case that, as

AT&T contends, bill-and-keep would make “every call a collect call.” AT&T Comments 33. To the contrary, as the Commission has explained, carriers under a bill-and-keep regime – and thus the customers of those carriers – would need to cover the costs of each call’s origination as well as a substantial share of transport costs as well. *See ZSP Reciprocal Compensation Order* ¶ 73. There is no empirical basis for concluding that the volume of telemarketing calls would significantly increase if the costs of a call were split between originating and terminating carriers rather than, as now, borne entirely by the originating carrier. *See also* Rogerson Decl. 30-31.

Even if bill-and-keep were likely to increase the number of unwanted calls, the appropriate solution is not to reject bill-and-keep itself but to address the problem of unwanted calls directly. First, the market has already produced a number of caller identification and call blocking technologies that shield subscribers from unwanted calls, and such market responses can be expected to become even more effective over time. *See* Qwest Opening Comments 39. In any event, even if the market could not be trusted to solve this problem, the appropriate regulatory response would be to enforce direct restrictions on the ability of telemarketers to place calls to nonconsenting individuals. Indeed, the Commission now follows exactly that approach. As AT&T itself observes (Comments 32-33), there are already highly effective restrictions on the kinds of telemarketing calls that can be placed to the subscribers of any wireless service “*or any [other] service for which the called party is charged for the call.*” 47 C.F.R. § 64.1200(a)(1)(iii) (emphasis added). Moreover, the Commission and a number of states independently require telemarketers to place called parties on a “do not call” list upon request. *See* 47 C.F.R. § 64.1200(e)(2)(iii).

11. An efficient bill-and-keep regime would allocate default financial responsibility for transport at the “edge of the network.”

The defining characteristic of bill-and-keep is a default division of financial responsibility for the costs of handling traffic at some point between two interconnecting networks; in the absence of negotiation, each interconnecting carrier – whether it is an ILEC, CLEC, wireless provider, or IXC – must recover from its end users, and not from the other carrier, all network costs on its side of that point.” Qwest has called that point the “financial point of interconnection,” or “financial POI.” It is to be distinguished from the place where two networks actually interconnect, which Qwest has called the “physical POI.” As an example of the difference between these two points, the physical POI between an originating LEC and an IXC in a long-distance call is today the POP, but the financial POI is, in effect, the loop side of the end office switch, since the IXC bears financial responsibility for all costs from that point.

At bottom, two basic variables define the major differences among bill-and-keep proposals: (1) the mechanism for identifying financial POIs in each network, and (2) the mechanism for determining the placement and types of physical transport links between the two networks. These two variables are obviously related, as DeGraba’s proposal

¹¹ Under current Commission regulations, each carrier is required to designate at least one physical POI in every LATA that it serves for the receipt of terminating traffic. The Commission should retain that approach under bill-and-keep and should clarify that, where a carrier makes only one physical POI available in a LATA, it is responsible for all network costs incurred on its side of the POI (*i.e.*, this designated physical POI also serves as the carrier’s financial POI). Although LATAs are the creatures of an obsolescent regulatory regime, they remain a readily available – if imperfect – means of dividing up the country for these purposes.

illustrates.¹² DeGraba would address the first issue (the designation of financial POIs) by requiring a carrier, in the absence of negotiations, to provide transport in any LEC-to-LEC call all the way to the end office serving the called party. Put another way, it would automatically place the financial POI for the call at that end office, and it would require the terminating carrier to recover from its own end users the costs of all “local access facilities” (*i.e.*, terminating switching and the loop) on its side of that point. The DeGraba proposal would then address the second issue (the deployment of efficient transport facilities between the two networks) by relying on negotiations against the backdrop of the specified default outcome. The premise of the DeGraba approach is that the very inefficiency of the default outcome – *i.e.*, each carrier’s obligation to provide transport to the other carrier’s end office over one-way transport facilities – would induce each carrier to negotiate an efficient, mutually advantageous transport solution, such as the use of two-way trunking.

In that respect, DeGraba’s designation of the end office as the default dividing line for financial responsibility would not result (and is not intended to result) in *physical* points of interconnection anywhere near the end office. It would, however, have quite significant effects on the relative bargaining power of the two interconnecting carriers. In particular, DeGraba’s approach would disadvantage those carriers that have fewer “end offices” than the carriers with which they must interconnect, because their transport burden under the DeGraba regime would be greater than that of the other carriers. That

¹² “The DeGraba proposal” denotes the December 2000 white paper written by Patrick DeGraba and issued by the Office of Plans and Policy. *See* Patrick DeGraba, “Bill and Keep at the Central Office as the Efficient Interconnection Regime,” OPP Working Paper #33 (2000) (“*DeGraba*”).

fact presents significant competitive concerns, since ILECs typically have many more end offices in a given locale than do CLECs. Moreover, because DeGraba's default rule would require CLECs to obtain transport deep within an ILEC's network, it would generate calls for intrusive government intervention in an ILEC's provision of its transport facilities at regulated rates to help CLECs meet their transport obligation.

Those defects in DeGraba's approach – the asymmetry of obligations as between ILECs and CLECs, and the potential for undue regulation of transport within an ILEC's network – can be resolved by adopting a different approach to the placement of financial POIs. In Section III.A, below, Qwest proposes such an approach, under which financial responsibility would be allocated (by default) at the “edge” of an interconnecting carrier's network. In a circuit-switched ILEC network, that generally means the access tandem serving the called party's end office,

That default designation of financial POIs, however, is only a first step. The ultimate goal of any sensible transport solution is the creation of conditions under which any two carriers will make use of efficient transport arrangements – and, in particular, two-way trunks between their networks wherever justified by traffic volumes. Requiring interconnecting carriers to specify financial POIs for any given call does not *by itself* produce efficient two-way transport arrangements between the carriers' networks, because (among other considerations) the financial POI in carrier X's network for traffic flowing in one direction would seldom coincide with the financial POI in carrier Y's network for traffic flowing in the opposite direction. As discussed below, the question is whether, in the spirit of DeGraba, the Commission should rely on intercarrier

negotiations against the backdrop of financial POI default rules to produce efficient two-way trunking arrangements.

A. **The default dividing line for financial responsibility in the transport of telecommunications traffic should be drawn at the edge of the other carrier's network.**

There are several advantages to a default rule that designates the financial POI for a given call at the edge of the other carrier's network. The term "edge of the network," which is defined more precisely below for different types of networks, can be roughly described as the set of points within a carrier's network where interconnection with other networks is technically feasible and where it is efficient for that carrier to manage a high volume of traffic bound for, or originating from, end users distributed over a broad geographic area. The edge of a carrier's network is thus to be distinguished from points deep within a carrier's network architecture, such as an end office (in a hierarchical circuit-switched network) serving a small number of end users distributed over a confined area.

One key advantage of designating the financial POI at the edge of the network is that it would limit the number of points in an ILEC's network to which other carriers would have a financial obligation to transport traffic, and it would therefore remove the anticompetitive asymmetry (discussed above) inherent in the DeGraba approach. Moreover, by removing that asymmetry, it would ensure that each carrier has roughly equal incentives to negotiate efficient transport solutions (including the deployment of two-way trunks), since neither carrier would be systematically much worse off or much better off than the other in the event that negotiations break down. That would greatly alleviate any theoretical concern that ILECs might avoid good faith negotiations, and

make themselves slightly worse off in the short term, in the hope that, by making CLECs *much* worse off, they could drive them from the market altogether. *See* Rogerson Decl. 7-8. Finally, because a range of transport options is typically available for carriers that interconnect at the edge of others' networks, sparing an interconnecting carrier from an obligation to deliver traffic to multiple points deep within each network would significantly reduce the circumstances in which there would be calls for regulatory intervention in the rates that ILECs may charge an interconnecting carrier for transport using the ILEC's facilities. *See id.* at 17-18.¹³

To identify the "edge" of a carrier's network for purposes of dividing financial responsibility between interconnecting carriers, the Commission must first distinguish between two different types of network architecture. In the hierarchical circuit-switched architecture that characterizes the networks of the major ILECs, the "edge" is typically the location of a higher-order switch such as an access tandem. In a "flat" packet-switched architecture, by contrast, the "edge" could include any node in the local network where interconnection is technically feasible.

This distinction reflects the fundamentally different ways in which traffic is routed over these two types of networks. As the Internet backbone illustrates, hot potato routing – the delivery of a call to the closest technically feasible point on another carrier's

¹³ Because Qwest's approach would permit interconnection at the edge of an ILEC's network, it would significantly reduce and perhaps eliminate the circumstances in which an interconnecting carrier could be said to have been "impaired," under 47 U.S.C. § 251(d)(2), by the denial of access to an incumbent ILEC's transport facilities at regulated rates. *See generally Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, Supplemental Order Clarification, 15 FCC Rcd 9587 ¶¶ 12-17 (2000) (noting context-specific character of "impairment" analysis under section 251(d)(2)).

network – is generally an efficient transport solution for a packet-switched network, because the individual packets constituting that call can follow any number of routes within that network to their final destination and, by definition, will not tie up a given “circuit.”¹⁴ As observed in Qwest’s opening comments (at 30), however, it would not be similarly efficient to permit a carrier to drop a call off anywhere in a typical circuit-switched network, because such networks require both predictability of transmission paths and conservation of the available circuits occupied by circuit-switched traffic.

For these reasons, the dividing line of financial responsibility -- *i.e.*, the financial POI – should vary depending on whether a given network is circuit-switched or packet-switched. For packet-switched networks, the financial POI is appropriately placed at any technically feasible point, such as a gateway, within a defined geographic area. (As discussed in note 11, above, the relevant area is probably best defined, given current conventions, as a LATA.) The upshot of this approach is that, if carrier A drops off traffic at any given gateway on carrier B’s packet-switched network, carrier B must recover from its end users – and not carrier A – the costs it incurs in handling those calls on its side of that point.

The approach proposed here requires somewhat greater elaboration when applied to a traditional circuit-switched network. In that context, an appropriate financial POI is any point in the carrier’s network corresponding to the access tandem serving the called party’s end office (or, in the event the carrier has no such tandem, to the end office itself). For example, suppose that carrier A – which could be an IXC, a wireless carrier, or a

¹⁴ See generally Michael Kende, “The Digital Handshake: Connecting Internet Backbones,” OPP Working Paper #32 (2000).

LEC – drops off traffic at carrier B's access tandem at the edge of the latter's circuit-switched network, and suppose that carrier B's end user is served by an end office subtending that tandem. In that event, carrier B must recover from its end user, and not from carrier A, all costs associated with that traffic on its side of that point, including tandem switching, end office switching, and transport between the end office and the tandem. Now contrast the following situation: An ILEC has two access tandems – Tandem A and Tandem B – in a LATA. A CLEC wishes to interconnect with the ILEC *only* at Tandem B. Under the approach described here, the CLEC is free to choose that option, and it will pay none of the costs beyond its side of Tandem B for traffic to end users served by an end office subtending Tandem B. It will, however, bear financial responsibility for the additional network costs of delivering to Tandem A any traffic to end users served by an end office subtending Tandem A but not Tandem B. Because it would be generally inefficient to route such calls through two tandem switches, the originating carrier should receive appropriate price signals to deliver them to the tandem serving the relevant end office. Finally, it bears emphasizing that these outcomes are merely defaults; carriers are of course free to negotiate alternative allocations of financial responsibility if they wish.

B. Carriers are likely to negotiate efficient two-way trunking solutions without extensive regulatory intervention beyond the designation of the financial POIs.

