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Before The
Federal Communications Commission
Washington, D.C. 20554

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In The Matter of Price Cap Performance Review for Local Exchange Carriers Fourth Further Notice of Proposed Rulemaking	)	CC Docket 94-1

REPLY COMMENTS OF BELL ATLANTIC

Edward D. Young, III
Of Counsel

Michael E. Glover
Edward Shakin
1320 North Court House Road
Arlington, VA 22201
(202) 974-2944

Attorneys for Bell Atlantic
Telephone Companies

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SUMMARY

The comments in this proceeding present the Commission with a stark choice. The Commission can move forward by reforming its price cap regulations for local exchange carriers to more closely duplicate the incentives of a competitive market, or it can move backward by retreating to discredited rate of return regulatory principles from a bygone era.

As shown in the opening comments of Bell Atlantic and others, the only rational choice is the one made by an ever growing number of forward-looking states. The Commission should adopt a pure price cap plan that eliminates the sharing and lower formula adjustment mechanisms, along with other harmful vestiges of rate of return regulation. This result is strongly supported on the record here by a number of leading economists, including the country's foremost regulatory economist, Dr. Alfred E. Kahn.

In addition, to eliminate the significant disincentive to new investment created by the inflated productivity offsets in the existing plan, the Commission should adopt a corrected, lower offset that is in line with the productivity gains actually experienced by the LECs. To provide the Commission with an economically sound basis for such an offset, the LEC industry submitted a simplified total factor productivity study by Dr. Laurits Christensen, the country's leading productivity expert, that sets the offset based on a rolling average of the productivity gains actually experienced by the LECs, and does so based entirely on publicly available and verifiable data. By supporting this approach, the LECs have effectively proposed to reduce their own prices year-over- year into the future, based upon an objective measure of the industry's actual productivity gains.

In contrast, opponents of reform, led principally by AT&T, urge what amounts to a full scale retreat to rate of return regulation, complete with its harmful incentives and burdensome regulatory baggage. Their claims, however, are transparent attempts to drive LEC prices down solely for the sake of driving them down, thereby increasing their own profits, and come in the wake of two major price increases by AT&T in the short time since the Commission's last order resulted in massive access charge reductions.

Of course, recognizing the utter lack of any basis for such an argument, AT&T and its supporters do not openly argue for a straightforward retreat to rate of return. Instead, they try to achieve the same result through misdirection and disguise. In a deceptively clever ploy, AT&T proposes to establish a permanent productivity offset for the LEC price cap plan based on a so-called "new" method for calculating LEC productivity. In reality, however, this "new" approach is fundamentally no different than AT&T 's last discredited proposal, and is carefully designed to achieve precisely the same result -- namely, to set LEC prices to produce a specific, regulatorily prescribed return based on inflated measures of regulatory accounting earnings. No matter how cleverly disguised, this is rate of return -- plain and simple -- and must be rejected.

The intervenors' other arguments fare no better. For example, they claim that the prices paid by the LECs for inputs grew more slowly since divestiture than for the economy as a whole. The amount of this "input price differential," they say, should be added to the productivity offset for the LECs. In doing so, however, the intervenors ignore the fact that, although random price fluctuations may produce a differential in a given year or short period of years, over any appreciable period of time the differential is equal to zero. Moreover, by basing their argument on only a portion of the post-divestiture period, the intervenors ignore the fact that over the most recent five year period for which data is available, the input prices for the LECs actually grew faster than the economy at large. As a result, contrary to the claims of the intervenors, including an input price differential based on the most recent data would require a decrease in the productivity offset for the LECs, not an increase.

In addition, recognizing that any economically meaningful measure of the LEC's productivity will not produce the result they desire, the intervenors argue that the Commission should adopt a productivity offset based solely on the LECs' interstate services. But as the intervenors are well aware, there simply is no way to divide the LECs' joint use networks down the middle and somehow magically divine that one side is more productive than the other. Any attempt to do so necessarily requires an arbitrary allocation of inputs between the LECs' inter- and intrastate services, and, as explained in the attached affidavit of Dr. Melvyn Fuss, produces results that are both arbitrary and meaningless.

In the end, AT&T and the other intervenors are left to rely in their quest for an inflated offset, upon ad hominem attacks that are substantively baseless. For example, the intervenors complain that the LECs are "overearning" and that their interstate returns are "excessive." But these claims are both irrelevant and wrong. They are irrelevant because the entire purpose for price caps is to provide LECs with an incentive to improve efficiency by allowing them to achieve higher earnings than under rate of return. They are wrong because, as Dr. James Vander Weide explains in his accompanying affidavit, an economically correct measure of the LECs' earnings shows that they have actually fallen short of the Commission's rate of return benchmark. during the price cap period.

