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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Magalie Roman Salas
Secretary
Federal Communications Commission
445 - 12th Street, SW - TW-A325
Washington, D.C. 20554

Re: CC Docket Nos. 96-262 and 94-1

Dear Ms. Roman Salas:

Attached is a paper, "Current Issues in Modeling the Commission's X-Factor: A Rebuttal of IXC Arguments," prepared by Professor Frank Gollop. This paper responds to various criticisms raised in the November 9, 1998 Reply Comments and subsequent ex parte submissions of AT&T, MCI, Ad Hoc and Sprint regarding USTA's update of the FCC's X-Factor model. USTA replicated the FCC model and updated it through 1997 relying on the same data sources and variable measurement techniques specified in the FCC's model. The updated FCC model yields 2.56 percent and 3.97 percent X-Factors for 1996 and 1997 respectively.

Professor Gollop observes that while the IXCs dislike the results of the update, the IXCs offer no economically meaningful basis for changing the FCC's model. The earnings and separations adjustments they propose would eviscerate the incentives of price cap regulation. For example, Professor Gollop explains that the increase in LEC earnings is not the source of the decline in the X-Factor. Changing market fundamentals contributed to the drop in X in 1996 and 1997 and these lower levels are expected to continue into the future. The IXCs' objective is to revive rate of return regulation and reverse the consumer and producer gains achieved under price cap regulation. He also refutes specific IXC proposals. He explains that substituting Local DEMs for calls as the measure of local output has no economically meaningful foundation and is simply a means to mechanically raise the growth rate of LEC output so that measured productivity in the FCC model will increase thereby increasing X. He also points out that economic theory invalidates an interstate-only productivity model and observes that the IXC interstate-only model is contradicted by data in the record. The arguments of the IXCs provide no empirical support for maintaining or raising the current 6.5 percent X-Factor.

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Pursuant to Commission Rule 1.1206(b)(2), two copies of this letter and attachments are being provided to you for inclusion in the public record for each above-referenced proceeding. Please contact me with any questions.

Sincerely,

Linda L. Kent

Linda L. Kent
Associate General Counsel

CC: Larry Strickling
Jane Jackson
Rich Lerner
Jay Atkinson
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Current Issues in Modeling the Commission's X-Factor:

A Rebuttal of IXC Arguments

Prepared by

Frank M. Gollop

Professor of Economics

Boston College

April 9, 1999

EXECUTIVE SUMMARY

The Updated FCC Model Yields 2.56% and 3.97% X-Factors for 1996 and 1997, respectively.

- USTA replicated the FCC model and updated it through 1997 relying on the same data sources and variable measurement techniques specified in the Commission's model.
- The 2.56% X-Factor for 1996 is lower than any X-Factor in the 1987-95 period. The 3.97% factor for 1997 is lower than seven of the nine X-Factors in that same period.
- The Commission adopted a 6.0% X-Factor in 1997 based on its model's results showing a five-year (1991-95) average X-Factor of 5.2% and what it perceived as a rising trend in X over the 1993-95 period. The 2.56% and 3.97% factors refute the hypothesized rising trend. The X-Factor in the most recent five-year (1993-97) averages 4.4%.
- The clear inference is that the Commission's 6.5% policy tool is set too high.

The Updated FCC Model Relies on Published Data and Sources Specified in the FCC Model. USTA and IXC Estimates Lead to the Same Policy Conclusion.

- The IXCs criticize USTA's update claiming it is undocumented and its calculations cannot be verified. This is simply untrue. USTA's October 1998 Comment discloses update methods and data in extraordinary detail. None of the IXCs identifies a single instance of USTA's update failing to replicate FCC methods.
- Quibbling about data details is a red herring. USTA's update uses data available March 1999. The AT&T/MCI baseline update uses data available December 1998 and yields 1996 and 1997 X-Factors equaling 2.5% and 4.6%, respectively. Both updates produce factors well below the current 6.5% policy tool.

Substituting Local DEMs for Calls Has No Economically Meaningful Foundation.

- The IXCs urge the FCC to change its model, substituting local DEMs for calls as the measure of local output. The only basis given is that DEMs have increased faster than calls. This numerical result, however, provides no economic foundation for the proposed change.
- Because the purpose of X is to set a cap on prices and revenues, sources of revenue determine the proper measures of output in the FCC model. An analysis of revenue sources does not suggest that local DEMs are superior to calls. 67% of intrastate revenue is flat-rate or line volume related; only 33% of intrastate revenue is related to usage. More than 80% of local revenue is flat-rate or line related. Only a very small portion is usage sensitive.
- The IXC intent is clear. The IXCs simply want to mechanically raise the growth rate of LEC output so that measured productivity in the FCC model will increase with a consequent increase in X. AT&T's position is particularly disingenuous since it now is criticizing calls, the very measure of local output it proposed in 1996.

The Increase in LEC Earnings Is Not the Source of the Recent Decline in the X-Factor.

- The IXCs confuse movements in accounting rates of return with changes in the rate of return embedded in the FCC model. Accounting rates of return are based on net plant defined under rate-of-return while the rental price of capital and the implicit rate of return in the FCC model are based on capital stock as defined in the X-Factor model. Net plant declined by 10% over the 1990-97 period while capital stock increased 18%, roughly paralleling the 16% growth in earnings. The FCC's rental price of capital is not dependent on movements in accounting rates of return.
- The IXCs criticize the FCC's rental price of capital--a variable specified exactly as AT&T proposed to the Commission in 1996. AT&T claimed then that its rental price "conforms to the economic theory of enterprise productivity...and further conforms to the reality of the

telecommunications industry." Neither AT&T nor any of the other IXCs offers an opinion as to why economic theory has changed since 1996.

- The FCC's X-Factor is modeled as a "differential" between LEC performance and that for the U.S. economy as modeled by BLS. The FCC currently specifies its rental price of capital exactly as does BLS. Adopting the IXC recommendation would compromise the comparability of LEC productivity against BLS benchmarks.
- The IXCs' proposal to peg the LECs' rate of return at a prescribed rate fails to reflect fundamental market dynamics. Opportunity costs proxied by the rate of return are not constant. They vary year-to-year and change continuously throughout a business cycle. Both the BLS and FCC models explicitly recognize this market phenomenon.

The IXCs True Objective Is to Resuscitate Rate-of-Return Regulation, Reversing Consumer and Producer Gains Achieved Under Price Caps.

