The issue of whether ILECs are entitled to higher prices is neither a new issue, nor one unique to this proceeding. ILECs have routinely argued before both this Commission and those of the states that they should be allowed to charge higher rates for their services. In response to ILEC concerns, the Commission reformed the depreciation process to account for embedded costs more accurately.[3] And, of course, the issue of service rates was central to the recent price cap performance review.[4] Notably, in that proceeding, the Commission decided to increase the X-factor in the options available to the ILECs, not reduce them. After arguing that the old X-factor options were too high to allow them to earn an adequate rate of return, many ILECs then adopted the option with the highest X factor, presumably to avoid incurring sharing obligations that would otherwise have been triggered by their high profit levels. All of this raises a big question about the importance of unrecovered embedded costs.

In order to assess whether ILECs are covering embedded costs, it is necessary to compare overall revenues and costs on an unseparated basis that includes both regulated and non-regulated services. If they seek to measure whether ILECs are truly covering their embedded costs, policy makers should not rely on ILECs claims based on inherently artificial cost allocations.

Policy makers must also think carefully about the rationale for ILEC claims that they are entitled to recover embedded costs. In essence, the ILECs are asking to be shielded from the effects of competition. There is a serious question about whether this is a proper role for regulation. Under a system of price caps, price changes no longer track cost changes one-for-one. If an ILEC can beat the target rate of cost reduction, it keeps the increased margin between prices and costs. In this way, the system mimics competitive forces and creates incentives for cost-reducing innovation and investment. By the same token, if a firm cannot beat the target, then it must bear the financial consequences. Again,

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3 Simplification of the Depreciation Prescription Process, Report and Order, 8 FCC Rcd 8025 (1993); Second Report and Order, 9 FCC Rcd 3206 (1994); Third Report and Order 10 FCC Rcd 8442 (1995).

4 See Price Cap Performance Review for Local Exchange Carriers, First Report and Order, 10 FCC Rcd 8961, 9055, stay denied, 10 FCC Rcd 11979 (1995).

this mimics the workings of a competitive market. Competitive markets do not guarantee rates of return. Neither should regulation.

The shortcomings of a policy that financially compensates incumbents for the introduction of competition can be further illustrated by considering one of the implications of adopting such a policy. If the Commission accepted the ILECs' theory of deserving compensation for facing competition, then logic would dictate that the Commission consider the same policy in the face of competitive entry into the provision of multichannel video services. If ILEC entry into video through direct broadcast satellite services, wireless cable, or the construction of an overbuild or an open video system pushes cable rates below the regulatory ceiling, is the Commission prepared to tax ILECs in order to compensate cable operators for the increased competition?

In summary, there are many problems associated with the recovery of embedded costs, not the least of which is the difficulty in verifying whether there are any embedded costs that have not already been recovered. In light of the large potential efficiency losses from the pricing distortions associated with the recovery of embedded costs, a high standard of proof should be placed on ILECs claiming entitlement to the recovery of embedded costs.

C. Claims that Embedded Costs Provide a more Reliable Basis for Pricing than do Forward-Looking Costs are Misguided

In his declaration, Dr. Robert Crandall implies that embedded costs, rather than forward-looking costs, should serve as the basis of pricing because the former can more reliably be estimated than the latter.[5] There are several problems with this claim. Most fundamentally, as discussed in the introduction to this section, economic costs are forward looking.[6] Therefore, whether or not they are easily projected, forward-looking costs are the only proper basis for efficient pricing. Second, while forward-looking costs cannot be projected perfectly, unregulated firms make such projections all the time. For

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5 Bell Atlantic Comments at "Declaration of Robert W. Crandall," pp. 7-9 ("Crandall").

6 Indeed, Dr. Crandall himself states that "Clearly, in a competitive market, rates would fall to market-determined forward-looking costs." Emphasis in original. Id. at 11.

example, Boeing and Intel repeatedly invest billions of dollars in new airframes and new microprocessors, respectively, based in part on uncertain projections of costs. Moreover, Dr. Crandall appears to be criticizing the Hatfield study for being *too conservative* in its approach (which would lead to *overly high* cost projections) by limiting its consideration to embedded network architecture as opposed to allowing for entirely new approaches.[7] Lastly, Dr. Crandall wrongly asserts that, if cheaper network architectures existed, then the networks would be constructed. This claim ignores entry barriers and the difficulties of being a second network, including the need to rely on ILECs for some elements.