Likewise, the intervenors point to the selection by a number of LECs of the no sharing option with its higher offset. But this is not, as they claim, evidence that the existing offsets are too low. On the contrary, by artificially inflating the LECs' regulatory accounting earnings, depressing the LECs' recognizable costs and lowering sharing thresholds, the Commission's existing rules force companies toward the highest offset -- despite the fact that it is set at a level higher than reasonably can be sustained. As a result, like the intervenors other arguments, this claim does not stand the light of day.

As if all this is not enough to strain credulity, there is more. In a move that would make even a die-hard rate of return advocate blush, AT&T and its supporters go so far as to claim that the price cap plan for the LECs should retain a sharing requirement, but that the lower formula adjustment should be eliminated. The result would be to arbitrarily limit any gains the LECs might be able to achieve through increased efficiency, and significantly blunt their incentives to improve productivity in the first place. Yet, at the same time that they would limit the upside potential for the LECs, the intervenors also would subject them to unlimited downside risk. A more one-sided proposal is impossible to conceive.

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REPLY COMMENTS OF BELL ATLANTIC[1]

Supported by some of the country's foremost economists, Bell Atlantic and others demonstrated in their opening comments here that the price cap regulations for local exchange carriers must be reformed to more closely duplicate the incentives of a competitive market. To accomplish this result, the Commission should a) eliminate sharing and other archaic holdovers from rate of return regulation in favor of a pure price plan, and b) adopt a corrected, lower productivity offset based on a rolling average of the total factor productivity gains actually experienced by the LECs. As an ever growing number of forward-looking states have recognized, the result will be to provide the LECs with rational incentives to increase efficiency and make economically sound investments, while also producing year-over year price reductions.

[1] The Bell Atlantic telephone companies include Bell Atlantic-Delaware, Inc., Bell Atlantic-Washington, D.C., Inc., Bell Atlantic-Maryland, Inc., Bell Atlantic-Pennsylvania, Inc., Bell Atlantic-New Jersey, Inc., Bell Atlantic-Virginia, Inc., and Bell Atlantic-West Virginia, Inc.

In contrast, opponents of reform, led principally by AT&T, urge what amounts to a full-scale retreat to rate of return, complete with its harmful incentives and burdensome regulatory baggage. Their claims, however, are transparent attempts to drive LEC prices down solely for the sake of driving them down, and come in the wake of two major price increases by AT&T in the short time since the Commission's last order resulted in massive access charge reductions. At every turn, the arguments made by AT&T and its supporters are simply wrong, and must be rejected.

1. The Commission Should Adopt A Corrected Offset Based On a Rolling Average of Total Factor Productivity Gains, Not Retreat to Rate of Return

In response to the concerns expressed in the Commission's further notice in this proceeding, the LEC industry submitted a simplified total factor productivity study that was prepared by Dr. Laurits Christensen, the country's leading productivity expert.[2] This simplified approach, which is the only true productivity study filed here, both provides an economically sound basis on which to adopt a corrected productivity offset, and meets all the criteria established by the Commission in its further notice.

In particular, the simplified study is based entirely on publicly available and verifiable data. Because it calculates an offset based upon a rolling average of the productivity gains actually experienced by the LECs, the simplified approach also will capture any future trends in the LECs' productivity gains and eliminates any need for frequent and increasingly burdensome periodic reviews. And as Dr. Christensen

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[2] Christensen, et al., Total Factor Productivity Methods for Local Exchange Carrier Price Cap Plans, CC Dkt 94-1 (Dec. 1995) (submitted on behalf of USTA) ("Christensen Study").

explains in his reply submission here, the intervenors' criticisms of his earlier study have either already been addressed in the simplified study, or are simply misplaced.[3]

In contrast, the only other "productivity study" in the record is not a true productivity study at all, but a cleverly disguised blueprint for a full scale retreat to rate of return.

Specifically, AT&T proposes to select an offset based on a "new" method for calculating productivity, a method it calls a "performance based model." As Dr. Vander Weide explains in his accompanying affidavit, however, this supposedly new approach is "fundamentally no different" than AT&T's discredited previous proposal.[4] By using the LECs' achieved regulatory accounting rate of return as its estimate of the cost of capital, AT&T's current proposal is carefully tailored to "reduce the LECs' access rates to the point that their regulatory accounting rates of return equal their prescribed economic cost of capital."[5] Regardless of the clever name or change in packaging, this is rate of return regulation -- nothing more and nothing less. The Commission should recognize AT&T's latest sleight of hand for what it is, and reject it.