- Calibrating X on a prescribed rate of return is inconsistent with the goals of incentive regulation. The promise of being able to retain earnings achieved through productivity growth exceeding X is what stimulates productivity, the source of gains for the LECs (earnings) and its access customers (lower prices).
- The increase in earnings is the visible and intended result of the incentive mechanism purposefully built into the price-cap paradigm. Productivity improvements stimulated by earnings have benefited access customers who have enjoyed rate reductions exceeding 42% since 1991.
- Increased LEC earnings and decreased access prices show that the dead-weight loss associated with rate-of-return regulation has been reduced, with gains shared by both access customers and the LECs. Economic welfare has increased.
- The IXCs' true objective is to have the X-Factor set so that LEC earnings move to some prescribed rate of return. The IXCs want nothing less than to resuscitate rate-of-return regulation, dressing it up in X-Factor clothing.

Changing Market Fundamentals Contributed to the Drop in "X" in 1996 and 1997 and These Lower Levels Are Expected to Continue into the Foreseeable Future.

- The sizable declines in labor employment that were a prime driver of the increase in measured LEC productivity through 1995 slowed in 1996 and came to an end in 1997. This trend reversal caused the X-Factors for 1996 and 1997 to decrease by 0.43 and 1.04 percentage points, respectively.
- Future employment trends are expected to look more like 1995-97 than 1991-95. The X-Factor in coming years can be expected to be no less than 0.4 to 1.0 percentage points below the levels witnessed in the 1991-95 period.
- Under access reform, X-Factors for the LECs can be expected to be reduced by 0.1 to 0.4 percentage points with an average expected value of 0.2 percentage points for 1998 and later years.
- Reversed labor trends and rate restructuring reflect real-world events signaling changes in market fundamentals. The expected cumulative effect on the X-Factor for 1998 and later years is that X will be lower than its calculated 1991-95 levels by amounts ranging between 0.6 and 1.2 percentage points.

An Interstate-Only Analysis Is Not Economically Meaningful and Is Contradicted by the IXCs' Own Premises and Data.

- Economic theory invalidates an interstate-only model. It is an uncontested principle of economics that production of multiple products with common inputs is not separable into distinct parts. One may not examine the cost (productivity) conditions of each output in isolation because the multiple outputs are not produced in isolation.

- Inputs used in common (e.g., switches) cannot meaningfully be allocated into distinct interstate and intrastate bundles. Any such allocation is arbitrary and without economic meaning. No IXC refutes or challenges this economic principle.
- The IXC interstate-only model is contradicted by data in the record. The IXC assertion that interstate services are more capital intensive while intrastate services are more labor intensive coupled with positive growth rates for capital and large negative rates for labor contradicts the IXC "equal input growth rate" assumption. It also should suggest to the IXCs that, given their belief that separable productivity concepts are meaningful, intrastate productivity growth must exceed interstate growth.
- This contradiction was first pointed out in USTA's March 1996 filing. Neither AT&T nor any other IXC has responded to date. None has offered an alternative economic, institutional, engineering, or factual basis for any interstate-only model.

The IXC "Separations Adjustment" Is Nothing More than an Attempt to Ratchet Up Its Interstate-Only Model to a More Aggressive Level.

- AT&T and MCI are asking the Commission to take what originally was an "equal input growth rate" interstate-only model and modify it to reflect a further reduction in interstate inputs to a separations-based 25% share.
- Like its first-generation counterpart, this second-generation model similarly fails the Commission's economic meaningfulness standard. Cost allocations under separations are based on historical accounting conventions introduced more than 50 years ago as an administrative prerequisite to rate-of-return regulation.
- The IXCs' adjustment requires three assumptions: (i) it is economically meaningful to distinguish interstate and intrastate inputs, (ii) the method for distinguishing them is known, and (iii) the appropriate allocation is 25/75 and remains constant over time. The IXCs offer no economic foundation for any one assumption, let alone all three.
- It is difficult to imagine a clearer call for a full return to rate-of-return regulation.

The Commission Should Resist Any Attempt by the IXCs to Arbitrarily Redefine Output Variables in the FCC Model to Mechanically Achieve Higher X-Factors.

- Economic principles offer some guidance. Since price-caps are intended to "regulate" price growth for output services provided at those prices, the sources of LEC revenue must determine the categories and measures of output in the FCC model.
- Defining interstate or intrastate output solely in terms of the LECs' fastest growing usage-based output would violate the necessary policy link between true revenue-generating outputs and the caps on their prices. Roughly two-thirds of both interstate and intrastate revenues derive from flat rates. Only one-third derives from per-use rates.
- Price caps need to be applied to real prices for real outputs. To calculate an X-Factor based on artificial characterizations of LEC outputs would yield an arbitrary and economically meaningless policy tool.

Conclusion: The Commission's 6.5% X-Factor is Too High. The IXCs Offer no Economically Meaningful Basis for Changing the FCC Model.

- When evaluated by the FCC's own model, the X-Factor results for 1996 and 1997 provide absolutely no support for maintaining the Commission's current 6.5% factor.
- The expectation that a lower X will persist into the near-term future argues for reducing X.
- The IXCs have failed to propose modeling changes that satisfy the FCC's long-established standard of economic meaningfulness.

The Commission has been steadfast in its effort during its price-cap deliberations to ground its decisions in economic principles. This is consistent with the directive it received from the Telecommunications Act to meaningfully transition the industry to what ultimately will be a fully competitive status. However, the Commission's desire to replace administrative rules with economic stimulants long preceded the Telecommunications Act. It was the critical principle guiding the Commission's initial decision to replace the rate-of-return framework with the incentive-based price-cap paradigm.

Over the years there has been considerable debate over the structure of the X-Factor formula and the measurement of its variables, but the Commission's decision rule has been clear. The FCC has formally embraced "economic meaningfulness" as a principle decision-making criterion for settling debate at each juncture. In its Fourth Further Notice of Proposed Rulemaking, the Commission identified economic meaningfulness as the first among three essential characteristics for its X-Factor: "...(T)he X-Factor adopted in our long-term price cap plan should have three essential characteristics. First, the X-Factor should be economically meaningful."[1] Later in the same notice, as the Commission addressed the soon to be hotly contested interstate-only issue, the standard is the same:

> We seek comment whether calculation of an interstate TFP number or an interstate input price index is economically meaningful....We request that parties provide econometric or other evidence regarding whether an interstate TFP is a meaningful economic measure.[2]

Economic meaningfulness is the announced FCC standard and presumably remains so.

With this standard in mind, this rebuttal document evaluates the core X-Factor issues raised in the November 9, 1998 Reply Comments and subsequent ex parte submissions of AT&T, MCI, Ad Hoc, and Sprint (hereinafter referred to as "IXCs"). To set the stage, the results of USTA's recent update of the FCC's X-Factor model are presented in section 1.