Dr. Crandall makes another claim about costs that should be clarified. He argues that ILECs' cost of capital should rise in the face of competition.[8] In support of his claim, he argues that competition will increase the riskiness of ILECs as an investment and this will manifest itself in terms of increased *betas* for ILEC equity. Dr. Crandall is correct that beta is central to the determination of the cost of capital. But beta is a measure of *systematic* risk (*i.e.*, the sensitivity of the firm's returns to overall stock market conditions), not a measure of the variability or riskiness of firm performance in isolation.[9] It is far from clear that increased competition should lead to an increase in systematic risk. ILECs should not be allowed to raise prices based on speculation.

III. CLEAR FEDERAL GUIDELINES GOVERNING ARBITRATION OF ARRANGEMENTS FOR RECIPROCAL TRAFFIC EXCHANGE, INTERCONNECTION, AND UNBUNDLED NETWORK ELEMENTS WILL PROMOTE EFFICIENT PRIVATE NEGOTIATIONS

Because they are essential to the development of local exchange competition, there is a strong public interest in the outcome of private negotiations between ILECs and competitive local exchange carriers (CLECs) over arrangements for reciprocal traffic exchange, interconnection, and the provision

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7 Id. at 8.

8 Id. at 10.

9 For an elementary exposition, see R. Brealy and S. Myers, Principles of Corporate Finance, 4th ed., 143-148, New York" McGraw-Hill, Inc. (1991).

of unbundled network elements. In the absence of public policy to correct it, there will be a severe imbalance in bargaining power favoring ILECs over CLECs. Economic theory identifies several reasons to expect this imbalance to lead to inefficient arrangements that will harm the interests of business and residential telephone subscribers. Hence, there is a public interest in using federal guidelines to define a competitive baseline that creates more equal bargaining power and increases the likelihood that private negotiations will serve the public interest. Unfortunately, some ILEC representatives have mischaracterized the effects of federal guidelines.

A. ILEC Claims to the Contrary Notwithstanding, There is Unequal Bargaining Power in Favor of ILECs

In its comments, the United States Telephone Association (USTA) takes exception to the Commission's suggestion in the NPRM that ILECs have greatly superior bargaining power.[10] The USTA argues that many non-RBOC ILECs are small relative to the interexchange carriers and cable companies with whom they may be bargaining over transport and termination compensation arrangements. USTA's implicit analysis is flawed. Economic theory indicates that it is not the overall size of the parties that matters; it is their respective threat points (*i.e.*, the position in which each party would find itself in the event that they are unable to come to an agreement)

The local exchange market in a particular service area is the relevant market for the analysis of bargaining power and its effects on the public interest. In the absence of a transport and termination agreement, an ILEC would find itself with an ongoing monopoly (even if it is just a "little" monopoly), while the CLEC would be unable to enter the market as a full-fledged local exchange competitor. The fact that the CLEC's parent company may make a lot of money selling other services in foreign countries (or anywhere else) will do nothing to bring the benefits of competition to the ILEC's captive rate payers. A similar analysis applies to interconnection and unbundled network elements.

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[10] United States Telephone Association Comments at 6

The USTA also asserts that the carrot of entry into interLATA markets already provides RBOCs with sufficient incentives to negotiate interconnection arrangements that promote facilities-based competition.[11] However, while it is true that the RBOCs have incentives to claim they have reached interconnection agreements in order to get into long distance, they have no incentive to reach agreements that serve the public interest. Hence, there remains a need for federal guidelines. Indeed, this fact suggests that there is a public interest in scrutinizing even those arrangements that are voluntarily agreed to by both parties. As discussed in the next subsection, private agreements may not serve the full public interest in competition. Public scrutiny would be appropriate to ensure that these arrangements will truly allow competition rather than simply being a deal in which the RBOC compensates a particular CLEC for agreeing to something that allows the RBOC to meet the competitive checklist but does not support vigorous local exchange competition.

B. Absent Policy Intervention, the Imbalance in Bargaining Power Can be Expected to Lead to Efficiency Losses and Harm to the Public Interest

The outcome of the negotiations over compensation for reciprocal traffic exchange, interconnection, and unbundled network elements will affect the emergence of local exchange competition. While these developments will affect the ILECs and CLECs participating in the negotiations, they will also affect the welfare of end users, who stand to benefit greatly from the development of local exchange competition. Thus, there is a public interest in shaping the bargaining process so that the outcomes are more likely to facilitate competition and thus promote efficiency and consumer welfare.