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3 Christensen, et al., Total Factor Productivity Methods for Local Exchange Carrier Price cap Plans: Reply Comments, CC Dkt 94-1 at 26-28 (Mar. 1, 1996) (submitted with the Reply Comments of USTA) ("Christensen Reply").

4 Affidavit of James H. Vander Weide, CC Dkt 94-1 at 5 (Mar. 1996) ("Vander Weide Aff.") (copy attached).

5 Vander Weide Aff. at 5-6.

2. The Commission Should Reject Use of an Input Price Differential <u>or Other Arbitrary Adjustments to Total Factor Productivity Results</u>

The intervenors continue to press their argument here that an input price differential should be added to the productivity offset for the LECs. This differential is needed, they claim, to reflect the fact that input prices for the LECs have grown more slowly since divestiture than for the economy as a whole. They are wrong.

AT&T nonetheless argues that a differential does indeed exist, based on a statistical test that shows only that LEC input prices differ from the economy as a whole when examined on a year-by-year basis. But this is irrelevant. It is certainly true that the substantial random variations in input prices may produce a difference in any given year or short period of years, some of which are positive and some negative, but this proves nothing. The only meaningful question is whether there is a statistically significant differential when measured over some appreciable period of time. As Dr. Christensen and others have demonstrated, there simply is not, and this is equally true of the post-divestiture period between 1984 -1994.[6]

Likewise, the intervenors also are wrong to the extent they continue to argue that a long term differential in input prices developed at the time of divestiture. By basing their arguments on data from only a selected portion of the post-divestiture period, the intervenors studiously ignore an important lessen of history: short term fluctuations in one direction are likely to be followed by short term fluctuations in the other.

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6 Christensen Reply at 26-28.

That is precisely what happened here, as Drs. Fuss and Christensen explain.[7] To the extent a short term fluctuation developed following divestiture, that fluctuation reversed itself by 1990. Indeed, over the most recent five year period for which data is available (from the end of 1989 to the end of 1994), the input prices for the LECs actually grew faster than for the economy as a whole.[8] Because an input price differential would require an adjustment to the offset in the opposite direction of the value of the differential, including such a differential based on this most recent data would require a decrease in the productivity offset for the LECs, not an increase as the intervenors claim.

Even the intervenors make no attempt to justify ignoring this most recent data in favor of the prior period results they prefer. Nor could they. The Commission itself has stressed time and again that the most reliable evidence for use in setting a productivity offset is actual LEC performance under price caps.[9] Here, that most reliable evidence directly contradicts the petitioners' claims.

Nor is there any justification for larding an arbitrary "consumer productivity dividend," or "CPD," onto the total factor productivity results for the LECs. The intervenors are simply wrong that retaining the CPD is necessary to capture any

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7 Reply Declaration of Melvyn A. Fuss, CC Dkt 94-1 at 1-2 (Feb. 1996) ("Fuss Reply") (copy attached); Christensen Reply at 23, 27; Christensen Study, App. 3 at 50; Id., App. 3 at 49 & Charts 5,6; Declaration of Melvyn A. Fuss, CC Dkt 94-1 at 3 (Dec. 1995) ("Fuss Decl.").

8 Fuss Reply at 1-2; Christensen Reply at 26-28.

9 See, e.g., Price Cap Performance Review for Local Exchange Carriers, 10 FCC Rcd 8961, 9047 (1995).

productivity gains achieved under price caps. The five year average proposed by Dr. Christensen already focuses on years when the LECs were subject to price caps, and any impact already is captured. This same rolling average also will capture any future productivity trends that occur. The claim that retaining a stretch factor will encourage the LECs to achieve new heights of productivity in the future ignores economic reality. To the extent they can already increase their earnings by becoming more productive, the LECs already have every incentive to outperform the productivity hurdle. After all, money is money. Indeed, to the extent the LECs are unable to invest in new productivity enhancing technologies, inflating the offset by adding an arbitrary CPD can actually reduce future productivity gains.