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[1] Price Cap Fourth Further Notice, CC Docket No. 94-1, para 16.
[2] Ibid., par 64.

Subsequent sections evaluate each IXC critique of or proposed adjustment to the updated FCC model against the Commission's criterion of economic meaningfulness.

1. The Updated FCC Model Yields 2.56% and 3.97% X-Factors for 1996 and 1997, respectively.

USTA has replicated and updated the FCC's X-Factor model as specified by the Commission in its May 1997 order. A full report describing the update was filed as part of USTA's Comment on October 26, 1998. USTA produced a line-for-line replication of the FCC spreadsheet model, relying on the exact data sources and variable measurement techniques specified by the Commission in its order. Using final published data available as of February 1999 and conservative provisional estimates for those few data items not yet published (to be described fully below), the updated 1996 and 1997 X-Factors are 2.56% and 3.97%, respectively.

These factors are well below those estimated by the same model for the years 1987 through 1995. The 2.56% X-Factor for 1996 is lower than any previous X-Factor. The 3.97% factor for 1997 is lower than seven of the nine X-Factors in the 1987-95 period.

The Commission adopted a 6.0% X-Factor in its May 1997 order based on results from its model that showed a five-year (1991-95) average X-Factor of 5.2% and what the FCC perceived as a rising trend in X over the 1993-95 period. The update of that model now offers no support for the Commission's 6.5% policy tool (6.0% X + 0.5% CPD). The 1996 (2.56%) and 1997 (3.97%) X-Factors are well below levels observed through 1995. They refute what the Commission believed would be an upward trend extending beyond 1995. The most recent five-year average, which includes the 1993-95 factors so instrumental in the Commission's past decision, is 4.4%. The Commission's own model now supports a significant reduction in the X-Factor.

2. The Updated FCC Model Relies on Published Data and Sources Specified in the FCC Model. USTA and AT&T/ MCI Estimates Lead to the Same Policy Conclusion.

The IXCs critique USTA's original October 1998 update of the FCC model for not using publicly available data and for not revealing the methods it used to estimate data values when published data were unavailable.[3] This simply is untrue. USTA's update is a straightforward replication of the original FCC model. FCC methods and data sources are described in detail in Appendix D of the Commission's May 1997 order. USTA fully describes its update of the FCC model in Attachment D to its October 26, 1998 Comment, with line-by-line spreadsheet replications of the FCC model.

USTA adopted estimates only when reported data were not yet available or clearly were in error. The IXCs criticize USTA for this but their critique is particularly disingenuous since Dr. Norsworthy, who updated the FCC model on behalf of AT&T and MCI,[4] states that he too occasionally found it necessary to construct estimates when published data were unavailable and viewed some of the preliminary published data entries as implausible.[5]

In these instances, USTA and AT&T/MCI adopted different estimates and the case of 1996 labor compensation provides a revealing illustration. Published data show an annual compensation per employee series with the following trend from 1995 to 1997: $46,717, $54,601, and $51,605.[6] The AT&T/MCI update adopts this series in spite of Dr. Norsworthy's acknowledgment: "Total labor compensation for the RBOCs shows an implausibly large increase in 1996, followed by a similar decrease in 1997."[7] USTA made clear in its October 1998 filing that the upward spike observed for 1996 labor compensation is the result of changing FCC reporting requirements for labor compensation. USTA therefore

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[3] Attachment A to AT&T Reply Comment dated November 9, 1998, CC Docket 94-1, p. 2.
[4] Ibid., p. 1.
[5] Ibid., p. 2.
[6] Chart D6 in Attachment A to AT&T Reply Comment dated November 9, 1998, CC Docket 94-1.
[7] Attachment A to AT&T Reply Comment dated November 9, 1998, CC Docket 94-1, p. 2.

replaced the reported 1996 compensation with a provisional estimate whose calculation is fully described on page 5 of Attachment D to USTA's October Comment.[8] This leads to a 1995-97 labor compensation per employee series of $46,717, $49,100, and $51,605. Only the 1996 data point is replaced. Simple inspection of the contrasting annual wage series leaves little doubt as to which series better satisfies the Commission's economic meaningfulness standard-- at least until final revised data are available.

Most of the data items not yet published when USTA and AT&T/MCI performed their initial updates now are published and final. A complete, detailed description of these data and their comparison to estimates used in the earlier USTA and AT&T/MCI updates are provided in Appendix A. USTA has updated the FCC model on the basis of the most current published data. This update leads to the 1996 and 1997 X-Factors reported in section 1. A full set of tables presented in the original FCC format is presented in Appendix B.

Though the above discussion has been made necessary by the IXCs' claim that the low X-Factors for 1996 and 1997 are the result of data disagreements between USTA and the IXCs, it turns out that there is no need to quibble about data details. The important policy conclusion remains the same as can be seen from Table 1. Whether one looks at the results of the FCC model dated October 1998 (USTA), November 9, 1998 (AT&T/MCI), or March 8, 1999 (USTA), the 1996 and 1997 X-Factors are well below the currently mandated 6.5% rate

Table 1

UPDATED FCC MODEL

	USTA October 26, 1998	AT&T November 9, 1998	USTA February 15, 1999
X-Factors:			
1996	2.11	2.53	2.56
1997	4.14	*5.17	3.97

* This AT&T estimate is higher than its USTA counterparts because it relies on an estimate of 1997 local calls that exceeds the now published FCC SOCCC value and on an estimate of 1997 special access lines that exceeds the revised level that will soon appear in FCC reports. (See Table 1.) USTA's March 8, 1999 update incorporates the correct 1997 data for these two variables.

[8] Chart D6 in Appendix A to Attachment D to USTA's Comment dated October 26, 1998, Docket 94-1.

(6.0 X + 0.5% CPD). From a policy perspective, the IXC concern about data is truly moot.

It is also important to emphasize that USTA faithfully replicates the FCC spreadsheet model, a property not challenged by AT&T, MCI, Sprint, or Ad Hoc. If the above data issues are, according to AT&T's assessment, "the most serious flaw in the USTA study,"[9] then it seems fair to conclude that this major source of IXC concern has been resolved. It is clear that the policy conclusion has not been affected by *de minimus* data issues. No matter how perturbed by data changes since October 26, 1998, both 1996 and 1997 X-Factors are well below the current 6.0% rate.