The Coase theorem tells us that under certain conditions, private parties will negotiate agreements with one another that maximize the *joint* benefits derived from the agreement, regardless of their relative

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[11] Id. Of course, this argument fails to address the misincentives of the significant number of carriers who are not RBOCs. Even accepting USTA's argument, guidelines would be needed for these ILECs. And it is difficult to see any sound basis for then concluding that these guidelines should not also apply to the RBOCs.

bargaining positions.[12] Indeed, the key insight of the Coase theorem is that in many circumstances what matters most is that property rights be clearly assigned to someone, not the actual assignment. In light of the Coase theorem, why is there any need for government intervention in ILEC-CLEC negotiations?

The reason there is a public interest in these bargaining outcomes is that ILECs have incentives to force rival providers to accept inefficient arrangements that have the effect of reducing the total social benefits derived from telecommunications services. There are two broad reasons that ILECs' market power may lead to inefficient outcomes:

1. *Adverse effects on end users.* Consumers will benefit from local exchange competition. An ILEC and a CLEC bargaining over the terms of transport and termination, interconnection, or unbundled network elements will be concerned with their respective benefits derived from the agreements, not consumer benefits. By setting high charges for transport and termination, interconnection, or the provision of unbundled network elements, ILECs may be able to weaken local exchange competition by raising rivals' costs. Such overly high charges will harm both the CLEC and telephone subscribers. While the CLEC will bargain to protect its interests as best it can, consumers will be unrepresented at the bargaining table. Absent policy intervention, the parties might thus reach an agreement that does too little to facilitate local exchange competition.

2. *Limitations on feasible contracts.* The Coase theorem assumes that the private parties have a full range of contracts available to them. In practice, the set of feasible contracts may be limited. Bargaining between ILECs and CLECs takes place under conditions of asymmetric information. For example, an ILEC cannot be sure of a CLEC's exact willingness to pay for transport and termination. This fact implies that a ILEC cannot rely on lump-sum charges to transfer economic rents to itself from the CLEC in a relatively non-distorting way. Instead, the ILEC needs to rely on metering, whereby the ILEC attempts to use the quantity of services demanded by the CLEC as a signal of its overall willingness to pay. This strategy gives rise to inefficiently high per-minute and dedicated facility rates for transport and termination. Similar effects could arise from public policy limitations on price discrimination that prevent an ILEC from using individualized lump-sum charges to different carriers. While justified on other policy grounds, this non-discrimination policy may have the unintended effect of inducing ILECs to rely on traffic-sensitive charges to extract economic rents and thus suppress traffic.

Because of these obstacles to efficiency, there is a public interest in using federal guidelines to set a competitive baseline that reduces ILEC bargaining power. Absent such a baseline, an ILEC may use its bargaining power to obtain an outcome that harms third parties by limiting competition. In terms

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[12] R. Coase, *The Problem of Social Cost* 3 J. Law and Econ. 1-44 (1960).

of a Coasian analysis, a CLEC may be unwilling to "pay" the ILEC for a more pro-competitive arrangement because many of the benefits would accrue to consumers. However, with a competitive baseline, the ILEC will not find it profitable to "pay" all potential entrants not to enter. Moreover, a competitive baseline also limits the distortions identified in the second point above. Thus, the particular assignment of property rights does matter in this case.

C. A Specific Federal Standard in No Way Limits Private Parties' Ability to Reach Efficient Agreements that Make Use of their Expertise and Reflect any State-Specific Conditions

There are clear benefits of setting a federal standard. Many of the companies planning to enter local exchange markets are planning to do so on a multistate basis. The costs of entry will be increased if new local service providers are subject to inconsistent policies across different states. The likely result will be to reduce or slow the introduction of competition into local exchange markets. Moreover, a clear and specific standard will reduce the uncertainty about what will happen should private parties be unable to reach agreement. This should lead to less strategic "game playing" during negotiations.

ILECs have put forth two arguments against specific federal guidelines: (1) the claim that such guidelines would prevent private parties from taking advantage of their superior information to design efficient arrangements; and (2) the claim that specific federal guidelines would not appropriately reflect state or local conditions. Both of these arguments reflect a misunderstanding of the language of the 1996 Act and/or the fundamental economics of bargaining.