3. The Commission Should Reject Use of a Separate Interstate Productivity Offset and Adopt a Single Offset Based on Total Company Results

In a further effort to artificially inflate the result, the intervenors also urge the Commission to adopt a separate, interstate-only productivity factor. The intervenors base their claim solely on the fact that interstate output is growing faster than intrastate, and argue that this translates into higher productivity for interstate services. Their argument, however, addresses only one piece of the equation.

Because productivity measures the level of output produced by a given level of inputs, it can only be calculated where both the relevant outputs and inputs are known. As Drs. Christensen and Fuss each explain,[10] however, in the case of the LECs' joint use networks -- which deliver a myriad variety of interstate, intrastate,

[10] Christensen Reply at 4-7; Fuss Reply at 2-5.

regulated and unregulated services -- there simply is no economically meaningful way to allocate the joint and common costs of the network among various classes of service. As a result, there is no legitimate way to measure the inputs for interstate or any other given class of services, and therefore no way to separately measure productivity for these services. Any attempt to do so must rely upon inherently arbitrary cost allocation rules, and will produce results that are both arbitrary and economically meaningless.

Remarkably, the intervenors not only ignore this simple economic fact, but actually go so far as to claim that "no specific allocation of costs is required." [11] As Dr. Fuss explains, however, this fanciful assertion is "the productivity analyst's version of the free lunch."[12] If true, it would mean that productivity could be calculated without knowing anything about the inputs used in production. Ultimately, the intervenors themselves are only able to manufacture an interstate productivity factor by blithely assuming that "inputs grow at the same rate for all classes of services."[13] But this assumption itself is nothing but a simplistic form of cost allocation, and is no less arbitrary than any other.[14] Moreover, Dr. Christensen demonstrates in his reply that this particular form of cost allocation produces especially bizarre results.[15]

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11 Comments of AT&T at App. A, Statement of Dr. John R. Norsworthy, CC Dkt 94-1 at 27 (Dec 1995) ("Norsworthy Statement").

12 Fuss Reply at 4; <u>accord</u> Christensen Reply at 5-7.

13 Comments of AT&T at App. A, Norsworthy Statement at 27

14 Fuss Reply at 4-5; Christensen Reply at 5-7.

15 Christensen Reply at 5-7.

Relying on Smith v. Illinois Bell Telephone Co., 282 U.S. 133 (1930), the intervenors also claim that the Commission is legally required to separately measure productivity for interstate services. But Smith merely stands for the unremarkable proposition that some portion of the costs of the local telephone network are attributable to interstate services, and "may be recovered only under the authority of a body with interstate regulatory powers." NARUC v. FCC, 737 F.2d 1095, 1112 (D.C. Cir. 1984). It does not "address the manner in which the federal agency [is] to perform its task," and does not dictate the method for use by the Commission to set prices. Id. As a result, Smith simply has no bearing on the choice of a productivity offset for use in setting interstate prices.

4. The Commission Should Reject Ad Hominem Arguments Based on LEC Earnings or Prior Choice of Offsets

In the end, AT&T and the other intervenors are forced to abandon substance in their quest for an inflated offset, and focus instead on atmospherics.

First, the intervenors claim that the LECs are "overearning" or that their interstate returns are "excessive." But they ignore the fact that the whole point of price cap regulation is to give the LECs an incentive to improve efficiency by allowing them to earn a higher return than under rate of return. This incentive is created by severing the link between costs and prices that is created by regulating returns, and by directly regulating price instead. Under price caps, costs and earnings are irrelevant. As a result, the Commission rejected the very argument that AT&T and its supporters make here in the context of AT&T's own price cap plan, holding that "the productivity factor should not be changed either to recapture all profits, or to increase relatively low profits retroactively."[16]

In addition to being irrelevant, the intervenors' argument is also wrong. As Dr. Vander Weide explains in his accompanying affidavit, the intervenors here rely upon measures of regulatory accounting earnings.[17] But these earnings measures are inherently arbitrary and economically meaningless. This is true both because they rely on historical book costs and accrued revenues and expenses -- which do not measure the return investors actually receive in their investment -- and because they rely on arbitrary regulatory accounting conventions that bias results.

In contrast, a measure of the LECs' true economic returns shows that they have actually "underearned" over the price cap period. Economic returns are based on the change in market value of an investment plus cash flow, and do measure actual returns to investors. For this reason, "the economic rate of return is always a better measure of actual economic performance,"[18] and are relied upon by financial markets and investors. In fact, AT&T elsewhere has made this very point, explaining that "financial markets value a company's stock in terms of the discounted cash flow of the streams of cash payments to and from the firm," and that the markets will "'look through' accounting changes that do not affect cash flow."[19]

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16 Price Cap Performance Review for AT&T, 8 FCC Rcd 6968, 6970 (1994).