3. Substituting Local DEMs for Calls Has No Economically Meaningful Foundation.

Local output in the Commission's X-Factor model is measured by calls, reflecting an FCC decision that has been in place since May 1997. AT&T, MCI, and Ad Hoc now recommend that the Commission maintain calls through 1995 but switch to local dial equipment minutes (DEMs) for 1996 and 1997. Their argument is that because local DEMs have increased much faster than calls since 1995 DEMs would be a more appropriate measure of local output. However, numerical differences in growth rates is not the issue. What is at issue is whether there is any meaningful economic foundation for changing the FCC's model.

None of the IXCs offers any economic or analytic foundation for the proposed modeling change. AT&T claims that the recent rise in DEMs is likely due to increased use of Internet connections but then simply asserts, as if its conclusion reflects axiomatic truth, that "accordingly, a more accurate measure of local output under current conditions is the number

[9] Attachment A to AT&T Reply Comment dated November 9, 1998, CC Docket 94-1, p. 2.

of local minutes (local DEMs) rather than local calls."[10] Ad Hoc claims it makes a "correction" to the FCC model and then boldly provides the basis for its conclusion:

> Ad Hoc's total company results reflect a correction to the FCC model to use local dial equipment minutes (DEMs) to measure local output. This correction is based upon the finding that the number of local calls, as used in the FCC model, clearly understates growth in output.[11]

Its announced basis is simply that DEMs grow faster than calls. No economic or analytic foundation is even attempted. Sprint totally ignores the issue and MCI does not state that calls should be replaced by local DEMs but simply reminds us that: "Since local revenue is a combination of per line and per minute charges for local service, and of charges for CLASS services, the most accurate estimator of demand for local services would be based on some weighted average of all of these types of outputs."[12] The Commission, however, long ago decided that it would adopt a single measure of local output for the sake of simplicity and that measure was call volume.

The proper assessment of the IXCs' "local DEM" proposal follows from the very purpose of the X-Factor as a public policy tool. Since X is used to cap prices and therefore revenue, it is the sources of local revenue that form the proper external standard defining the measure of local output. MCI acknowledges as much in the clause prefacing its statement reproduced in the preceding paragraph. An analysis of revenue sources reveals that 67% of intrastate revenue is flat rate or line volume related; only 33% of intrastate revenue is related to usage. Focusing more narrowly on the sources of local revenue, more than 80% is generated from lines. Only a very small portion is derived from per use-rates. To have an economically meaningful X-Factor, the measure of output used in the model must correspond to outputs driving revenue growth. An analysis of revenue sources does not suggest that local DEMs are superior to calls.

The IXC intent is clear. Having failed to convince the Commission to adopt an interstate-only format for its model, the IXCs now are attempting to raise the level of intrastate output

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[10] AT&T Reply Comment dated November 9, 1998, CC Docket 94-1, p. 18.
[11] Ad Hoc Reply Comment dated November 9, 1998, CC Docket 94-1, p. 20.

growth by substituting local DEMs for calls. This is a most disingenuous position for AT&T. It now is criticizing calls, the very measure of local output it proposed in 1996. The IXCs simply want to mechanically raise the growth rate of LEC output so that measured productivity in the FCC model will increase with a consequent increase in X. Since no economically meaningful foundation is offered and only an insignificant portion of local revenues derive from per-use rates, the Commission should not change the model it has had in place since May 1997.

4. The Increase in LEC Earnings Is Not the Source of the Recent Decline in the X-Factor.

AT&T, MCI, and Ad Hoc claim that the measured decrease in the X-Factor in 1996 and 1997 is no more than a numerical consequence of an anomaly in the FCC model. The IXCs argue that, in AT&T's words, "the huge surge in ILEC earnings" is responsible for the rise in the measured rental price of capital and therefore the decline in the X-Factor. The inference the IXCs would like the Commission to draw is that the observed decline in X is not due to structural changes in LEC operations or in its marketplace but is simply the artifact of a modeling quirk. In a transparent attempt to have the Commission return to accounting-based rate-of-return regulation, the IXCs urge the Commission to base its rental price of capital on a constant prescribed rate of return.

4.1. The Rental Price of Capital in the FCC Model is Based on Changes in Economic Variables, Not on Changes in Accounting Rates of Return as the IXCs Allege.

The IXCs mistakenly believe that the rental price of capital in the FCC's X-Factor model somehow moves in unison with accounting-based rates of return so that increases in the

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[12] MCI Reply Comment dated November 9, 1998, CC Docket 94-1, p. 26.

LECs' accounting rate of return must be arithmetically responsible for movements in the rental price and therefore X. AT&T's position is representative:

> The increased "capital rental price" is due to a huge surge in LEC earnings from 1995 to 1996 rather than any increase in the real cost of LEC inputs. The RBOCs' total composite (state and interstate) ROR rose from 10.87% in 1995 to 12.46% and 13.56% in 1996 and 1997.[13]

The IXCs confuse movements in accounting rates of return with changes in the rate of return embedded in the FCC model. Accounting rates of return are based on the ratio of earnings to net plant defined under a cost-plus paradigm that predates incentive regulation. In contrast, the rate of return embedded in the FCC's rental price of capital is defined as the ratio of earnings to the measure of capital stock as defined in the FCC model. The traditional accounting-based measure of net plant declined by nearly 10% over the 1990-97 period while the economically meaningful measure of capital stock in the FCC model (Chart D9) increased by more than 18% over the same period. The spread in growth rates of accounting net plant and economic capital stock is nearly 30 percentage points. Two conclusions are important. First, the rate of return implicit in the FCC model has not grown at anything near the rate the IXCs allege. Second, since net plant based on historical accounting costs and economically meaningful capital stock bear no necessary relationship, one cannot create a cause/effect relationship between movements in traditional accounting rates of return and the FCC's rental price of capital. These conclusions, of course, are ones with which AT&T is quite familiar and which it used in its own price-cap proceedings:

> In productivity studies capital is appropriately valued at its economic value. That value can differ substantially from book value, especially in regulated industries, where book depreciation is determined in a political process that may not reflect underlying economic conditions.[14]

In their present quest to resuscitate rate of return regulation for the LECs, the IXCs now change course and attempt to create an artificial link between accounting rates of return and capital rental prices.

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[13] AT&T Ex Parte, dated January 27, 1999, p. 12.

[14] NERA Schmalensee and Rholfs Attachment to AT&T Comments, Price-Cap Performance for AT&T, dated September 4, 1992, CC Docket 92-134, p. 13.

The IXC position is also belied by simple inspection of the rental price series in the FCC model. The rental price index (Chart D9) declines from 0.92 in 1996 to 0.89 in 1997. If the "surge" in earnings that caused accounting rates of return to rise from 12.46% in 1996 to 13.56% in 1997 (see above quotation from AT&T ex parte) is responsible for increasing the rental price of capital, how does AT&T explain the 1996/97 drop in the rental price?