An identification of financial POIs in a given carrier's network is a critical component of an efficient transport solution, but it does not complete the inquiry. Networks do not exactly coincide, and one carrier's financial POI for traffic moving in one direction will be separated – whether by a matter of inches or miles – from the other

carrier's financial POI for traffic moving in the other direction. Somehow that gap must be bridged, for otherwise – if they simply follow the default rules for financial POIs -- carriers will deploy inefficient one-way trunks to other carriers' networks.

Before addressing whether regulatory specificity is needed to meet that objective, it is important to restate the efficient and desired outcome: the deployment of two-way trunks between the respective networks wherever justified by traffic volumes. Given the financial POI rules described above, detailed additional regulation may well be unnecessary to achieve that outcome. Any two carriers have a shared interest in reducing their aggregate costs by deploying a single, efficient two-way trunk, rather than two inefficient and redundant one-way trunks, for the traffic between their two networks. Of course, each carrier has an individual, self-interested incentive to avoid paying as much of the cost of that trunk as possible. But, given each carrier's background obligation to interconnect with other carriers, *see* 47 U.S.C. § 251(a)(1), and given that the default outcome is the construction (to the disadvantage of both carriers) of separate one-way trunks, each carrier would have a strong incentive to agree to share the costs of a single two-way trunk so long as *some* traffic flows in each direction between the two carriers.

Indeed, negotiations are more likely to succeed in producing efficient transport solutions under the approach proposed here than under the DeGraba proposal. Because carriers would be free to relinquish financial responsibility at the edge of another carrier's network, the default outcome would no longer disproportionately benefit carriers, such as large incumbent LECs, that have many end offices to which other carriers, such as CLECs, would bear the financial responsibility for delivering traffic. Qwest's approach would thus give ILECs added incentives to negotiate transport solutions in good faith,

because impasse would no longer make other carriers systematically worse off than ILECs. *See* Rogerson Decl. 7-8. In sum, designation of financial POIs at the edge of the network may well be enough to ensure fair and efficient two-way trunking solutions, without further regulation, for most intercarrier interconnection.

A significantly more interventionist option would be to promulgate detailed, nationally uniform regulations comprehensively establishing how networks must interconnect in specified circumstances, when two-way trunks should be required, how financial responsibility for those trunks should be allocated among the intercarrier carriers, how routing should be determined, and so forth. *See, e.g., AT&T Wireless Comments 42-44.* As in other contexts, however, it is far easier to add regulations incrementally once the need for them becomes apparent than it is to rescind regulations that, in hindsight, may not be strictly necessary. The Commission should thus adopt a market-oriented approach based on the placement of financial POIs at the edge of the network, study how well the market responds to the imperative for negotiation, and only then consider whether a more interventionist approach is necessary.

One context in which narrowly targeted regulatory intervention might arguably be necessary is where the traffic volume between carrier A's end office and carrier B's network is heavy enough to justify a direct trunk group that bypasses carrier A's tandem switch. For example, if that direct trunk group runs through the tandem location (and not through the tandem switch itself), it may be necessary to require carrier B to segregate the traffic destined for carrier A's high-volume end office so that it can be placed on the direct trunk group. The potential problem in such cases is that, if these direct-trunking disputes are viewed in isolation, carrier B may appear to have too small an incentive to

deviate from its default option of simply delivering all traffic on an unsegregated basis to the tandem switch. On the other hand, carriers normally negotiate a broad range of issues in combination, and it is unlikely that carrier B would permit negotiations to break down altogether, and thereby incur an obligation to underwrite the entire cost of inefficient one-way trunks, simply to avoid an efficient solution to direct trunking needs.¹⁵

C. Appropriate implementation of bill-and-keep would eliminate concerns about ILEC discrimination against unaffiliated IXCs.

AT&T (Comments 48-51) and WorldCom (Comments 24-27) express concern that bill-and-keep would increase an ILEC's ability to discriminate – with respect to both quality of service and pricing of local access – against unaffiliated IXCs in favor of the ILEC's own long-distance affiliate. That concern is misplaced. *See* Rogerson Decl. 21-24. Any ability of ILECs to engage in price or non-price discrimination is independent of the intercarrier compensation regime the Commission adopts. And any such ability can in any event be adequately addressed through regulations prohibiting such discrimination. *See id.* This is why the Commission has long imposed structural separation requirements

¹⁵ Many calls involve three carriers: the originating carrier, the terminating carrier, and a carrier that provides transport services in between. An IXC is a transport service provider that has an independent relationship with the calling party. It would be subject to the rules discussed in this section, and it would be responsible for recovering from its own subscribers all costs between the financial POI of the originating carrier and the financial POI of the terminating carrier. In contrast, a "transiting" carrier is a transport service provider that does *not* have an independent relationship with the calling or called party. Such a carrier essentially serves as a subcontractor to the originating carrier, helping the latter meet its responsibility to deliver calls to the terminating carrier's network. As discussed in Qwest's opening comments (at 25 n. 14), a transiting carrier is entitled to be paid by the originating carrier for performing that service.

for non-BOC dominant LECs that offer long-distance services and why Congress added for BOCs the more specific safeguards set forth in 47 U.S.C. § 272(e).¹⁶

In challenging bill-and-keep on the ground that it would permit discrimination against stand-alone IXCs, therefore, AT&T and WorldCom attack a straw man: they appear to assume that, in transitioning to bill-and-keep, the Commission would overlook the need to retain appropriate safeguards against discrimination. Of course, the Commission would not overlook that need, and in any event the statutory safeguards set forth in section 272(e) would remain in force. To remove any doubt on this issue, the Commission should simply clarify that, under bill-and-keep, each ILEC (to the extent that it is dominant in the access market) must provide its end users with access to unaffiliated IXCs on the same terms, at the same rates, and with the same quality of service as the access it provides to its own IXC affiliate.

With respect to pricing, this means that, until it is deemed non-dominant in the provision of access services, an ILEC must have a standard menu of rates (which could be flat-rated or usage-sensitive or some combination of the two) for local services, and that menu cannot vary depending on an end user's choice of IXCs.¹⁷ With respect to quality of service, this non-discrimination imperative means, among other things, that

¹⁶ The Commission recently sought comment on whether it should relax structural separation requirements for non-BOC ILECs. See *In the Matter of 2000 Biennial Regulatory Review, Separate Affiliate Requirements of Section 64.1903 of the Commission's Rules*, Notice of Proposed Rulemaking, CC Docket No. 00-175, FCC 01-261 (rel. Sept. 14, 2001).

¹⁷ As AT&T appears to acknowledge (Comments 50), its concern about anticompetitive "price squeezes" by dominant LECs would be no more valid under a bill-and-keep regime than it is under the existing access charge regime. See Rogerson Decl. 24; see also *Southwestern Bell Tel. Co. v. FCC*, 153 F.3d 523, 548 (8th Cir. 1998) (affirming Commission determination that IXC price squeeze concerns "are unwarranted because adequate safeguards are in place to prevent such an occurrence").

each ILEC must agree to route any tandem-switched traffic bound for its own IXC affiliate through the same end office-to-tandem trunks that it uses to route tandem-switched traffic bound for an unaffiliated IXC. And, just as ILECs typically divert overflow access traffic from direct trunk groups onto tandem-switched transport facilities en route to any IXC, they should be required to ensure that those same facilities are available to handle overflow traffic from direct trunk groups destined for unaffiliated IXCs. *See* Rogerson Decl. 22.

III. The adjustments bill-and-keep would require to end user rates and universal service are not “disadvantages” of bill-and-keep, but steps in the right direction.

A number of carriers and states oppose bill-and-keep on the ground that it would increase end user rates, particularly the rates charged by the independent LECs operating in high-cost areas. *E.g.*, NTCA Comments 12-13. Reduced to its essentials, this is simply an argument to postpone the day in which universal service subsidies will be explicit and competitively neutral rather than, as now, implicit and inefficient.

Although bill-and-keep would lead to rate increases for some services, it would also lead to at least commensurate rate reductions for other services. Today, consumers end up paying for access charges through higher IXC rates, and, as a group, they would do at least as well if those charges were imposed on them directly rather than, as now, indirectly through their IXCs. Put another way:

{S}hifting the recovery of [access] costs from carriers to end users should not, on average, increase the total costs faced by end users. This is so because carriers that currently pay inter-carrier charges, like long-distance carriers, pass these costs on to end-user customers in the form of higher rates. Thus, although a customer may see an increase in the bill he receives from his LEC, he should see a corresponding decrease in other charges, such as lower charges from his long-distance carrier.

DeGraba at ¶ 125. Indeed, for the reasons discussed above, a move to bill-and-keep for all traffic would produce significant gains for net consumer welfare. Bill-and-keep would reduce the significant costs of regulatory uncertainty and inefficient arbitrage, and a significant portion of those savings would be passed on to consumers in the form of lower retail rates within the telecommunications industry as a whole.¹⁸

The “consumer welfare” concerns raised about the application of bill-and-keep to access traffic are therefore not concerns about consumer welfare in the aggregate, which bill-and-keep could only enhance. Instead, the concern is that, as rates for most end users go down, rates for other end users would rise to meet the actual costs of serving them (in the absence of an explicit universal service response). That is because bill-and-keep would eliminate current implicit subsidy mechanisms that shield certain end users from bearing responsibility for the unusually high costs involved in connecting them to the network.

The existing access charge regime embodies two principal subsidy mechanisms. First, current access charges as a whole may exceed the aggregate costs of providing the specific access services with which they are associated, thereby permitting incumbent LECs to offer lower rates for basic local service.¹⁹ Second, and more important in this

¹⁸ Although some critics suggest that consumers would find it hard to read their bills after a switch to bill-and-keep (*e.g.*, AT&T Comments 6, 33), those concerns are a sham. At worst, consumers would have to pay two separate sets of charges: those that cover the services offered by an end user’s LEC, and those that cover the services offered by an end user’s IXC. But that, of course, is the case today. The only difference is that certain costs that used to be associated with the IXC would now be associated with the LEC. There is nothing particularly “confusing” about that outcome, and in any event all carriers would have an incentive to find market-oriented ways to reduce any confusion.

¹⁹ The *CALLS Order* purported to eliminate that implicit subsidy mechanism for price-cap LECs on the interstate side of the ledger. *But see Texas Office of Pub. Util. Counsel,*

context, 47 U.S.C. § 254(g) requires an IXC – to the extent that it must pay access charges – to recover them not from the specific end users that cause them to be incurred, but from the IXC's national subscriber base. That national averaging requirement forces an IXC's end users in low-cost areas to pay significantly above-cost rates for conventional long-distance calls so that end users in high-cost areas may pay artificially low rates. Bill-and-keep would largely eliminate this subsidy mechanism because, by requiring each LEC to recover its network costs from its own end users, it would remove access charges from the scope of the costs that are subject to the national averaging requirement.

Although including access charges within the scope of that requirement may have made sense as a transitional measure in the wake of the 1996 Act, it would be inappropriate on two levels to rely on that mechanism as a long-term solution to universal service needs. First, it is implicit rather than explicit and, as such, is irreconcilable with the new universal service mandate of section 254. Second, the geographical averaging mechanism is not at all competitively neutral: it places the subsidy burden not on telecommunications providers as a whole, but on providers of a limited category of telecommunications services (conventional long-distance services). That, too, cuts against the grain of section 254, which emphasizes the twin needs, in a competitive marketplace, to make universal service mechanisms fully explicit and to spread the

265 F.3d at 327-28 (vacating that portion of *CALLS Order*). Moving to bill-and-keep for access traffic would not by itself necessarily eliminate *this* form of implicit subsidy where it persists, because regulators could theoretically choose to retain the subsidy mechanism in the form of higher rates that ILECs charge end users directly (rather than indirectly through higher access rates charged to those end users' IXCs).

contribution obligation as broadly as possible among providers of telecommunications generally.