17 Vander Weide Aff. at 8-13.

18 Id. at 13.

19 Direct Case of AT&T Corp., CC Dkt 94-139 at 22-23 (Jan. 11, 1996).

Moreover, while economic returns are always the better measure of earnings, this is especially true here. The Commission's own rate of return benchmark of 11.25 percent is itself based on cash flows and market values, and therefore is a measure of economic returns. The only meaningful way to determine whether this economic benchmark has been exceeded is to examine the LECs' economic returns. As Dr. Vander Weide demonstrates, the economic rate of return for the LECs during the price cap period has averaged under 9 percent, well below the Commission's benchmark.[20] As a result, under a rate of return scheme, the LECs would be constitutionally entitled to raise their rates.

Second, the intervenors point to the choice by a number of companies of the no sharing option with its higher offset as evidence that the current offsets are too low. In reality, however, this is evidence of nothing but the fact that the existing plan was structured to drive LECs to choose the highest offset. For example, through measures such as the new add back rule (which forces the LECs to impute phantom earnings to themselves that they never actually receive), the Commission artificially inflated its calculation of the LECs' regulatory accounting earnings. By limiting LECs to arbitrary regulatory depreciation levels, the Commission depressed the LECs' recognizable costs. And by lowering the sharing thresholds for the lowest productivity offsets, the Commission reduced the amount of earnings the LECs could actually retain under these options. It is hardly surprising that the combination of these factors drove a number of companies to choose the no sharing option with the highest offset, just as it

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[20] Vander Weide Aff. at 13-14.

presumably was intended to do. But this choice says nothing about the LECs' true historical productivity growth, nor their expected future productivity growth. As a result, it is irrelevant in setting a new offset.

5. The Commission Should Eliminate the Sharing and Lower Bound Adjustment Mechanisms in Favor of a Pure Price Cap Plan

As demonstrated in this proceeding by some of this country's foremost economists, including Dr. Alfred E. Kahn, eliminating sharing and the lower bound adjustment in favor of a pure price cap plan will provide incentives to improve efficiency and promote economically efficient investment, while at the same time ensuring that the risk of this investment is borne entirely by shareholders.[21] This result is both economically correct, and consistent with the mandate in section 706 of the Telecommunications Act of 1996 Act that the Commission adopt price cap and other regulations that "remove barriers to infrastructure investment."

In contrast, AT&T and its supporters make the extraordinary claim that the Commission should retain sharing, but eliminate the lower bound adjustment mechanism. By arbitrarily limiting any gains the LECs could achieve through increased efficiency or as a result of new investments, this approach would severely undermine their incentives to improve productivity or to make additional investments. At the same time, by removing the protection provided by the lower formula adjustment, the intervenors would subject the LECs and their shareholders to unlimited downside risk

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21 See, e.g., Comments of Bell Atlantic at 3-4, and attached Affidavit of Alfred E. Kahn at 9-12 (Dec. 1995).

for any investments that do not pan out -- further undermining their incentive to invest in the first place.

The only rationale the intervenors can muster for this proposal is to claim that sharing must be retained, first, to ensure that LEC earnings remain within some predetermined range, and, second, to drive LECs to choose price cap options with productivity offsets in excess of what can be objectively justified based on experience. Neither claim is valid.

As for the first claim, the intervenors again ignore the fact that earnings are irrelevant here. Price caps are designed to directly regulate price, rather than limiting earnings to a predetermined level above some arbitrary measure of cost. Moreover, to the extent the intervenors really mean to suggest that a mechanism is need to ensure that any future productivity gains are captured in the price cap formula, this function is served by the rolling average measure of productivity proposed by Dr. Christensen.

As for the second claim, the intervenors presuppose that the Commission will create multiple price cap options with varying productivity offsets. It should not. If the Commission adopts a single offset, the LECs effectively will be forced to compete with one another to become more efficient if they are to attract investors. If it adopts multiple offsets, on the other hand, the Commission will merely create artificial advantages and disadvantages for individual companies that are unrelated to true productivity.

Moreover, any attempt to force LECs to choose an offset above the level that is set based on objective measures of historical productivity gains would be inherently arbitrary -- both in terms of the decision to adopt such as an offset and in terms of the precise level of the offset. There simply is no justification for setting any productivity offset above the level that is objectively reasonable, except perhaps to force prices down solely for the sake of forcing them down. This is something the Commission may not do.