The above discussion should not be interpreted to deny that LEC dollar earnings have increased in recent years. Earnings have risen and, as argued elsewhere in this rebuttal, that increase is a testimonial to the success of price cap regulation whose benefits have been shared by both access customers and LECs. Addressing the IXC claim directly, the relevant question is: has the movement in the FCC's rental price been unduly influenced by LEC earnings? The answer is an emphatic "No." Earnings over the 1990-97 period have increased by less than 16% (based on ARMIS total RBOC regulated net income). Capital stock as defined in the FCC model has increased over the same period by more than 18%. The relevant conclusion is that the rate of return implicit in the FCC model has remained relatively constant over the post price-cap period. The increase in LEC earnings is not responsible for the observed movement in the rental price of capital or the X-Factor. Fundamentals have changed and it is these that have affected the X-Factor. These will be addressed in section 6.

4.2. The IXCs Criticize the FCC's Rental Price of Capital-- A Variable Specified Exactly as AT&T Proposed to the Commission in 1996.

It is also important to note that AT&T's critique of the FCC's specification of the rental price of capital must be viewed with a jaundiced eye. In its Reply Comment, AT&T attempts to suggest that USTA has manufactured its own "capital rental price index" and that, because that rental price is a function of realized LEC earnings rather than some external or allowed measure of earnings, it does not reflect true LEC costs:

> Professor Gollop's update is substantially impacted by **his** computation of the "capital rental price index."....This increase in the "capital rental price," calculated by Prof. Gollop, is associated mainly with the huge surge in

> ILEC operating earnings in 1996 and 1997, and has nothing to do with any increase in the real cost of ILEC inputs.[15] (emphasis added)

In the attachment accompanying the AT&T Reply Comment, AT&T's expert, Dr. Norsworthy, is more circumspect and comments only that the rental price in the FCC model is a short rather than long run concept.[16] He does not argue, however, that the FCC model must use a long run concept nor does he call for a modification to the FCC model. There is a reason for this. In its January 1996 Comment, AT&T and Dr. Norsworthy proposed what they called AT&T's "Performance-Based Model." Capital payments were purposefully defined as a residual of revenue over labor and material costs. Earnings were explicitly defined as part of the cost of capital so that the rental price of capital specifically included the LECs' realized rate of return. Moreover, Norsworthy criticized the USTA/Christensen model because it did not rely on a realized rate of return:

> By contrast, the Performance-Based Model computes the rate of return by allocating <u>all</u> revenues received by the LECs to the three categories of input: labor, materials, and capital. This procedure in the Performance-Based Model conforms to the economic theory of enterprise productivity operating in the short- or long-run, and further conforms to the reality of the telecommunications industry, namely, that the enterprise is residual claimant to the revenues paid by its customers after all payments are made to its suppliers.[17]

The realized return basis of AT&T's rental price was no hidden or subtle feature of the AT&T model. This property was specifically referenced by the Commission as it wholly embraced the AT&T rental price for its own X-Factor model, a feature that remains in place to this day:

> We find that AT&T's residual earnings method is a more accurate estimate of the contribution of capital to the production of output than USTA's method of measuring rate of return, because AT&T's method measures the actual flow of funds to capital. In other words, the residual earnings method reflects actual payments to capital. We have decided to use AT&T's approach in our analysis of the record, with the minor modifications discussed below.[18]

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[15] AT&T Reply Comment, dated November 9, 1998, CC Docket 94-1, p. 19.
[16] Attachment A to AT&T Reply Comment dated November 9, 1998, CC Docket 94-1, pp. 1-2.
[17] Appendix A, Statement of John R. Norsworthy, to AT&T Comments in CC Docket 94-1, January 11, 1996 at p. 10.
[18] FCC Order in CC Docket 94-1, May 16, 1997, p. 33.

In short, USTA did not design the rental price of capital currently specified in the FCC model. It simply updated it. Moreover, the variable at issue was designed by AT&T and its expert who claimed that it "conforms to the economic theory of enterprise productivity operating in the short- or long-run, and further conforms to the reality of the telecommunications industry."[19] Interestingly, neither Ad Hoc nor MCI disagreed in 1996 with the basis offered then by AT&T. Today, however, AT&T reverses its position but without either refuting or amending the economic arguments its expert put forward on its behalf in 1996. This begs the question: What is the basis for the change in the IXCs' position? Neither economic theory nor the definition of the rental price variable has changed since 1996.

4.3. Pegging the Cost of Capital at Some Prescribed Rate, as the IXCs Urge, Would Be Inconsistent with the "Differential" Structure of the Commission's X-Factor and Conflict with the Basic Economic Principles of Dynamic Markets.

Economic theory requires that opportunity costs measured by some rate of return should enter the calculation of the LECs' rental price of capital. The debate hinges on how to measure opportunity costs. The FCC model defines LEC opportunity costs in terms of the LECs' annually changing realized (internal) rate of return. The IXCs propose that opportunity cost should be based on an external measure and, moreover, one that is pegged at some fixed rate of return. The "differential" structure of the FCC's X-Factor model and the dynamic character of opportunity costs both suggest that the standard of economic meaningfulness is better served by the FCC's current treatment of the rental price of capital.

Modeling X as a Differential. The FCC has chosen to measure its X-Factor using an indirect approach. Rather than measure X directly from LEC data, the FCC has calculated X as a

[19] Appendix A, Statement of John R. Norsworthy, to AT&T Comments in CC Docket 94-1, January 11, 1996 at p. 10.

differential between LEC and U.S. productivity and input price growth rates. For data on the U.S. nonfarm economy, the Commission has relied on the Bureau of Labor Statistics (BLS).

Capital expenses, opportunity costs, earnings, and the rental price of capital are treated identically in the FCC and BLS models. Both models are premised on the condition that total revenue equals total cost. Capital expense is defined as a residual. In effect, realized earnings are viewed as a measure of opportunity costs and therefore are categorized as a cost assigned to capital input. Both the BLS and the FCC define the rental price of capital as the realized rate of return. As a result, the "differential" between LEC and U.S. productivity performance is economically meaningful. The symmetric treatment of earnings, capital costs, and capital rental prices in the FCC and BLS models is conceptually appealing.

Opportunity Costs are Dynamic. Opportunity costs are not constant. They vary year-to-year and change continuously throughout a business cycle. This is true for firms in all industries, both perfectly and imperfectly competitive. Both the FCC and BLS models explicitly recognize this market phenomenon by measuring the rental price of capital in terms of realized rates of return. In contrast, the IXCs' proposal to peg the LECs' opportunity cost at a fixed rate does not reflect fundamental market dynamics and thereby fails the Commission's economic meaningfulness standard. Moreover, the problem is not resolved by engaging in contentious rate-of-return style hearings over the proper allowed rate of return. Setting the LECs' opportunity costs at any fixed rate has no foundation in economic theory or market reality.