In short, the geographic averaging mechanism that bill-and-keep's opponents wish to preserve is an anachronism and should be eliminated. Qwest understands that, by eliminating that implicit subsidy mechanism, bill-and-keep would require a significant expansion of current universal service mechanisms. In particular, it would require appropriate increases in the level of explicit contributions to the universal service fund. But that, again, is the necessary by-product of the reforms required by section 254.

Along these lines, there is no merit to suggestions that, by moving to bill-and-keep for access traffic, the Commission would somehow *violate* section 254(g). *Cf.* Focal Comments 42. By its terms, that provision merely requires "providers of interexchange telecommunications services" to average their rates among their entire subscriber base; it does not require such providers to pay access charges to ILECs. Indeed, relieving IXCs of the need to subject access charges to that national averaging requirement is the only way to satisfy the larger emphasis in section 254 on explicit and competitively neutral funding mechanisms. If anything, therefore, bill-and-keep is more consistent than the current access charge regime with the universal service principles of section 254. A few parties also seek to revive the moribund argument that a separate subprovision within section 254 – 47 U.S.C. § 254(k) – must be interpreted to require IXCs, rather than end users, to bear the costs of access. That position, which has no foundation in either the letter or the objectives of section 254, **has** now been squarely rejected not just by the Commission, but also by two courts of appeals. *See Texas Office*

Pub. Util. Counsel, 265 F.3d at 323-24; *Southwestern Bell*, 153 F.3d at 559. The Commission should reject it here as well.

Finally, adoption of bill-and-keep for interexchange traffic will require the recovery directly from end users of certain network costs that had previously been recovered indirectly from end users through access charges. The Commission should permit significant flexibility in the recovery of those costs. As discussed in Qwest's opening comments (and above), one of the principal benefits of bill-and-keep is that, for the first time, it would make it feasible to employ flat-rated recovery of the costs of terminating access where that is more efficient than recovery through usage-sensitive charges. Any decision to adopt bill-and-keep should be accompanied by sufficient flexibility in end user rates that those rate structure efficiencies can be achieved.²⁰

IV. The Commission has legal authority to impose bill-and-keep for most traffic.

The parties' divergent interpretations of the statutory provisions addressing intercarrier compensation rates confirm that those provisions, like a number of other

²⁰ Because adopting bill-and-keep for access traffic would require significant reform of existing subsidy mechanisms, it would be appropriate to solicit the views of the Joint Board, just as the Commission might wish to do in response to the Tenth Circuit's recent decision invalidating the Ninth Report and Order. *See generally* 47 U.S.C. §§ 254(a), 410(a). Nonetheless, to avoid undue delay, the Commission should enforce a strict timetable for the presentation of the Joint Board's report and recommendation. A Joint Board could also recommend any adjustments to the current separations rules that might be appropriate to accommodate bill-and-keep. *See* 47 U.S.C. § 410(c). Although NECA hints that bill-and-keep would require significant changes to those separations rules, it is unclear why that would be so. As NECA acknowledges, bill-and-keep addresses how network costs are recovered (*i.e.*, from end users or from other carriers), not how they are allocated between jurisdictions. *See* NECA Comments 13. Of course, this Commission and its state counterparts would need to continue ensuring that ILECs receive a compensatory rate of return on both the interstate and intrastate sides of the ledger. *See generally Smith v. Illinois Bell Tel. Co.*, 282 U.S. 133 (1930). But there is no apparent reason why, after adoption of bill-and-keep, that requirement could not be met within the existing separations regime.

provisions in the 1996 Act, “[are] in many important respects a model of ambiguity or indeed even self-contradiction.” *AT&T v. Iowa Utils. Bd.*, 525 U.S. 366, 397 (1999). In these circumstances, where there is no obvious way to reconcile the various strands in the statutory text, the result is a rule of considerable deference to the Commission. As the Supreme Court has observed, “Congress is well aware that the ambiguities it chooses to produce in a statute will be resolved by the implementing agency.” *Id.* The Commission has broad discretion to resolve those ambiguities to pursue what, in light of its institutional expertise, it concludes is in the public interest. *See id.*

A. The Commission has authority to impose bill-and-keep for traffic covered by section 251(b)(5).

Opponents of bill-and-keep mistakenly treat the language of section 252(d)(2) as though it reflected a deliberate congressional choice as between CPNP and bill-and-keep for particular categories of traffic. *E.g.*, AT&T Comments 36-41. That provision does no such thing; in particular, it nowhere limits the reach of the bill-and-keep savings clause to cases of balanced traffic.²¹ Instead, Congress gave the FCC and the state commissions a choice: either to elect “arrangement[s] that waive mutual recovery (such as bill-and-keep arrangements)” or to elect a truly cost-based CPNP regime. *See* Qwest

²¹ AT&T contends (Comments 36) that section 252(d)(2)(B)(i) “clarifies that ‘arrangements that waive recovery (such as bill-and-keep arrangements)’” are permissible only “if they ‘afford the mutual recovery of costs through the offsetting of reciprocal obligations.’” The first of those statutory quotations by AT&T omits a word in the bill-and-keep savings clause: that clause explicitly preserves “arrangements that waive *mutual* recovery (such as bill-and-keep arrangements).” AT&T thus nonsensically contends that the savings clause preserves “arrangements that *waive* mutual recovery” of costs only if those arrangements also (impossibly) “*afford* the mutual recovery of costs.” 47 U.S.C. § 252(d)(2)(B)(i) (emphasis added). The Commission is entitled to assume that Congress meant to make sense, and any ambiguity in this statutory language should be resolved in favor of an appropriately robust construction of this savings clause.

Opening Comments 43. What section 252(d)(2) precludes is the imposition of a non-cost-based scheme of compelled payments between carriers. But section 252(d)(2) does not constrain the Commission's choice of bill-and-keep if it determines, as it should here, that it would better serve the public interest than a purportedly cost-based CPNP alternative.

In any event, even if the bill-and-keep savings clause were ignored, section 252(d)(2)(A), standing alone, would not preclude bill-and-keep arrangements, because at most it would require regulators to permit recovery of the "additional costs" of transport and termination. *See* Qwest Opening Comments 42. That specialized term is reasonably construed to limit any intercarrier payments to the short-term marginal costs (effectively zero) of transporting and terminating each call. *Id.* Contrary to WorldCom's suggestion (Comments 19), determining that the "additional costs" of transport and termination are zero for these purposes does not somehow imply that the *total element long run* incremental cost of switching and transport is zero for purposes of setting the rate that CLECs must pay when leasing an ILEC's network elements. TELRIC was adopted under a different statutory standard: the UNE cost standard of section 252(d)(1). The Commission's implementation of that provision in that context has no logical bearing on its authority to impose bill-and-keep as an appropriate intercarrier compensation mechanism.

Citing the Supreme Court's 1999 decision in *Iowa Utilities Board*, Focal suggests that, in adopting bill-and-keep for traffic covered by section 251(b)(5), the Commission would cross a perceived jurisdictional line dividing (1) the FCC's authority to issue general methodological rules from (2) the states' power to set particular rates. Focal

Comments 32-33; *see generally Iowa Utilities Bd.*, 525 U.S. at 384. This argument is without merit. Bill-and-keep is a methodology, not a “rate.” The Commission has no less authority to preclude intercarrier termination charges for all traffic than to preclude it for balanced traffic – or, for that matter, to preclude one carrier from charging another for the cost of originating a local call (as, indeed, it has already done, *see* 47 C.F.R. § 51.703(b)). More generally, the Supreme Court has made abundantly clear that the Commission has plenary authority to resolve broad methodological issues of national importance to the industry. The issue before the Commission here is as general and nationally significant as they come: whether the rationalized intercarrier compensation regime for the 21st century will be bill-and-keep or some version of CPNP. The Commission can and should resolve that issue in favor of bill-and-keep.

B. The Commission has authority to adopt measures encouraging states to move towards bill-and-keep for intrastate access traffic.

The Tenth Circuit recently held that, under sections 254(b)(3) and (b)(5), the Commission has not just an opportunity but an “obligat[ion]” to induce the states – by “carrot or . . . stick” – to do their part in ensuring comparable rates within their states.²² The logic of the Tenth Circuit’s ruling strongly indicates that the Commission has a more general authority to give the states appropriate inducements to make the transition from irrational, implicit funding mechanisms to the rational, explicit mechanisms required by section 254. Indeed, the very cornerstone of section 254 is the principle that, on both the interstate and the intrastate sides of the ledger, universal service should be funded not by ILECs alone through geographic rate-averaging and other implicit subsidies, but by “[a]ll

²² *Qwest Corp. v. FCC*, 258 F.3d 1191, 1204 (10th Cir. 2001) (internal quotation marks omitted).

providers of telecommunications services” through “equitable and nondiscriminatory contribution[s]” to explicit subsidy mechanisms.²³ Just as the Commission must “develop mechanisms to induce adequate state action” to fulfill the comparable-rate objectives of subsections 254(b)(3) and (b)(5),²⁴ so too must the Commission adopt mechanisms to induce state compliance with the core objective of subsections 254(b)(4), (c), and (f): a comprehensive transition by the FCC and the states to explicit, competitively neutral universal service programs.

Qwest therefore agrees with SBC (Comments 33-43) that the Commission can and should condition receipt of federal universal service funding on a state’s willingness, over time, to remove all implicit subsidies from its intrastate access charges and to convert them into explicit intrastate funding mechanisms. That carrot is likely to be highly effective, since the federal fund will play a critical new role in replacing the implicit subsidies that section 254(g) now produces under the existing access charge regime and that the adoption of bill-and-keep would sensibly eliminate. Once the states transition away from those implicit subsidies, any residual attraction of retaining the existing intrastate access charge regime would be highly attenuated, because that regime could no longer be used as a competitively skewed source of funding for universal service. The way would then be cleared for the Commission to lead a national regulatory consensus in support of bill-and-keep.

Finally, even if some states were reluctant to adopt bill-and-keep, such that conventional access charges accompanied intrastate but not interstate access traffic, that

²³ 47 U.S.C. § 254(b)(4); *see also* 47 U.S.C. §§ 254(e) & (f).

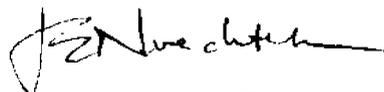
²⁴ *Qwest Corp.*, 258 F.3d at 1204.

reluctance would increasingly lead carriers to route traffic through digital networks (such as the Internet) in which “the interstate and intrastate components [of the traffic] cannot be reliably separated” – and that are thus categorically subject to the Commission’s section 201 authority to impose bill-and-keep. *See ISP Reciprocal Compensation Order* ¶ 52. As discussed in Qwest’s opening comments (at 46-47), and as also observed by SBC (Comments 42-43), that inevitable consequence of digital technology would make alternatives to bill-and-keep unsustainable in any jurisdiction over the long term.

CONCLUSION

For the reasons set forth here and in Qwest’s opening comments, the Commission should adopt bill-and-keep for all traffic to the fullest extent of its jurisdiction.

Respectfully submitted,



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November 5, 2001

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1. INTRODUCTION

I am William P. Rogerson. I am Professor of Economics at Northwestern University, where I am also Co-Director of the Center for the Study of Industrial Organization and Director of the Program in Mathematical Methods in the Social Sciences. I served as Chief Economist at the Federal Communications Commission from June 1, 1998 to May 31, 1999. I have also served on the Faculty of Economics at Stanford University and spent a year visiting the University of Chicago as an Olin Fellow at the Center for the Study of the Economy and State. I served as Chair of the Department of Economics at Northwestern from 1996-1998 and was elected a Fellow of the Econometric Society in 1999. In addition to conducting academic research, I have served as a consultant to a number of government agencies and non-profit organizations, including the Federal Trade Commission, the Institute for Defense Analysis, the Logistics Management Institute, the Office of the Secretary of Defense (Program Analysis and Evaluation), the RAND Corporation, and the U.S. Department of Justice.