CONCLUSION

The Commission should reform its price cap rules in the respects identified above, and in Bell Atlantic's initial comments in this proceeding.

Respectfully submitted,

Michael E. Glover
Edward Shakin
1320 North Court House Road
Arlington, VA 22201
(202) 974-2944

Edward D. Young, III
Of Counsel

March 1, 1996

CERTIFICATE OF SERVICE

I hereby certify that on this 1st day of March, 1996 a copy of the foregoing "Reply Comments of Bell Atlantic" was served on the parties on the attached list.

Tracey DeVaux

Tracey DeVaux

* Via hand delivery.

Tariff Division*
Common Carrier Bureau
1919 M Street, NW
Room 518
Washington, DC 20554

(2 copies)

Industry Analysis Division*
Common Carrier Bureau
1919 M Street, NW
Room 534
Washington, DC 20054

(Disk version)

ITS, Inc.*
1919 M Street, NW
Room 246
Washington, DC 20554

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the matter of	)	
	)	
Price Caps Performance Review	)	**CC Docket 94-1**
for Local Exchange Carriers	)	

DECLARATION OF MELVYN A. FUSS

I, Melvyn A. Fuss, declare the following:

1. Introduction

1. In my initial declaration in this proceeding, I demonstrated why use of a fixed input price differential would be inappropriate for price caps regulation of local exchange carriers. In this declaration, I reaffirm that conclusion after reviewing the comments that argue otherwise. Indeed, the most recent data included in Dr. Christensen's Reply supports my conclusion that the input price differential observed post divestiture was a temporary phenomenon which ended around 1990.

2. In Christensen's simplified TFP data set, the LEC - US input price differential was -3.0% per year for the 1985-89 period and was +0.4% for the 1990-94 period.[1] In other words, input prices for the LECs over the past five years grew at a slightly

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[1] I calculated these averages from the yearly input price differentials contained in the last column of table 3 of Christensen's Reply.

faster rate than that for the U.S. economy as a whole. As a result, if a fixed input price differential were to be included in the price caps formula, the data for the most recent period would imply a **downward** adjustment to the productivity offset.

3. In this declaration, I also respond to several recommendations offered by AT&T and the Ad Hoc Telecommunications Users Committee. I explain why their proposal to estimate productivity growth separately for interstate access services has no meaningful economic basis. They arbitrarily allocate inputs that are common to both interstate and intrastate services. In fact, there is no way legitimately to separate out the interstate portion of these inputs. As a result, their models are inherently flawed and produce meaningless results.

4. I also examine AT&T's two "new" arguments in advocating that a historically-determined input price differential should be included in the price caps formula. The first relies on an inappropriate statistical test that asks the wrong question, and is so stringent that it would find a significant input price differential (for price caps purposes) unless the input price changes for the LECs were virtually identical with national input price changes in every year examined. By focusing on whether the individual data points were identical, AT&T ignores the real issue associated with a fixed input price differential -- whether the **average** change in input prices for LECs is indistinguishable from the national average. The second argument is based on AT&T's so called "performance-based" model, which is so flawed as to undermine any conclusions based on the data it produces. Indeed, I identify a number of problems in that model which undermines its potential use as an alternative to Dr Christensen's

model. Among the problems with the model is a flawed quality adjustment procedure which results in an upward bias to the estimated input price differential.

2. The Estimation of a Separate TFP for Interstate Access Services

5. On behalf of AT&T, Dr.Norsworthy claims that a separate total factor productivity growth rate (TFP) can be estimated for interstate access services. From a conceptual perspective, this claim is incorrect. Separate measures of TFP for individual services can only be defined if the multiple output production function is separable into sub-functions, that is, only when it is possible to define separate production functions for each service will it be possible to calculate service-specific TFP. But it is not possible to define service-specific production functions for interstate and intrastate services as long as these services use factors of production in common.[2] Clearly this is the case in telecommunications, where a substantial amount of labor and especially capital are used in common by interstate and intrastate services.

6. As discussed in Appendix A, only in the case where **no** inputs are used in common by interstate and intrastate services can a LEC's total cost of production be obtained conceptually as the sum of the costs of producing interstate services and intrastate services. This means that only in this special case (not applicable to telecommunications) can total costs be **separated** in any economically meaningful way into the costs of producing interstate services and the costs of producing intrastate

[2] Additional technical details of this analysis are contained in Appendix A.