Consider transport and termination for example. The drafters of the Telecommunications Act of 1996 intended that compensation arrangements will be primarily determined through private negotiations between the carriers exchanging traffic. *In the event of disagreement* between two carriers, however, the relevant state commission will be called upon to arbitrate. The important point to recognize is that, if they can reach agreement between one another, the private parties are free to adopt any arrangement of their choosing. Thus, federal guidelines in no way limit private parties' ability to implement anything

to which they can agree, and they are free to use any information -- including information about local market conditions -- that they possess.

IV. ILECs HAVE OVERSTATED THE POTENTIAL EFFICIENCY LOSSES OF BILL AND KEEP ARRANGEMENTS FOR TRANSPORT AND TERMINATION

A. Transport and Termination Benefits Users on both the Originating and Terminating Networks

Some parties have made much of potential imbalances in traffic flows between ILEC and CLEC networks. The importance of traffic direction as a proper basis for pricing has been overstated. The key point to recognize is that both the called party and the calling party typically derive economic benefits from communicating. That is one reason why we see services like 800 and paging that entail payments by the called party. In assessing the effects of compensation for mutual termination of traffic, policy makers should recognize the network effects, whereby the value of a communications network increases with the number of subscribers who can be reached through it, either directly or through the use of traffic exchange with other networks. Because ILEC customers benefit from receiving calls from CLEC customers, and vice versa, traffic direction is a poor basis for measuring the flow of economic benefits.

The computer industry provides an example of these forces at work. Word processing programs typically include conversion software that allows one word processor to handle files generated on another program. For example, Word can read WordPerfect files, and it can create files that WordPerfect can read. A software company doe not typically receive compensation from rival software companies for including this conversion feature. Rather, each firm has economic incentives to write the relevant code -- which facilitates both inbound and outbound "traffic" flows -- because it generates economic value for potential buyers of that software. Similarly, local exchange networks are more valuable when they transport and terminate one another's traffic.

B. There is Little Danger that End-Users will Face Inefficiently Low Service Prices

If traffic is balanced and there is nothing that carriers can do to affect the relative levels of inbound and outbound flows, then the price of transport and termination under a symmetric compensation

scheme is irrelevant: any payments for outbound traffic will be exactly offset by payments received for inbound traffic. However, if carriers can affect relative flows, then one must consider what actions carriers will take to do so and the resulting effects on end-user consumption levels. And if traffic flows are imbalanced, then one must examine the effects on carrier investment incentives.[13]

Consider the consumption efficiency effects. For the near future, end-user services will be provided under conditions of imperfect competition. Consequently, absent regulation to the contrary, service providers generally will charge a markup over their costs. Economists analyzing this situation have noted that to get efficient retail prices (equal to marginal costs) it may be optimal to price inputs such as transport and termination below marginal cost.[14] Even if one is not prepared to conclude that policy should explicitly aim to subsidize transport and termination, this fact does imply that there is relatively little threat to consumption efficiency from pricing such facilities and services "too low."

C. Investment Incentives are More Likely to be Distorted by Overly High Transport and Termination Rates than by Unduly Low Rates

Several ILEC commenters claim that bill and keep will distort investment incentives.[15] The concern that bill and keep will give CLECs excessive incentives to rely on ILEC facilities is misplaced. The reason for ILEC-CLEC traffic exchange agreements is that for the foreseeable future, CLECs will be dependent on ILEC local loop and local switching facilities to reach most end users with calls originating on CLEC networks. It will not be practical to invest in these facilities simply to complete calls originating on the CLEC network.

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13 One potential source of traffic imbalance is that multiline users may make outgoing calls on CLEC lines, while using ILEC lines for incoming calls in order to preserve their telephone numbers in the absence of portability. To the extent that bill and keep provides ILEC incentives to proceed with implementing number portability, it should be considered a benefit.

14 See for example, J.J. Laffont and J. Tirole, "Creating Competition Through Interconnection: Theory and Practice," manuscript (December 1994) Section 9.1, and J. Arnback, B. Mitchell, W. Neu, K.H. Neumann, and I. Vogelsang, "Network Interconnection and the Domain of ONP" Final Report (November 1994), study conducted for DG XIII of the European Commission, Section 3.5.

15 Crandall at 7; Bell Atlantic Comments, "Affidavit of Jerry A. Hausman," pp. 9-10.

Moreover, as noted above, the Coase theorem indicates that private parties generally will negotiate agreements with one another that maximize the *joint* economic benefits that *the parties to the negotiation* derive from their agreement. Once the parties get to the point that they know they will be exchanging traffic (*i.e.*, Commission guidelines, such as bill and keep, prevent ILECs from deterring entry by efficient CLECs), an ILEC and CLEC engaged in negotiations have incentives to agree to physical configurations of facilities that minimize the costs that they jointly incur to handle the traffic.