I have been asked by Qwest Communications International, Inc. (Qwest) to read and analyze the record created thus far in the Commission's intercarrier compensation proceeding,¹ and to offer my views on the suitability of bill-and-keep as a basis for creating a new unified and efficient intercarrier compensation regime.² I conclude that bill-and-keep would promote efficiency and enhance competition, both by rationalizing and unifying existing regulations, and

¹My curriculum vitae is attached as an appendix to this Declaration.

²This proceeding was initiated by a Notice of Proposed Rulemaking issued by the Commission on April 27, 2001. *Developing a Unified Intercarrier Compensation Regime*, Notice of Proposed Rulemaking, CC Docket No. 01-92, FCC 01-132 (rel. Apr. 27, 2001) (NPRM).

³"Bill-and-keep" refers to a regime whereby a carrier recovers its network costs primarily, if not exclusively, from its end users, rather than interconnecting carriers.

by allowing the Commission to deregulate termination prices and certain other key prices charged by non-dominant carriers. Such a regime would be superior to one based on calling party's network pays (CPNP). While the main advantages of bill-and-keep would be captured by the basic bill-and-keep regime described by the Commission in its NPRM and the accompanying staff paper by DeGraba,"the proposal outlined by Qwest in its reply comments' to modify the basic regime by moving to a division of financial responsibility at the "edge of the network" offers some extra advantages that make it a particularly desirable choice. In this Declaration, I explain the major advantages that a basic bill-and-keep regime offers, the extra advantages that Qwest's "edge of the network" proposal offers, and, finally, why the arguments advanced by opponents of bill-and-keep are incorrect, insignificant, or properly dealt with by simple safeguards and rules.

2. EXECUTIVE SUMMARY

In its recent NPRM on intercarrier compensation regimes, the Commission begins its reexamination of all currently regulated forms of intercarrier compensation by observing that the current system is a crazy patchwork of regulations that treat the same types of economic transactions in very different ways depending upon factors which make no essential economic difference. When one carrier hands off a telephone call to another carrier, existing regulations might require that the first carrier compensate the second carrier, that the second carrier compensate the first carrier, or that neither compensate the other, all depending upon

¹See Patrick DeGraba, *Bill-and-keep at the Central Office as the Efficient Znterconnection Regime*, OPP Working Paper 33, December 2000 (DeGraba 2000).

²Reply Comments of Qwest Communications International, Inc., *Developing a Unified Intercarrier Compensation Regime*, CC Docket No. 01-92 (Nov. 5, 2001) (Qwest Reply Comments).

economically irrelevant factors such as whether the call is viewed as local or long distance, whether the carriers are local carriers or long distance carriers, whether the carriers are wireline or wireless carriers, and whether the call ultimately terminates at an Internet service provider (ISP) or not. The Commission observes that the current system creates distortions and arbitrage opportunities by treating what are essentially similar transactions in such disparate ways. These arbitrary distinctions bias technology choices, pick winners and losers in advance, and at times encourage firms to make massive investments simply to earn arbitrage profits rather than to accomplish any real productive purpose. In this NPRM, the Commission sets out toward the ambitious and laudable goal of subjecting this patchwork of regulations to a searching and thorough analysis and to replace it, to the extent possible, by a single unified regime explicitly designed to promote efficiency and competition and minimize the need for regulatory intervention as competition continues to develop.

In particular, in the NPRM and an accompanying staff paper by DeGraba 2000, the Commission suggests that bill-and-keep might provide the basis for creating such an efficient unified system. Under bill-and-keep, local carriers⁶ are not allowed to charge interconnecting carriers for the local carriers' own costs of originating and terminating calls within the local network. Rather, they must look to their own end-users for recovering these costs. Different types of bill-and-keep regimes can be created by varying either the definition of what facilities are viewed as being local access facilities or the default responsibilities of carriers to provide

⁶In this paper I will use the term "local carrier" to refer to any carrier providing end users with a direct link to the public switched network through a loop and end office switch or the functional equivalent of such facilities. This term includes incumbent local exchange carriers, competitive wireline local exchange carriers, and providers of wireless service. I will use the term incumbent local exchange carrier (ILEC) as it is used in the Communications Act of 1934, as amended. See 47 U.S.C. § 251(h).

transport between networks. In its reply comments, Qwest suggests one modification to the basic bill-and-keep proposal described by the Commission, by suggesting that the definition of local access facilities be expanded to include tandem switches serving end offices and transport between tandem switches and end offices (when such tandems exist). Qwest describes this approach as an “edge of the network” default division of financial responsibility since this modification essentially expands the definition of local access facilities outwards to the edge of the local carrier’s network.

Moving to a bill-and-keep regime offers **three** main advantages.⁷ First, a bill-and-keep regime is significantly less regulatory than the current regime because, under bill-and-keep, there is no need to regulate termination prices charged by non-dominant carriers. Second, certain severe regulatory arbitrage problems that occur under the current regime can be completely avoided under a bill-and-keep regime. Third, under the Qwest proposal, it should be possible to reduce regulation of the transport prices that ILECs charge interconnecting carriers.

First, bill-and-keep is significantly less regulatory than the current regime because it eliminates the need to regulate termination prices charged by non-dominant carriers.⁸ As will be discussed below, even in very competitive telecommunications markets where there are large numbers of competing local carriers, it will still be necessary for government to regulate the termination prices that non-dominant local carriers charge other firms, due to the terminating monopoly problem. However, there is no need to regulate termination prices that non-dominant

The first two advantages of bill-and-keep **apply** to both *the DeGraba 2000* and *Qwest* proposals and, in fact, to almost any sensibly designed bill-and-keep regime. The third advantage applies to the Qwest proposal but not to the *DeGraba 2000* proposal.

⁸As will be discussed in Section 4.1.4, a similar argument can also be made with respect to origination prices charged by non-dominant local carriers for long distance calls; these must be regulated under the current regime but could be deregulated under a bill-and-keep regime.

local carriers charge their own end users, because competition for these end users will itself control prices. Because even very good regulators will never be able to obtain sufficiently detailed, accurate, or timely information to set all prices equal to their perfectly efficient levels, regulation can never be expected to create the same incentives for efficiency that can be created by competitive markets. This is particularly true in industries such as telecommunications where technology is evolving rapidly and where there is a need for flexibility and experimentation with pricing structures and business models. And regulation is costly. Therefore, the fact a bill-and-keep regime would allow the Commission to let competition set prices that would otherwise have to be set by regulation is a significant advantage. That is crucial because, in the NPRM, the Commission states that one of its goals is to identify a system that “minimizes the need for regulatory intervention, both now and as competition continues to develop.”⁹

Second, a particularly serious and pernicious arbitrage problem that arises under the CPNP regime can be completely avoided by switching to a bill-and-keep regime. To the extent that termination prices that carriers are allowed to charge other carriers are set above the actual cost of providing termination in a CPNP regime, incentives are created for CLECs to invest in facilities that allow them to serve end users such as ISPs that primarily receive calls but do not originate calls, even if the CLECs are not the lowest cost service providers. Furthermore, because these termination fees paid by the originating carrier are not passed back to end users making the calls, such high prices do not automatically sow the seeds of their own destruction by creating incentives for end users to try to avoid using ISPs served by CLECs that charge these high fees.

⁹ See NPRM at 3.

Third, the bill-and-keep system proposed by Qwest should allow the Commission to significantly deregulate ILEC provision of transport services to interconnecting carriers. This is because the Qwest proposal relieves interconnecting carriers of the responsibility to purchase transport deep within the ILEC network in order to deliver calls to every end office of the ILEC. Instead, under the Qwest proposal, interconnecting carriers are permitted to relinquish financial responsibility for traffic at the ILEC tandem. It is much more likely that competitive alternatives will be available for the more limited amount of transport that interconnecting carriers will be required to provide under the Qwest proposal.

The remainder of this Declaration proceeds as follows. Section 3 describes the broad outlines of the Qwest proposal for implementing a bill-and-keep regime. Section 4 discusses the three main advantages of moving to such a regime. Section 5 considers the potential problems with moving to a bill-and-keep regime that have been identified by various parties in the first round of comments of this proceeding. I show in each case that these problems are either incorrect or insignificant or that simple modifications can be made to the basic bill-and-keep regime to deal with them. Finally, Section 6 draws a brief conclusion.

3. QWEST'S BILL-AND-KEEP PROPOSAL

In this section, I will describe the main features of the Qwest proposal for a bill-and-keep regime. The proposal is described in more detail in Qwest's reply comments. Although the Qwest proposal supplements, expands upon, and clarifies the DeGraba 2000 proposal in a number of ways, it is similar in broad outline to the DeGraba proposal **with** one main exception. This is that Qwest proposes that the definition of local access facilities (i.e., network assets whose costs must be recovered from a local carrier's own end users) be expanded to include the tandem switch serving the end office, and transport between the tandem switch and end office, in

addition to the end office and loop. More specifically, Qwest proposes that, if an interconnecting carrier chooses to drop off a call at a tandem switch serving the called party's end office instead of directly at the end office, the terminating carrier would be responsible for recovering all termination costs beyond that point, including tandem switching and transport between the tandem and end office. Qwest refers to this approach as an "edge of the network" default division of financial responsibility, since this modification essentially expands the definition of local access facilities outwards to the edge of the local carrier's network.

There are two main advantages of the Qwest proposal over the DeGraba 2000 proposal. First, it places less onerous default transportation obligations on CLECs (and other non-ILEC local carriers), and therefore will encourage the growth of competition in local telecommunications markets. ILECs have historically constructed hierarchical networks, where multiple end office switches connect to a tandem switch. However, many other local carriers have chosen to build "flatter" network structures with no tandems, fewer end offices, but longer loops. This means that an area that an ILEC serves with multiple end offices connecting to a single tandem will often be served by another local carrier, such as a CLEC, with a single end office. The DeGraba proposal has the effect of imposing asymmetric transportation obligations on the CLEC and ILEC in such a case: The ILEC is typically required to deliver calls only to a single location in the CLEC's network while the CLEC is required to deliver calls to multiple end offices in the ILEC's network, even though both networks are serving the same area. By contrast, the Qwest proposal would reduce the transport obligation of the CLEC so that it is more symmetric to the transport obligation of the ILEC.

To the extent that the Qwest proposal reduces CLECs' costs of exchanging traffic, it would encourage the growth of the CLEC industry and therefore speed the overall growth of

competition in local telecommunications markets. In particular, the Qwest proposal, as compared to the DeGraba 2000 proposal, would reduce the extent to which **an ILEC** could prevent entry or induce exit of CLECs simply by refusing to negotiate efficient two-way trunking arrangements. Therefore, the Qwest proposal would reduce **any potential incentives** that ILECs might have to refuse to negotiate efficient transport arrangements, relative to the DeGraba proposal.

The second advantage of Qwest's proposed change to the DeGraba 2000 proposal is that it will allow the Commission to further deregulate prices that ILECs charge interconnecting carriers for transport. This issue will be discussed in detail in Section 4.