The important conclusion is that LEC earnings are not the whipping boy responsible for the marked decline in both 1996 and 1997 X-Factors. The IXC claims mistakenly try to lever their argument based on an accounting rate of return that not only does not even enter the Commission's X-Factor model but also is inconsistent with its economic definition of capital input. The IXCs' attempts to revive rate-of-return regulation are transparent.

5. Calibrating X on a Prescribed Rate of Return Is Inconsistent with the Goals of Incentive Regulation. The IXCs true objective Is to Resuscitate Rate-of-Return Regulation, Reversing Consumer and Producer Gains Achieved Under Incentive-Based Price Caps.

The IXCs clearly want the Commission to "adjust" the X-Factor upward to tax the LECs for increases in their realized rates of return. Stated most directly, the IXC position is that the X-Factor should be raised to whatever level is necessary to reduce the LEC's realized rate of return on interstate services to 11.25% as measured via the separations formula. This effectively is an unabashed call for the Commission to step back in time and revive rate-of-return regulation, a paradigm inconsistent with the Commission's mandate to transition the industry to a competitive market.

An earnings adjustment has no place in a price-cap paradigm. First, neither price-cap regulation nor the X-Factor mechanism is intended to recalibrate the X-Factor each year so that prices yield a predetermined rate of return. A target rate of return is not a design feature of any X-Factor model. Second, it is inconsistent with the very nature of incentive regulation. The promise of being able to retain earnings achieved through productivity growth exceeding X is what stimulates productivity. A properly set X is both a stick (leading to lower prices) and a carrot (leading to higher realized earnings). This is the central design feature of any price-cap model. If productivity gains are taxed away via an "earnings adjustment," it would stifle productivity incentives with subsequent adverse effects for ratepayers.

This important point is that while earnings have increased neither the LECs nor the Commission need apologize. Increased earnings are the visible and intended result of the incentive mechanism purposefully built into the price-cap paradigm. Yes, the LECs have benefited but so have their customers. Productivity improvements stimulated by earnings have benefited ratepayers who have enjoyed large (approximate 42%) rate reductions over the

1991-97 price-cap period.[20] The rise in earnings and reduced access charges show that the dead-weight loss associated with rate-of-return regulation has been reduced with gains shared by both the LECs and their customers. Economic welfare has increased. This is the price-cap incentive mechanism at work. The potential for higher earnings stimulates productivity to levels that would not otherwise have been achieved. These productivity advances are then reflected in the X-Factors and, therefore, lower rates. To make an ex post, ad hoc "adjustment to earnings" not only steps back to rate-of-return regulation but diminishes incentives and runs the risk of killing the golden goose that has been responsible for lower access charges.

It should be clear to all that the IXCs' true objective is to have the X-Factor set so that LEC earnings move to some prescribed rate of return. The IXCs want nothing less than to resuscitate rate-of-return regulation, dressing it up in X-Factor clothing.

6. Changing Market Fundamentals Contributed to the Drop in "X" in 1996 and 1997 and These Lower Levels Are Expected to Continue into the Foreseeable Future.

The decline in the X-Factor in both 1996 and 1997 begs two questions: (i) If an FCC modeling error and the rise in LEC earnings were not responsible, did any change in market fundamentals contribute to the significant drop in the X-Factor in both 1996 and 1997 and (ii) are these lower levels expected to continue? The answers are "yes" in both cases. First, the sizable declines in labor employment that were a prime driver of the increase in measured LEC productivity growth through 1995 slowed in 1996 and came to an end in 1997, leading to a reduction in X. Second, the reversal in past labor trends together with revenue restructuring under access reform are expected to keep the X-Factor below the levels observed in the early half of the present decade.

[20] Attachment B of USTA Comments in CC Docket 94-1, October 26, 1998.

A complete report detailing the effects of these changing market fundamentals was prepared in November 1998 and submitted as Attachment D to USTA's November 9, 1998 Reply Comment. None of the IXCs has refuted either the economic principles or the empirical findings of that analysis. Since no rejoinder is required, only the major findings of that study are highlighted.

Labor Trends:

- In the 1991-95 price-cap period analyzed in the original FCC model, the LECs experienced reductions in employment at a phenomenal 4.9% annual rate. This had a sizable positive effect on the measured rate of LEC productivity growth in that period.
- The pattern changed beginning in 1996. The rate of decline in employment slowed to a 2.57% rate in 1996 and then disappeared in 1997 as LEC employment increased at a 0.04% rate. The effect of this trend reversal was simulated using the updated FCC model. It caused the X-Factors for 1996 and 1997 to decrease by 0.43 and 1.04 percentage points, respectively.
- The LECs recent employment history suggests that the era of rapid labor force reductions has passed. Future employment trends might look more like the recent 1995-97 history than the 1991-95 record. The policy conclusion is that the X-Factor in coming years can be expected to be no less than 0.4 to 1.0 percentage points below the levels witnessed in the 1991-95 period.

Rate Restructuring Under Access Reform:

- Rate restructuring shifts revenues among interstate output categories in the FCC model and thereby affects measured productivity growth and X. The effect is simulated through the updated FCC model.
- Under access reform, X-Factors for the LECs can be expected to be reduced by 0.1 to 0.4 percentage points with an average expected value of 0.2 percentage points for 1998 and later years.

Conclusion:

- Reversed labor trends and rate restructuring reflect real-world events signaling changes in market fundamentals. The expected cumulative effect on the X-Factor for 1998 and later years is that X will be lower than its calculated 1991-95 levels by amounts ranging between 0.6 and 1.2 percentage points.

The price-cap paradigm and its underlying incentive structure require that the X-Factor musts be forward-looking to be an economically meaningful stick and carrot. At least some of the IXCs agree with this principle. "MCI World Com's position continues to be that access

charges should be reduced to forward-looking economic cost."[21] In its recent ex parte communication with the Commission, AT&T goes so far as to make an explicit downward adjustment to its proposed X-Factor to reflect the effects of access reform.[22] Not only are the measured 1996 and 1997 X-Factors below their 1991-95 levels but changing market fundamentals suggest that relationship will continue into the foreseeable future. The forward-looking structure of the price-cap model requires that these events be reflected in the X-Factor.

7. An Interstate-Only Analysis Is Not Economically Meaningful and Is Contradicted by AT&T's and MCI's Own Premises and Data.