By setting a baseline in which each co-carrier is responsible for what happens to traffic within its network, bill and keep for transport and termination would give each co-carrier incentives to minimize the costs of carrying that traffic. This cost minimization may entail contracting with the other carrier to provide certain network elements. Similarly, the private parties have incentives to choose arrangements that minimize the costs that they jointly bear. A policy requiring that dedicated facilities connecting two networks be subject to 50-50 cost sharing gives each party incentives to reduce the costs of interconnecting the two networks when choosing its interconnection point. In contrast, absent a policy that limits ILEC bargaining power, inefficiently high transport and termination rates may reduce the profitability of investment in competitive local exchange facilities, and thus suppress CLEC incentives to enter and expand.

D. The Threat of Arbitrage is More Efficiently Dealt with Through Enforcement Policies Rather than Distorting Competition and Market Outcomes

ILECs have raised the threat of arbitrage as a reason not to adopt bill and keep. While Rohlfs et al are technically correct that bill and keep gives rise to arbitrage incentives that are at least as large as those under positive pricing,[16] this misses the point. If there were no restrictions on arbitrage, then we might well see it. But the Commission and state commissions can prohibit those forms of arbitrage that are found to be against the public interest. Through the use of random audits and other enforcement

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[16] "Interconnection and Economic Efficiency" submitted by Jeffrey H. Rohlfs, John Haring, Calvin S. Monson, and Harry M. Shooshan III on behalf of BellSouth at 8.

policies, policy makers can implement relatively low-cost strategies to minimize arbitrage. This is a more sensible approach than abandoning a simple and low-cost interim pricing policy on the basis of unsubstantiated claims of what *might* happen. In this regard, it is worth noting that arbitrage incentives exist today, where local service, LEC-CMRS interconnection, and interexchange access charges vary widely. ILEC claims of the threat of arbitrage would be more credible if they could point to current problems, rather than making purely speculative claims.

V. NEW UNBUNDLED ELEMENTS SHOULD NOT BE PRICED IN A WAY THAT DISCOURAGES THEIR USE

ILECs assert that the provision of some unbundled elements will trigger the need to incur large set-up costs. If this is correct, it raises the issue of how to price these elements. Bell Atlantic proposed that the initial buyer be charged the full set-up costs.[17] (Presumably, under this scheme, later buyers would pay only the incremental costs of serving them.) The problem with this pricing scheme is that no CLEC will want to be the first buyer. Instead, each will wait for another CLEC to order the element first. The effect could be to discourage all CLECs from ordering the unbundled network element, even if it would otherwise be efficient and procompetitive for CLECs to use that element.[18]

The pricing scheme put forth by Bell Atlantic maximizes the problems associated with recovering set-up costs. It does this by maximizing the difference between what the first and later buyers pay, thus maximizing the disincentive to be the first CLEC to order the unbundled element. What is needed instead is a mechanism through which CLECs can share the costs of ordering an unbundled network element.

Commenters in this proceeding generally have pointed to the use of total service long-run incremental cost (TSLRIC) as a means of spreading set-up costs across units of a service.[19] Basing price

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[17] Bell Atlantic Comments at 18.

[18] A similar analysis applies to the pricing of arrangements for new points of interconnection.

[19] See, e.g., Comments of AT&T at 49; Ameritech Comments at 63-64.

on total service long-run *average* incremental cost would share the set-up costs among purchasers of an unbundled network element.[20] Calculation of total service long-run average cost requires calculation of the number of units of the service sold. This could be done by *projecting* demand for the unbundled network element. There could then be a true-up process that would take place at appropriate time intervals.

The Bell Atlantic proposal departs from pricing services based on TSLRIC. Those CLECs other than the first one would pay something akin to marginal cost. If the Commission were to adopt this approach, then it should price all existing network elements at marginal cost, on the grounds that the ILEC is the first purchaser and has triggered all of the set-up costs.

VI. CONCLUSION

Properly applied economic principles and analysis can guide decision makers in setting policies that promote the realization of the greatest possible social benefits from the public switched telephone network. In contrast, improperly applied or misstated "principles" confuse rather than clarify the issues. The result can be harm to competition and consumers

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[20] This is in addition to any loading of forward-looking common costs.