4. THE MAIN ADVANTAGES OF MOVING TO A BILL-AND-KEEP REGIME

4.1 Bill-and-keep eliminates the need for regulation of termination prices charged by non-dominant carriers.

4.1.1. The terminating monopoly problem.

Among economists that study telecommunications, it is a well understood **and** completely accepted fact that local carriers will set termination fees too high if they are allowed to charge those fees to calling parties.⁹ The reason is that the local carrier has a sort of "monopoly" with respect to the property right of being able to terminate calls to any of its end users. Therefore, the local carrier will find it profit-maximizing to raise its prices above cost in order to take advantage of this monopoly power. **So long as** end users of the local carriers care more about minimizing the prices that they pay the local carrier than about minimizing the prices that callers

⁹See the various articles and books cited below.

to them pay, unregulated termination prices will be inefficiently high no matter how much *ex ante* competition there is for end users among the local carriers.

There are at least three reasons why it is reasonable to expect that consumers will care more about minimizing the prices they themselves pay than about minimizing the prices that parties calling them pay. First, unless there is some direct business relationship between the two parties or they are part of the same family unit, an end user will lose no money himself if a party calling him (or the calling party's carrier) has to pay more. Rather, the only possible negative effect on the called party is that that party may receive fewer calls, which does not capture the full cost of higher rates experienced by the calling party." Second, as will be discussed in more detail in section 4.1.3 below, under current institutional arrangements following largely from state regulations, even this effect generally does not exist. This is because local carriers charge termination fees to other carriers and these carriers generally are not allowed to flow back termination charges to their end users making the call. Therefore an end user choosing a local carrier will quite rationally predict that (under current institutional arrangements) the local carrier's higher termination prices to the calling party's carrier will NOT reduce the number of calls the end user receives. Third, even if a system where charges could be flowed back to calling end users were instituted, higher termination charges on calling parties would reduce the number of calls an end user receives only to the extent that calling parties had sufficiently good information to be aware of the termination charges that every different local carrier charged and

"For example, suppose a calling party reduced its calling very little in response to a price increase but instead simply spent more. The calling party would still be worse off by the extra amount it was paying, but the called party would not perceive that there was any harmful effect of the price rise.

which local carrier each of the people they called subscribed to. Consumer information on this issue is likely to be far from perfect.

Experience in Great Britain confirms that end users do not seem to place much weight on the issue of termination charges levied on others when they choose a telephone provider. In Great Britain, wireless phone operators charge termination fees directly to the calling party. The British regulatory authority, Ofel, has found that users of mobile phones pay very little attention to the size of these termination fees when they choose their carrier and, in fact, generally do not even know what they are.

Generally, Ofel survey data . . . suggests that residential mobile phone owners are mostly driven by cost when it comes to choosing their mobile phone network. However, they appear to place very little weight on the price of calling their mobiles when they choose their mobile network. Only 15% of potential subscribers found out how much it would cost to call their mobile, and this cost was not thought to be a significant factor in their choice of a network. This survey data also suggested that even if it was a significant fact, they might face difficulty in getting and understanding information on costs of calling mobiles.¹²

One of the first academic papers that I am aware of that described the terminating monopoly problem was by British economist Mark Armstrong, who built a model along these lines in order to explain why he thought that the British government needed to regulate the termination prices that wireless telephone companies charged to calling parties even though the market appeared to be quite competitive.¹³ Armstrong was recently invited to write the chapter on network interconnection for the forthcoming *Handbook of Telecommunications Economics*,

¹²See Ofel, *Review of the Price Control on Calls to Mobiles - A Consultive Document Issued by the Director General of Telecommunications*, 9-10 (February 2001) (available at www.ofel.gov.uk/publications/mobile/ctom0201.htm) (Ofel 2001).

¹³Mark Armstrong, "Mobile Telephony in the U.K.," (September 1997), Nuffield College, Oxford.

and his analysis of the terminating monopoly problem occupies one of three major sections in his chapter. He summarizes his findings as follows:

[W]hen a subscriber signs up with a network, that network has a monopoly over delivering calls to the subscriber, and it can extract monopoly profits from the callers to this subscriber. Even if the market for subscribers is intense, so that overall profits are eliminated in the sector, these monopoly profits - and the consequent deadweight losses - persist.⁴

In their recent book on Competition in Telecommunications, Laffont and Tirole draw the same conclusion:

It is worth recording here the common fallacy that small players do not have market power and should therefore face no constraint on their termination charges. This fallacy results from a misunderstanding of the definition of a market. A network operator may have a small market share in terms of subscribers; yet it is still a monopolist on the calls received by its subscribers.⁵

Furthermore, this problem is not merely theoretical. In Great Britain, when termination prices that mobile networks were allowed to charge calling parties were unregulated, networks charged high termination fees that were clearly above cost, and this forced the British government to step in and regulate these rates. In a recent statement, Oftel, the British regulatory authority, sums up the problem as follows:

The overall effect of the calling party pays principle in the retail market is that, whereas mobile networks have an incentive to keep the price of those services required and paid for by the mobile owner at a level to attract and retain customers, they have less incentive to keep the price of calls to mobiles low because the callers cannot take their business elsewhere if dissatisfied (the caller has to use that network to reach that particular phone number). . . . Overall, Oftel's view is that the calling party pays principle results in there

⁴See Mark Armstrong, "The Theory of Access Pricing and Interconnection," in *The Handbook of Telecommunications Economics*, North Holland (forthcoming 2001), section 3, at 40 of manuscript version dated February 2001.

⁵Jean-Jacques Laffont and Jean Tirole, *Competition in Telecommunications*, MIT Press, Cambridge, 2000, at 186 (emphasis in original).

being limited incentive for the [wireless providers] to reduce charges to the competitive level; rather there is an incentive for [wireless providers] to keep them high.¹⁶

As the above OfTel quote explains, the source of the problem when local carriers are allowed to charge terminating prices to people other than their own end users is that the person choosing the local carrier is NOT the person paying the termination prices. Therefore, termination prices will not play a significant enough role in the end user's selection of a local carrier, and termination prices will be inefficiently high. This problem obviously does not apply if the end user himself is paying the termination charges, and this is why there is no need to regulate termination prices that local carriers levy on their own end users. In this case, the person choosing the local carrier is the person paying the termination price, so competition will result in termination prices being 'competed down to cost.

4.1.2. When carriers cannot pass through terminating charges to calling parties, the terminating monopoly problem is exacerbated.

It is obvious that the terminating monopoly problem grows even more severe if local carriers are allowed to charge terminating prices to other carriers and these other carriers are not allowed to pass through these terminating prices to their own end users. In such a case, callers view the terminating price as zero no matter how high it gets, and therefore callers' demand to place calls remains high even if the local carrier raises prices. This creates an extraordinarily high incentive for local carriers to raise termination prices.

This is precisely the situation that exists for both long distance and local calls. For the case of long distance calls, existing pricing regulations require IXCs to charge an average rate for all their calls independent of the termination charges that are actually levied for a particular call.”

¹⁶See OfTel (2001) at 9.

¹⁷See 47 U.S.C. § 254(g).

With respect to long distance termination prices, local carriers are therefore in the enviable position that IXCs that provide services nationwide such as AT&T will continue to charge exactly the same prices to reach their end users regardless of how high the local carrier raises its termination prices. Until very recently, the termination prices that CLECs charged IXCs were completely unregulated. The Commission was forced to begin regulating these prices precisely because such carriers had no incentive to keep these prices low.¹⁴

For the case of local calls, state regulatory commissions, generally speaking, require ILECs to charge a flat rate for all local calls. Therefore, end users of the ILEC calling end users of another local carrier view the incremental cost of the call to be zero regardless of how high the other local carrier raises its termination prices. Since the termination prices that local carriers are allowed to charge ILECs have always been regulated, we have not observed the same extraordinarily high prices that occurred in the previously unregulated market for CLEC termination of long distance calls. But precisely the same logic applies, and we can be sure that a local carrier would have an extremely strong incentive to raise its local termination rates charged to other carriers to very high levels if these rates were unregulated. Therefore there will be a permanent need for regulation of termination prices so long as local carriers are allowed to charge these prices to other carriers rather than their own end users.

4.1.3. When interexchange carriers cannot pass through originating access charges to their end users, then originating access charges by non-dominant carriers must be regulated.

The same type of problem described above for the case of terminating fees also exists for originating fees. That is, if a local carrier (even if non-dominant) is allowed to charge

"Reform of Access Charges Imposed by Competitive Local Exchange Carriers, Seventh Report and Order and Further Notice of Proposed Rulemaking, CC Docket No. 96-262, FCC 01-146 (rel. Apr. 27, 2001) (CLEC Access Charge Order).

origination fees to an interconnecting carrier and the interconnecting carrier is not allowed to flow back these charges to the calling party, the carrier will have an incentive to raise these origination fees above the competitive level. This is precisely the situation that exists with respect to originating long distance access charges. The same regulation that requires IXCs to charge an average termination fee (as part of their long distance rates) across all their end users also requires them to charge an average origination fee across all of their end users.¹⁸ Therefore, if a particular local carrier raises the originating access charges that it levies on IXCs, IXCs are not allowed to respond by raising the long distance prices they charge to end users of that particular local carrier. Rather, the IXCs must continue to charge an average rate that reflects the origination costs they experience across all their end users. Therefore, in effect, a small local carrier can raise its originating access charges without affecting the prices its end users pay for long distance-service at all. This, of course, gives the local carrier a powerful incentive to raise originating access charges.

Of course, no such incentive exists under a bill-and-keep regime because, in this case, the local carrier charges origination fees directly to its own end users. Therefore, so long as the local carrier is non-dominant, competition among local carriers for end users will control these prices.

4.1.4. The costs of regulating non-dominant carriers.

It is impossible for regulation to set all prices equal to correctly calculated forward looking costs because the task is simply too complicated and requires too much information. The job of the regulator is not simply to discover the one correct per-minute rate that all carriers should charge for all types of traffic for all time. The constant introduction of new products and

¹⁸See 47 U.S.C. § 254(g).

technologies means that underlying cost conditions are always changing and that the regulatory system must be constantly responding to new issues and problems. To complicate matters further, the cost of end office switching is in many ways a **peak load cost**: i.e., the main cost is building capacity and there must be enough capacity to meet peak demand. In such cases, it is likely that even more complex pricing schedules using time-of-day pricing are likely to be efficient. The chance of even very good regulators being able to get this even more complex problem right grows even smaller.

4.2 Bill-and-keep eliminates severe arbitrage problems that occur under CPNP.

Recent events surrounding the issue of ISP-bound traffic²⁰ illustrate a particularly serious and pernicious arbitrage problem that arises under the CPNP system that could be completely eliminated by switching to a bill-and-keep regime. The problem occurs when local carriers are able to find a class of end users that primarily receive calls and the per-minute cost to the local carrier of terminating the traffic is less than the regulated termination rate set by government. In such a case, these end users will become virtual “money pumps” for local carriers since they are able to earn a profit on every minute of incoming traffic and this is not counterbalanced by payments for traffic in the opposite direction.

In retrospect, it now appears that the termination rates that CLECs were allowed to charge ILECs for terminating ISP-bound traffic were well above their actual cost of providing termination. This created an incentive for CLECs to invest in facilities that allowed them to

²⁰See *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Intercarrier Compensation for ISP-Bound Traffic*, Order on Remand and Report and Order, CC Docket Nos. 96-98 and 99-68, FCC 01-131 (rel. April 27, 2001), for the Commission’s most recent order on this subject and a history of events leading up to the current situation.

serve ISPs, not because they were necessarily more efficient providers of service to ISPs, but because government regulations allowed them to earn a price well above cost for serving ISPs. Because the existing regulatory structure did not allow ILECs to pass these termination charges back through to their own end users, the fact that CLECs charged high termination prices had no effect at all on the demand of the ILECs' end users for the services of ISPs served by CLECs.