AT&T introduced its interstate-only model as part of its January 1996 Comment submitted to the Commission.

> Interstate access services rely more on fixed inputs, e.g. switches and transmission equipment, and less on labor and materials inputs, than do local services. Consequently, there should be greater economies of scale in the LECs' provision of interstate access than in their other telephone services. **Therefore, if we assume that inputs grow at the same rates for interstate access and other regulated telephone services provided by the LECs, the resulting implied allocation of costs is conservative.**[23] (Emphasis in original.)

Clearly, this represents AT&T's attempt to respond to the Commission's directive for an economically meaningful foundation of any interstate-only proposal.

USTA offered a two-pronged response in its Reply Comment dated March 1996. First, the microeconomic theory of production under common costs prohibits any meaningful allocation of common inputs to interstate and intrastate outputs. Second, AT&T's conclusion (in bold faced type above) is contradicted by data submitted by AT&T as part of its January 1996 filing. What is most revealing is that in its next filing (October 1998), AT&T offers

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[21] MCI ex parte letter dated December 2, 1998 from Mr. Chris Frentrup to Ms. Magalie Roman Salas, p. 1.
[22] Table attached to AT&T letter to the FCC dated December 18, 1998.
[23] Appendix A, Statement of John R. Norsworthy, to AT&T Comments in CC Docket 94-1, January 11, 1996 at p. 27.

absolutely no rebuttal to USTA's arguments. There is no restatement of its January 1996 position nor are any further economic arguments offered. There is not even a reference to the "equal inputs growth rate" assumption made in its initial model. All that is presented is an exercise showing the X-Factor that results from the FCC model when total company output is replaced with interstate output. Now, in its ex parte communications, the interstate-only model is again referenced but again without any economic foundation. AT&T has not recanted its January 1996 presentation but it has neither defended nor replaced it. AT&T's model clearly fails to meet the FCC's directive calling for an economically meaningful basis for its model. It has been silent since USTA's March 1996 filing.

A clear statement of USTA's position is presented in Attachment C of its Reply Comments dated November 9, 1998. The salient points are highlighted below.

7.1. Economic Theory Invalidates an Interstate-Only Model.

It is an uncontested principle of microeconomic theory that production of multiple products with common inputs is not separable into distinct parts. In brief, one may not examine the cost (productivity) conditions of each output in isolation because the multiple outputs are not produced in isolation. By definition, inputs used in common (e.g., switches) cannot meaningfully be allocated into distinct interstate and intrastate bundles. As a result, productivity growth or X-Factors at the level of interstate services are not meaningful concepts.

It is important to note that the problem is not that economic theory offers no guidance on how to allocate common costs. Economic theory is clear. One <u>can</u> perform such an allocation, but economic theory says one <u>may</u> not perform such an allocation. Any such allocation, including the one proposed by AT&T, is arbitrary and without economic meaning. Economic theory unambiguously dictates that in the context of the LECs' production technology there is no economically meaningful way to isolate a measure of productivity

growth for interstate services. By their silence on this point, the IXCs acquiesce. No IXC refutes or challenges this economic principle.

7.2. AT&T's Interstate-Only Model Is Contradicted by Its Own Data.

AT&T's assumption that "inputs grow at the same rates for interstate access and other regulated telephone services" can be tested. This assumption rests on either one of two possibilities, each of which is testable. First, while labor, capital, and intermediate inputs might grow at different rates from each other, each input, within its respective interstate and intrastate categories, grows at the same rate and has the same cost-share weight. Second, the cost-share weights might differ in interstate and intrastate services but all three inputs grow at identical rates. Both AT&T and MCI discard the first possibility by claiming that interstate services are more capital intensive than local services while the latter are more labor intensive than interstate services.[24] That leaves only the second possibility (identical input growth rates) as the potential basis for the AT&T and MCI position that interstate and rest-of-company inputs have identical growth rates. This too, however, is refuted by the data. The machine-readable data files accompanying AT&T's January 1996 filing display average annual growth rates for its measures of LEC labor, capital, and material inputs over the 1985-94 period equal to -3.39%, 3.95%, and 4.05%, respectively.[25] AT&T's own assertions about input mix and its own data not only fail to support the "basis" for its "interstate-only" model but refute it.

This then begs the question: While the "equal input growth rates" assumption cannot be supported, might it still be conservative as AT&T suggests, thereby leading to a result that is most favorable to the LECs' position? The answer is again No. In the AT&T data set referenced in the immediately preceding paragraph, the average annual rate of growth of

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[24] See the AT&T excerpt in the introduction to section 7.

[25] See data diskette accompanying Appendix A, Statement of John R. Norsworthy, to AT&T Comments in CC Docket 94-1, January 11, 1996.

capital input is seven percentage points higher than the corresponding growth rate of labor input, yet AT&T claims that interstate services "rely more on fixed inputs, e.g. switches and transmission equipment, and less on labor and materials inputs, than do local services." If so, then the faster growing capital input has a larger weight in AT&T's characterization of the interstate production function while labor input that declined at greater than a three percent annual rate has a higher weight in the intrastate production function--precisely the opposite of what AT&T must maintain to be "conservative."

A careful analysis of the economic argument offered by AT&T and its data not only invalidates its assumption but interestingly reverses its conclusion. The only possible inference of the AT&T analysis is that, if one assumes equal input growth rates for interstate and non-interstate services, one would produce a downward biased measure of "interstate" input growth and therefore an upward biased measure of "interstate" TFP growth as defined by AT&T.

The important cautionary note, however, is that this qualitative conclusion simply cannot and, according to economic theory, should not be quantified. There is no economically meaningful way to allocate inputs to interstate and non-interstate services. The only economically meaningful course is to evaluate LEC TFP growth on a company-level basis.

Finally, it is interesting to note that the above refutation of AT&T's interstate-only analysis based on equal growth rates was first presented in a document that I prepared and that subsequently was appended as an attachment to BellSouth's March 1996 Reply Comment. No IXC has responded to the arguments made in that document. This, however, has not deterred AT&T from repeating its claim: "For purposes of determining [interstate] inputs, AT&T has used total company inputs, which is a very conservative approach and quite obviously favorable to the price cap ILECs."[26] Once again, there is no response to USTA's refutation using AT&T's own data.

The Commission could not have been more clear when it stated in its May 1997

order: "We find no basis in the record for making an adjustment to the X-Factor to account for any differences between interstate and total company productivity."[27] If AT&T (and by extension MCI) hold fast to the economic basis first proposed by AT&T in January 1996, then they need to respond to the challenges offered first in March 1996, again in November 1998, and now for a third time. If they have recanted, they need to respond to the FCC's directive to provide an economically meaningful foundation for their interstate-only model.