Years after the problem became apparent, and years after CLECs had invested large amounts of money to serve and attract this group of end users, the regulatory process finally ground into action, and the Commission recently decided to lower the termination rate that local carriers are allowed to charge for ISP-bound traffic. While it appears that this particular arbitrage problem created by this particular class of traffic may now have been substantially dealt with, massive distortions in business investment decisions occurred in the meantime.

Furthermore, new pricing problems will likely arise in the near future and may cause equally severe problems before government is able to respond to them. One new problem on the horizon concerns paging companies. Under Commission regulations, paging companies are viewed as local carriers that only terminate traffic. Therefore, under the existing CPNP regime, they are entitled to charge other local carriers termination fees. The cost of terminating traffic for paging companies is considerably less than the normal termination price that regular local carriers are allowed to charge. Thus, if paging companies were allowed to charge this regular price, every paging end user would become a "money pump" for the paging company. Paging companies would have an incentive to pay people to become their end users and to pay other people to page the first group of people. The Commission was aware of this problem and dealt with it a number of years ago by specifying that paging companies would only be allowed to

charge a special extremely low terminating price."²¹ **Based** on conversations with Qwest staff, I have become aware that instances are now arising where paging companies are attempting to avoid this regulation by becoming end users of CLECs. Under this new arrangement, paging traffic runs from the end users of the ILEC to end users of the paging company through the CLEC, and the CLEC is attempting to charge the regular high termination price for this traffic. Once again, even if the Commission eventually is able to respond to this arbitrage opportunity by making a one-time piecemeal adjustment to the regulated price of termination for one more class of traffic, there will be dislocations of investment in the meantime. Furthermore, another new arbitrage opportunity is likely to come along as soon as this one is solved.

4.3 Bill-and-keep will allow further deregulation of transport prices that ILECs charge to other carriers.

Another advantage of bill-and-keep is that it will allow further deregulation of transport prices that ILECs charge interconnecting carriers. To understand the reason for this, one may view the market for intra-LATA transport purchased by interconnecting carriers as being divided into two segments: (i) transport between the ILEC's tandem switches and subtending local switches, and (ii) transport from other local carriers' end offices to the ILEC tandem. Alternate sources of supply to the ILEC are much more likely to exist for market segment (ii) than market segment (i), because the higher levels of traffic and greater number of interconnecting carriers at tandems have generally encouraged more alternate providers to build transport facilities to tandems. Under a properly structured bill-and-keep regime, carriers are no longer required to purchase items in market segment (i) from the ILEC in **order to exchange** traffic with **the ILEC**.

²¹See *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996; Interconnection Between Local Exchange Carriers and Commercial Mobile Radio Service Providers*, CC Dockets No. 96-98, 95185, 11 FCC Red **15499**, 16043-44 ¶¶ 1092-93 (1996).

Instead, the **ILEC** directly sells these services to end users under prices that are regulated as part of end user charges so long as the ILEC is deemed to be dominant. However, interconnecting carriers will still continue to purchase items in the second market segment from the **ILEC**.

Because the ILEC is less likely to have market power in this segment due to the comparatively greater availability of transport from IXCs, other LECs, CAPs, etc., the Commission may deem it more appropriate to deregulate ILEC provision of transport to interconnecting carriers.

Therefore the advantage of moving to a bill-and-keep regime is that, by separating market segment (i) from market segment (ii), it removes any obstacles to deregulation of market segment (ii).

5. ARGUMENTS RAISED BY OPPONENTS OF BILL-AND-KEEP ARE INCORRECT, INSIGNIFICANT, OR PROPERLY ADDRESSED THROUGH SIMPLE SAFEGUARDS AND RULES

5.1 It is preferable to replace regulation with competition where possible instead of merely attempting to more accurately set regulated prices equal to forward-looking cost.

Janus Ordover and Robert Willig, on behalf of AT&T, argue that most of the arbitrage problems that occur under the CPNP system could be solved if regulators were able to do a perfect job of always setting all regulated prices equal to correctly defined forward-looking cost.²² I think that Ordover and Willig are basically correct that, in theory, if regulators had enough information, time, and knowledge to set all prices equal to their theoretically perfect values, regulation would then work quite well. In fact, since the “perfect values” for prices are by definition the values that competitive markets would set, the statement that “perfect” regulation is **just as good as** competitive markets is really more of a definition of what is meant by perfect regulation than a statement with any real economic content.

²²Janus Ordover and Robert Willig, August 20, 2001, “Declaration of Janus A Ordover and Robert D Willig on Behalf of AT&T Corp.,” (Ordover and Willig), section VI.

I am a bit puzzled as to why Ordover and Willig think that the observation that CPNP would work quite well if it could be paired with a theoretically perfect regulatory process creates a justification for CPNP. As I have stated above, one of the main advantages of moving to a bill-and-keep regime over a CPNP regime is that it reduces the need for regulation. In particular, there is no need to regulate termination fees charged by non-dominant carriers under bill-and-keep, but these fees must be regulated under CPNP. I agree with Ordover and Willig that if regulation could always produce theoretically perfect prices, then there would be no real need to replace regulation by competition where this is possible. My main point is that it is impossible for regulation to achieve this ideal of theoretical perfection and that it therefore makes sense to substitute competition for regulation when this is possible. Therefore, while I agree that CPNP would work fairly well if regulation could always set theoretically perfect prices, I disagree strongly that this statement somehow provides a justification for CPNP.

In other parts of their declaration, Ordover and Willig in fact acknowledge precisely this point - that it is not realistic to expect that regulation will always get prices perfectly correct.

Their declaration includes the following two statements:

We recognize that it is no easy or error-free task for regulators to estimate costs and set rates. The many "bumps in the road" to cost-based reciprocal compensation rates illustrate the difficulties regulators face in a world of imperfect and asymmetric information. We are therefore entirely sympathetic to the desire to find a regime that can remedy existing market distortion but that would not require rate regulation."

We recognize, of course, that setting cost-based rates that replicate competitive market outcomes is no simple task, and we are strong proponents of a first principle of economic regulation that such ratemaking should not even be attempted if markets and competition can be relied upon to accomplish these goals instead."

²³Ordover and Willig at 9.

²⁴Ordover and Willig at 6.

Therefore even Ordover and Willig seem to acknowledge that it is highly desirable to implement policies that allow competition to set prices rather than regulation when this is possible.

Replacing the current CPNP regime with a bill-and-keep regime accomplishes this result.

5.2 Bill-and-keep is deregulatory because it allows deregulation of termination prices charged by non-dominant local carriers.

Both Ordover and Willig,²⁹ and DeGraba 2001 in his paper filed on behalf of WorldCom,³⁰ make the argument that bill-and-keep is no more deregulatory than CPNP because there will be an equal need to regulate dominant ILECs under either regime. As I have stated many times in this paper, the main reason that bill-and-keep is more deregulatory than CPNP is NOT principally because it allows less regulation of ILECs (although it accomplishes that as well, as discussed in section 4.3), but rather because it allows less regulation of non-dominant local carriers. Therefore, the argument that there is an equal need to regulate the **ILEC** under both regimes does nothing to contradict or weaken the argument of this paper that bill-and-keep is less regulatory because it allows for considerably less regulatory oversight of non-dominant local carriers. The significant regulatory distortions and arbitrage opportunities that I have described in this paper **flow** from the fact that regulation **has** failed to set termination prices charged by non-dominant carriers at the correct levels. Moving to a bill-and-keep regime will rectify these serious problems because competition will then be able to determine these prices.

Furthermore, moving to a bill-and-keep regime will reduce regulatory uncertainty by creating a more stable regulatory structure that does not need to constantly change as new

²⁹See Ordover and Willig, section III.

³⁰See Patrick DeGraba, August 20, 2001, "Implementing Bill and Keep Intercarrier Compensation When Incumbent ILECs Have Market Power," Declaration of Patrick DeGraba, filed on behalf of WorldCom (DeGraba 2001) at 5.

regulatory arbitrage opportunities created by the CPNP system become apparent and are dealt with on a piecemeal basis. This reduction in regulatory uncertainty will itself create a more favorable environment for local carriers to compete in, thereby increasing investment in such carriers.

53 Bill-and-keep will not increase the ability of incumbent ILECs to discriminate against unaffiliated IXCs by exercising control over the transport of originating traffic.

The argument that a bill-and-keep regime might give ILECs an extra opportunity to disadvantage unaffiliated IXCs is made most completely by DeGraba 2001 in a paper filed on behalf of WorldCom. DeGraba 2001 correctly observes that, under the DeGraba 2000 proposal, the ILEC would have the default financial responsibility to transport originating traffic between the ILEC end office and the IXC POP. This is also true under the Qwest proposal. DeGraba 2001 is also correct in noting that this would represent a change from the current regime, under which the IXC has default financial responsibility for both directions of traffic between the IXC POP and the ILEC end office. DeGraba 2001 suggests that this change in responsibility could raise new problems for IXCs under the following scenario, which I will call the DeGraba 2001 Scenario.

The DeGraba 2001 Scenario

Suppose that the end office of an ILEC and the POP of an IXC are currently connected by a two-way trunk owned by the IXC and that this is the most efficient interconnection method. Now suppose that, after the implementation of bill-and-keep, the ILEC insists on routing originating traffic through the ILEC tandem and transporting the traffic itself to the IXC POP using its own facilities. It then charges the IXC's end users for this service. This creates three problems for the IXC, according to DeGraba 2001. First, the ILEC is able to block originating traffic in ways that neither the IXC nor the regulator can monitor or prevent, causing the IXC's service quality to deteriorate. Second, the IXC has a more difficult time being competitive on price because the ILEC now charges the IXC's end users high prices for origination, reflecting the (inefficient) one-way transport route it insists on using. Third, the IXC now has excess transport

capacity which it cannot sell or lease because the ILEC refuses to use it and there is no other use for this transport capacity.

A bill-and-keep regime is unlikely to create significant problems of the sort DeGraba 2001 describes. First, with respect to the issue of call blocking, **based** on conversations I have had with Qwest staff, I believe that the service quality concern would be largely resolved by simple safeguards that required the **ILEC** to treat traffic bound for unaffiliated IXCs in a nondiscriminatory fashion relative to traffic bound for its own long distance affiliate. For example, the ILEC could be required to provide direct trunking on a non-discriminatory basis. **As** another example, for long distance traffic taken through the tandem, the ILEC could be required to transport traffic of its own affiliate on the same trunks that it uses to transport the overflow traffic of other IXCs so all traffic would be subject to the same rate of call-blocking. In particular, even when a direct trunk exists to *carry* traffic from a particular end office, overflow traffic is typically carried on non-dedicated trunks that flow through the tandem; a natural and simple safeguard would be to require the ILEC to carry all such overflow traffic (including the overflow traffic of its own affiliate) on the same trunks.

Second, with respect to the issue of raising the IXC's costs, once again, safeguards requiring the **ILEC** to treat all IXCs (including its own affiliate) in a non-discriminatory fashion would largely deal with this problem. Furthermore, DeGraba 2001's concern would not be significant even in the absence of such safeguards. DeGraba 2001's argument assumes that the **ILEC** will be able to pass along all of the costs of its inefficient transport choice to IXC end users. (This is why costs to IXC end users are raised.) That is, DeGraba 2001 assumes that the **ILEC** will be automatically allowed to pass through **any** increases in transport costs that it incurs by purposely choosing an inefficient transport method. If **an ILEC** is subject to rate-of-return regulation and if the ILEC incurs more costs, it would have a basis to argue that rates should be

raised to recover these costs. However, even in a pure rate-of-return system, an ILEC would have to justify that these costs are reasonable and necessary, and this might be hard to do in a situation where the ILEC is purposely not using an already-constructed two way trunk that is generally acknowledged to be the most efficient method of transport. More important, recovery of interstate costs by larger ILECs is currently regulated under a price cap regime that does not automatically allow pass-through of costs. That is, under the regulatory regime actually in existence for these carriers, the ILEC is not allowed to raise its prices if its costs go up; conversely it is not required to lower its prices if its costs go down. Therefore, assuming that the Commission does not make some radical break with its previous policies, the prices that larger ILECs will be allowed to charge end users for transport will be regulated according to some sort of price cap system. In particular, this means that ILECs will not be able to raise their prices simply by switching to more inefficient transport methods.

Third, with respect to the stranded assets issue, any sudden excess supply of capacity on the part of an IXC will be matched by an equal excess demand for capacity on the part of the ILEC that now has the responsibility to transport the traffic. The same amount of traffic will still need to be transported after the change, and the same amount of capacity will still exist to transport it. Therefore, there should be a resale market for the IXC's excess capacity if the IXC turns out to have a significant amount of such excess capacity.

5.4 Bill-and-keep will not increase the ability of incumbent ILECs to engage in price discrimination against unaffiliated IXCs.

DeGraba 2001 discusses extensively the argument that bill-and-keep will enable ILECs to engage in price discrimination against unaffiliated IXCs.²⁷ He begins with an example where

²⁷DeGraba 2001, section 3.

an ILEC disadvantages a rival IXC by charging users of its own long distance service a lower per-minute rate for local origination than it charges users of rival IXCs' long distance services. However, he then immediately acknowledges that a simple rule stating that the ILEC is not allowed to discriminate in this fashion would solve this problem and that the Commission would surely pass such a rule.²⁴ I agree with this conclusion.

DeGraba 2001 then proceeds to a more subtle example of discrimination. He considers a case where an ILEC offers to sell a "bucket" of long distance minutes for a flat fee to end users that use the ILEC's own long distance service but continues to charge a per-minute fee to end users for local origination that use rival IXCs' services. He correctly observes that it will be more difficult to make some unambiguous determination of whether or not such a scheme is discriminatory and concludes that situations like this could make it difficult for regulators to determine whether or not the ILEC is discriminating against rival IXCs. While I think this observation is generally correct, I also think that it is completely irrelevant to the issue of comparing a bill-and-keep regime with a CPNP regime. The reason is that exactly the same sorts of "fuzzy" situations could arise under a CPNP system. For example, under a CPNP system an ILEC could choose to offer its own end users a "bucket" of long distance minutes and simultaneously charge a per minute access rate to rival IXCs. Exactly the same difficulties with determining whether or not such a system is discriminatory would arise. More generally, any non-discrimination requirement enforced in a CPNP system by requiring the ILEC to charge the same access fees to all carriers could be equally well enforced in a bill-and-keep system by requiring the ILEC to provide all end users the same access fee options, irrespective of their choice of IXC.

²⁴DeGraba 2001 at 20.

5.5 Bill-and-keep will not create worse incentives for efficient use of the telephone network.

A number of the papers submitted by economists in the first round of this proceeding attempt to argue that having the calling party pay for all of the costs of a call will cause more efficient usage of the phone system than having the called party pay for at least a share of the costs of a call, as occurs under bill-and-keep.⁹

It is useful to begin by recalling what DeGraba 2000's main point is on this issue. It is NOT that a bill-and-keep system will definitely induce superior decisions regarding short run use of the telephone network than will CPNP. Rather, his point is much more modest than this; it is simply that no clear conclusions can be drawn in this regard and that the significant advantages that bill-and-keep exhibits in other areas therefore justify its adoption.

More specifically, his point is that, in general, good incentives for short run use of the telephone network will be created when the costs of making phone calls are allocated in proportion to the average relative benefits of telephone calls. Under a CPNP system, the calling party pays for 100 percent of the call. Under a bill-and-keep regime, the calling party pays for less than 100 percent of the call but more than 50 percent of the call. (The precise share depends on the nature of the transport rule that is chosen.) DeGraba 2000's point is simply that recitations of examples where calling parties generally receive more benefits than called parties provide no scientific or empirical basis for predicting that one of these two regimes will create better incentives than the other. For example, suppose we viewed a recitation of examples as

⁹See Ordover and Willig, section IV; Lee Selwyn and Scott Lundquist, "Efficient Intercarrier Compensation Mechanisms for the Emerging Competitive Environment," August 2001, paper submitted on behalf of Focal, Pac-West, RCN, and US LEC (Selwyn and Lundquist) at 44-47; and Joseph Farrell and Benjamin Hermalin, "Analysis of Central Office Bill and Keep," August 2001, paper submitted of behalf of Time Warner, (Farrell and Hermalin), section V.

sufficient evidence to conclude that calling parties generally receive 75 percent of the benefits of all calls. (Of course, even this would represent quite a heroic conclusion to draw based only on a list of examples.) Suppose also that we were able to determine that a specific bill-and-keep regime under consideration would have calling parties pay for 60 percent of the costs of making calls. It still might be the case that bill-and-keep produced superior results to CPNP since the share of cost borne by callers under bill-and-keep (60 percent) is closer to 75 percent than is the share of benefits borne by callers under CPNP (100 percent). It certainly does not seem obvious that CPNP would be the superior regime.

For similar reasons, bill-and-keep is at least as consistent as CPNP with principles of cost causation. CPNP arbitrarily allocates all cost-recovery to the calling party, even though the called party contributes to many of those costs by accepting the call, and even though its carrier makes cost-consequential decisions about network technology and design. The argument that the calling party should be required to pay for all of the cost of a call because it is the sole “causer” of the call is therefore fallacious. After the first second of a telephone call, the called party is as much a causer of the call as is the calling party, since either can terminate the call if it wishes. Ordover and Willig respond that, to the extent that CPNP incorrectly allocates the cost of calls, parties could make up for this deficiency by agreeing to take turns calling one another or perhaps even exchanging dollar payments. But this obviously isn’t always possible and, furthermore, is a clumsy and awkward mechanism at best.

Farrell and Hermalin make a different argument.⁹ Based on a more general model that generalizes some of the assumptions implicitly made by DeGraba 2000, they show that a more complex analysis may be required to determine the optimal intercarrier compensation rule and

⁹Farrell and Hermalin, section V.

that considerations similar to those that enter Ramsey pricing may need to be taken into account. They use their analysis to argue that DeGraba 2000's simple example, where splitting costs evenly between the parties creates perfectly optimal incentives, relies on special assumptions. It is true that their analysis identifies factors that DeGraba 2000 did not consider. However, far from nullifying the main point of DeGraba 2000, their analysis strengthens it. By identifying a range of new complex issues that need to be taken into account, Farrell and Hermalin make it even more difficult to develop any unambiguous sense of whether or not one of the regimes would create better incentives for short run use of the network than the other.

Furthermore, proponents of CPNP have failed to notice the critical fact that the model which they are using to support the claim that CPNP creates better incentives than bill-and-keep actually differs fundamentally from the way that CPNP works in practice, at least for the case of local calls. The model that proponents analyze is really a model of Calling *Party* Pays, not Calling *Party's Network* Pays. That is, the result that is shown is that when callers receive all of the benefit of calls, it would be optimal to charge *callers* a termination price equal to the incremental price of making a call. However, as has been discussed extensively above,³¹ for the case of local calls from the end user of an ILEC to the end user of a local carrier, in most jurisdictions callers are charged a completely flat rate by the ILEC regardless of whether the ILEC is asked to pay termination charges to the local carrier. Therefore, in the case of local calls, given current institutional arrangements, no incentives are created for the calling party to consider the incremental cost of a call when the local carrier is allowed to charge terminating rates to the ILEC. This is because the costs are not passed on to the calling party and therefore

³¹See Section 4.1.3.

simply disappear into a “black hole” where neither the caller nor the receiver pays any attention to them.

5.6 Bill-and-keep will not create incentives for CLECs to inefficiently specialize in originating traffic.

Farrell and Hermalin²⁸ suggest that a bill-and-keep regime might remove a CLEC’s incentive to specialize inefficiently in serving end users that primarily receive calls (such as ISPs) only at the cost of giving CLECs new incentives to specialize inefficiently in serving users that primarily originate calls. They acknowledge, however, that bill-and-keep would not create such a reverse problem if ILECs were allowed to charge prices to their own end users that appropriately reflect the costs of providing these end users with service in a bill-and-keep environment. Rather, their argument depends on the assumptions that (i) ILECs levy incremental charges on originators of local calls to cover both the incremental cost of originating and terminating calls; and (ii) they will continue to be required to do this after the adoption of bill-and-keep.”

These assumptions are both invalid. With respect to assumption (i), ILECs generally do not levy any incremental charges on end users for making or receiving purely local calls. That is, a single flat-rated fee is levied to cover these costs. Bill-and-keep does not produce any

²⁸Farrell and Hermalin at 6.

²⁹The argument is as follows: Suppose that the ILEC charged the calling party a per-minute fee to cover the incremental costs of both originating and terminating a local call and charged the called party no per-minute fee. Under a CPNP system, the CLEC would have no incentive to try to attract end users that primarily originate calls because it would have to pay termination fees to the ILEC. However, under a bill-and-keep system, it would not have to pay termination fees to the ILEC and therefore, according to the argument, would have an incentive to try to attract end users that primarily originate calls because it would not have to charge for termination as well.

systematic incentive for CLECs to specialize in originating traffic when ILECs use flat-rated charges.

With respect to assumption (ii), Farrell and Hermalin suggest that the fact that ILECs did not have sufficient pricing flexibility to counter CLEC efforts to attract ISPs under the CPNP regime suggests that they will not have sufficient pricing flexibility to counter the efforts of CLECs to attract end users that primarily originate traffic under a bill-and-keep regime. However, this comparison is clearly inapt. In the case of ISP-bound traffic, CLECs were able to make large profits even if they charged ISPs a price of zero. Therefore, in order to compete with CLECs, ILECs would have needed the flexibility to pay ISPs large “bribes” in order to induce them to agree to accept service. In the scenario described by Hermalin and Katz, where the adoption of bill-and-keep gives CLECs the incentive inefficiently to attract end users that only originate calls, all that the ILEC would have to do to counter these efforts would be to charge incremental origination prices no greater than incremental origination costs. That is, the ILEC would need only the flexibility to adjust prices closer to costs. In my opinion, the fact that ILECs did not have the flexibility to offer large “bribes” to selected end users does not shed much light on the question of whether or not they would have the flexibility to adjust prices closer to costs.

Selwyn and Lundquist make an argument that is similar to that of Farrell and Hermalin.⁴ They argue that current pricing practices are incompatible with bill-and-keep and would have to be changed radically if bill-and-keep were adopted. The same rebuttals apply to this argument as well. Namely, the assumption that ILECs generally charge calling parties a per minute fee to cover the incremental costs of both originating and terminating local calls is simply false.

⁴Selwyn and Lundquist at 39-43.

Furthermore, even if this assumption were true in some cases, the type of adjustments in prices that would be required under a bill-and-keep regime simply involve moving prices closer to costs and would not be difficult to implement.

5.7 To the extent that CPNP reduces unwanted phone calls, it will also reduce wanted phone calls.

Ordover and Willig³⁹ observe that (i) some phone calls that people receive, such as solicitations during the dinner hour, are unwanted; (ii) parties pay higher prices for making calls under a CPNP system than under a bill-and-keep system; and (iii) since the end users that originate unwanted calls might be expected to make fewer of these calls if they had to pay more to make them, fewer unwanted calls are made under a CPNP system than would be made under a bill-and-keep system.

However, there is no reason to believe that raising the price of making a telephone call will have a substantially larger effect on unwanted calls than wanted calls. That is, Ordover and Willig's reasoning about the relative effects of CPNP vs. bill-and-keep on the number of phone calls that are made applies equally well to all phone calls. Ordover and Willig are essentially therefore simply making the trivial observation that having a policy that makes phone calls more expensive will result in fewer phone calls being made. In such circumstances, there are fewer "bad" phone calls made, but there also are fewer "good" phone calls made. Ordover and Willig certainly provide no basis for drawing the conclusion that having a policy that makes phone calls more expensive for calling parties is good because the social benefits from the reduction in "bad" phone calls is greater than the social costs from the reduction in "good" phone calls. Taking Ordover and Willig's reasoning to its logical extreme demonstrates the fallacy in their argument.

³⁹Ordover and Willig at 13-18.

According to Ordover and Willig's reasoning, simply shutting the telephone system down entirely would be an even more desirable policy choice than adopting CPNP because this would entirely eliminate all unwanted phone calls. Of course, this reasoning ignores the "side effect" that all desirable phone calls would also be eliminated.

In any event, if the number of unwanted phone calls were a concern, it would be more appropriate for the Commission to take additional policy actions that specifically reduce unwanted phone calls, rather than policy actions that reduce all phone calls. For example, the Commission already restricts telemarketing calls in certain circumstances and permits called parties to ask to be placed on a "no call" list.*

6. CONCLUSION

If intercarrier compensation charges were determined under a bill-and-keep regime, then carriers would be responsible for recovering their origination and termination charges from their own end users instead of from other carriers. A key advantage of moving to such a system is that it removes the need to regulate termination prices charged by non-dominant carriers and thereby removes all of the possibilities for mistakes, distortions, and arbitrage opportunities that regulation can cause. An appropriately designed bill-and-keep system is therefore superior to a CPNP system. The bill-and-keep system proposed by Qwest improves upon the system proposed by DeGraba 2000 and would therefore be a particularly desirable system for the Commission to consider adopting.

* See Qwest Reply Comments at 18.

APPENDIX

Curriculum Vitae of William P. Rogerson

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B.A., Economics, University of Alberta, 1976

Ph.D., California Institute of Technology, 1980

Current Employment

Professor of Economics, Northwestern University

Honors, Awards and Research Grants

Graduated from the University of Alberta with distinction, 1976

Earl C. Anthony Fellowship, 1976-77

Canada Council Doctoral Fellowship, 1979-80

Shelby Cullom Davis Fellowship, 1979

NSF Grant SES-8320451, "Moral Hazard, Reputation, and Product Quality," March 1984-March 1985

NSF Grant SES-8504304, "Moral Hazard, Reputation, and Product Quality," April 1985-September 1987

NSF Grant IRI-8705477, "Contracting Under Asymmetric Information," July 1987-December 1989

Named to Household International Professorship in Economics, September 1987 - August 1989

Lynde & Harry Bradley Foundation Research Grant, "An Economic Analysis of Defense Procurement Regulations," June 1989 - December 1991.

NSF Grant SES-8906751, "Profit Regulation of Defense Contractors," August 1, 1989 - July 31, 1991.

Olin Fellow at The Centre for the Study of the Economy and the State, University of Chicago, October 1, 1989 - June 30, 1990.

Faculty Fellow, Center for Urban Affairs and Policy Research, Northwestern University, September 1991-present.

Smith Richardson Foundation, Inc. Research Grant, "Economic Incentives and the Defense Procurement Process," March 1, 1993 - May 31, 1995.

Elected a Fellow of the Econometric Society, 1999.

Research and Teaching Interests

Incentives and Information in Markets and Organizations, Regulation, Industrial Organization, Cost Accounting, Telecommunications, Defense Procurement, and Health Care.

Employment History

Research Assistant to Canadian Member of Parliament, Arnold Malone, June 1975 - September 1975

Teaching Assistant at University of Alberta, September 1975 - June 1976

Economist, Department of Industry, Trade and Commerce, Government of Alberta, June 1976 - September 1976

Research Assistant, Environmental Quality Laboratory, Caltech, June 1977 - September 1977

Economist, Long Range Planning and Structural Analysis Division, Department of Finance, Government of Canada, June 1978 - September 1978

Teaching Assistant to Professor Charles R. Plott, Division of Humanities and Social Sciences, Caltech, September 1979 - June 1980

Assistant Professor of Economics, Stanford University, September 1980 - August 1984

Associate Professor of Economics, Northwestern University, September 1984 - May 1990

Professor of Economics, Northwestern University, May 1990 - Present

Chair, Economics Department, Northwestern University, September 1996 - August 1998.

Chief Economist, Federal Communications Commission, June 1, 1998-May 31, 1999 (on leave from Northwestern for this year.)

Director, Northwestern Program in Mathematical Methods in the Social Sciences, September 2000- present.

Co-Director, Center for the Study of Industrial Organization, Northwestern University, September 2000-present.

Professional Activities

Editor of Defense and Peace Economics, January 1995 - December 1998.

Member of the editorial board of Defense and Peace Economics, September 1991 - December 1998.

Member of the editorial board of Review of Accounting Studies, September 1993 to present.

Member of the editorial board of Journal of Industrial Economics, October 1995- Sept. 1998.

Chief Economist of Federal Communications Commission, June 1, 1998 - May 31, 1999.

Member of the Illinois Economic Policy Council, September 1999 to present.

Consultant to: Federal Communications Commission, Federal Trade Commission, Institute for Defense Analysis, Logistics Management Institute, Office of the Secretary of Defense (Program Analysis and Evaluation), RAND Corporation, US Department of Justice

Refereed Publications

"Aggregate Expected Consumer Surplus As a Welfare With an Application to Price Stabilization," Econometrica, 49, No. 2, (March 1980), pp. 423-436.

"Agriculture in Development: A Game-Theoretic Analysis," with Robert Bates, Public Choice, 35, (1980), pp. 513-527.

"The Social Costs of Monopoly and Regulation: A Game-Theoretic Analysis," Bell Journal of Economics, 13, No. 2, (Autumn 1982), pp. 391-401.

"Reputation and Product Quality," Bell Journal of Economics, 14, No. 2, (Fall 1983), 508-515.

"Consumer Misperceptions, Market Power and Product Safety," with Mitchel Polinsky, Bell Journal of Economics, 14, No. 2, (Fall 1983), 581-589.

"A Note on the Incentive for a Monopolist to Increase Fixed Costs as a Barrier to Entry," Quarterly Journal of Economics, 396, May 1984, 399-402.

“Efficient Reliance and Damage Measures for Breach of Contract,” Rand Journal of Economics, Spring 1984, 39-53.

“Repeated Moral Hazard,” Econometrica, 53, January 1985, 69-76.

“The First-Order Approach to Principal Agent Problems,” Econometrica, 53, November 1985, 1357-1368.

“Robust Trading Mechanisms” with Kathleen Hagerty, Journal of Economic Theory, 42, June 1987, 94-107.

“The Dissipation of Profits by Brand Name Capital and Entry When Price Guarantees Quality,” Journal of Political Economy, 95, August 1987, 797-809.

“A Note on the Existence of Single Price Equilibrium Price Distributions,” Review of Economic Studies, 54, April 1987, 339-342.

“Price Advertising and the Deterioration of Product Quality,” Review of Economic Studies, 55, April 1988, 215-230.

“Profit Regulation of Defense Contractors and Prizes for Innovation,” Journal of Political Economy, 97, December 1989, 1284-1305.

“Quality vs. Quantity In Military Procurement,” American Economic Review, 80, March 1990, 83-92.

“Excess Capacity in Weapons Production: An Empirical Analysis,” Defence Economics, 2, 1991, 235-250.

“Optimal Depreciation Schedules for Regulated Utilities,” Journal of Regulatory Economics, 4, 1992, 5-33.

“Contractual Solutions to the Hold-Up Problem,” Review of Economic Studies, 59, October 1991, 777-794.

“Incentives, the Budgetary Process, and Inefficiently Low Production Rates in Defense Procurement,” Defence Economics, 3, 1991, 1-18.

“Overhead Allocation and Incentives for Cost Minimization in Defense Procurement,” The Accounting Review, 67, 1992, 671-690.

“Choice of Treatment Intensities by a Nonprofit Hospital **Under Prospective Pricing**,” Journal of Economics and Management Strategy, 3(1), Spring 1994, 7-52..

“Economic Incentives and the Defense Procurement Process,” Journal of Economic Perspectives, 8(4), Fall 1994, 65-90.

“Inter-Temporal Cost Allocation and Managerial Investment Incentives,” Journal of Political Economy, 105(4), 1997, 770-795.

“The Regulation of Broadband Telecommunications, The Principle of Regulating Narrowly Defined Input Bottlenecks, and Incentives for Investment and Innovation,” University of Chicago Legal Forum, 2000, 119-147.

Other Publications

“Electric Generation Plants” Appendix F. I in Implementing Tradable Emissions Permits for Sulfur Oxides Emissions in the South Coast Air Basin, Vol. II, by Glen R. Cass, Robert W. Hahn, Roger G. Noll, ARB Contract No. A8-141-31, June 30, 1982.

“A Comment on Political Institutions and Fiscal Policy: Evidence from the U.S. Historical Record,” Journal of Law Economics and Organization, 6, Special Issue, Conference on “The Organization of Political Institutions”, 1991, 155-166.

“Inefficiently Low Production Rates in Defense Procurement: An Economic Analysis,” Leitzel, Jim and Jean Tirole, eds., Incentives in Defense Procurement. Boulder: Westview Press, 1993.

Profit Regulation of Defense Contractors and Prizes for Innovation, RAND, R-3635-PA&E, 1991.

An Economic Framework for Analyzing DoD Profit Policy, RAND, R-3860-PA&E, 1991.

Overhead Allocation and Incentives for Cost Minimization in Defense Procurement, RAND, R-4013-PA&E, 1992.

“Review of ‘A Theory of Incentives in Procurement and Regulation,’” book review, Journal of Political Economy, 102, 1994, 397-402

On the Use of Transfer Prices in DoD: The Case of Repair and Maintenance of Depot Level Repairables by the Air Force, Logistics Management Institute Paper PA303RD2, January 1995, Logistics Management Institute, McLean, VA.

“Incentive Models of the Defense Procurement Process,” in Hartley, Kieth, and Todd Sandler, eds., The Handbook of Defense Economics, North Holland, 1995, 309-346..

“The Economics of University Indirect Cost Reimbursement in Federal Research Grants,” (with Roger Noll) in Roger Noll, ed., Challenges to the Research University. Washington: Brookings Institution, 1997.

“New Economic Perspectives on Telecommunications Regulation,” (review of Competition in Telecommunications, by Jean-Jacques Laffont and Jean Tirole), University of Chicago Law Review, 67, Fall 2000, 1489-1505.

Recent Papers

“Renegotiation of Fixed Price Contracts on the F-16 Program,” (with Tom Frazier), mimeo.

"The Use of Simple Menus of Contracts in Cost-Based Procurement and Regulation," mimeo.

CERTIFICATE OF SERVICE

I, Scott F. Llewellyn, do hereby certify that on this 5th day of November, 2001, I have caused true **and** correct copies of the foregoing Reply Comments of Qwest Communications International, Inc., to be served by hand delivery, indicated by **an** asterisk, or first-class mail upon the following parties:

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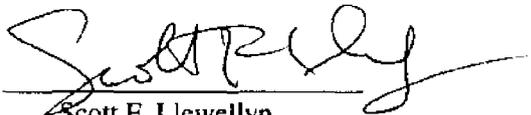
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