7.3. Scale Economies Is an Insufficient Basis for AT&T's Conclusion.

AT&T asserts (see the quotation introducing this section) that greater scale economies in interstate services is the basis for its belief that its "equal input growth rate" assumption leads to a conservative conclusion.[28] The problem with this line of reasoning is that, since scale economies are a property of production functions, AT&T's reference to interstate scale economies requires the existence of an interstate production function, a premise refuted by the economic theory of production under common costs. The simple assertion that interstate scale economies exceed intrastate economies provides no economic foundation for an interstate-only model. Economic theory is clear. If interstate production functions are meaningless, any derivative discussion of interstate scale economies and productivity is equally meaningless.

8. The IXC "Separations Adjustment" Is Nothing More than a Second-Generation Interstate-Only Model.

Any adjustment based on the Part 36 separations rule, as proposed by both AT&T and MCI, should be viewed as an augmented second-generation interstate-only model. By proposing an additional "separations adjustment" to its interstate-only model, AT&T is asking

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[26] AT&T Reply Comment, November 9, 1998, CC Docket 94-1, p. 25.
[27] FCC Order in CC Docket 94-1, May 16, 1997 at p. 45.
[28] Appendix A, Statement of John R. Norsworthy, to AT&T Comments in CC Docket 94-1, January 11,

the Commission to take what originally was an "equal input growth rate" interstate-only model and now modify it to reflect a further reduction in interstate inputs to its separations-based 25 percent share.

Like its first-generation counterpart, this second-generation model similarly fails the Commission's economic meaningfulness standard. The same economic principles and the same data that refute its first-generation predecessor likewise refute this second generation attempt. Cost allocations under separations are based on historical accounting conventions introduced more than 50 years ago as an administrative prerequisite to rate-of-return regulation. They reflect administrative and policy compromises under an outdated paradigm.

A separations adjustment not only has no foundation in economic principles but also requires extraordinarily strong assumptions. Relying on the 25/75 split and holding it constant over time makes three assumptions: (i) it is economically meaningful to distinguish interstate and intrastate inputs, (ii) the method for distinguishing them is known, and (iii) the appropriate allocation is 25/75 and remains constant over time. No economic foundation for any one much more all three assumptions is offered. Intelligent discourse and informed policy judgment require that the IXCs hold their recommended separations adjustment up to the FCC's economic meaningfulness standard. In the absence of at least an asserted basis for each of the three assumptions, the IXC position must be rejected.

MCI's ex parte letter dated December 2, 1998 presents an illustration of LEC costs based on an application of 25/75 separation rules and, on the basis of this, calls for the FCC to adopt AT&T's interstate-only model. However, MCI provides no economic basis for its recommendation. MCI justifies its position only by citing the Commission's past reliance on the Part 36 rule.[29] It is difficult to imagine a clearer call for a full return to rate-of-return regulation under administrative rules without even an assertion that this meets the Commission's economic meaningfulness standard.

1996 at p. 27.

[29] MCI letter dated December 2, 1998, p. 1.

The Ad Hoc Telecommunications Users Committee already has provided its assessment of the economic meaningfulness of the Part 36 rule. Its economics consultant, Economics and Technology Inc., stated the following in its attachment to Ad Hoc's January 1996 Comment:

> The manner by which investment costs and ongoing operating expenses as allocated between the interstate and state jurisdictions is dictated by Part 36 of the Commission's rules and bears little direct relationship to the manner in which costs are actually incurred.[30]

AT&T's and MCI's support for a separations-based adjustment to the X-Factor is nothing more than an attempt to ratchet up the first-generation IXC interstate-only model to a more aggressive level. Appealing to the authority of separations as a historical accounting convention does not rehabilitate the IXCs' first-generation model. It only underscores the economic meaninglessness of AT&T's and MCI's interstate-only model, one that now out of necessity is based on a cost allocation under the Part 36 rule, a cost allocation which, according to their ally Ad Hoc, "bears little direct relationship to the manner in which costs are actually incurred."[31]

9. The Commission Should Resist Any Attempt by the IXCs to Arbitrarily Redefine Output Variables in the FCC Model to Mechanically Achieve Higher X-Factors.

IXC proposals over recent months form a pattern. There is little doubt that the IXCs want the Commission to raise its X-Factor. To do this, the IXCs need to mechanically massage the FCC model to yield a higher measured rate of LEC productivity growth. They first urged the Commission to assume that interstate and intrastate inputs grew at identical rates so that the Commission would focus only on the faster growing interstate outputs. The Commission rejected the proposed interstate-only model as economically meaningless. Forced to embrace a total company framework, the IXCs have now tried to mechanically

[30] Statement of ETI appended to Ad Hoc Comment, January 1996, CC Docket 94-1, p. 47.

increase the growth rate of intrastate output by urging the Commission to substitute local DEMs for calls as the measure of local output. Revealing the IXCs' true objective, the only foundation offered was the numerical truism that DEMs have increased faster than calls. It can be anticipated that the IXCs soon may argue that interstate and intrastate outputs in the FCC model should each simply be measured by that output category that is growing fastest.

Economic principles offer some guidance. Since price-caps are intended to "regulate" price growth for output services provided at those prices, the sources of LEC revenue must determine the categories and measures of output in the FCC model. To have an economically meaningful X-Factor, there must be a correspondence between each output quantity that truly is driving revenue growth and the measure of output in the X-Factor model. Should the IXCs recommend that output in the FCC model be measured, say, only by what they might identify as the fastest growing usage categories, a pair of simple facts cannot be ignored. Sixty-seven percent of intrastate revenue is associated with flat-rate or line-related volume; only 33% of intrastate revenue is related to usage. Much the same story applies to interstate services: 73% is associated with flat rate or line-related volume; only 27% is associated with per-use rates.

Price caps need to be applied to real prices for real outputs. To calculate an X-Factor based on artificial characterizations of LEC outputs would yield an arbitrary and economically meaningless policy tool.

10. Policy Conclusion: The Commission's 6.5% X-Factor Is Too High. The IXCs Offer No Economically Meaningful Basis for Changing the FCC Model.

The simple truth is that the IXCs dislike the results from the updated FCC model. The IXCs are left with no option but to call for changes to the FCC model, a framework adopted nearly two years ago. USTA is not in agreement with all facets of the Commission's model

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[31] Ibid.

but, at this stage of the incentive-regulation process, modeling changes should be considered if and only if they address fundamental flaws in the FCC model and contribute in some unambiguous and substantial way to the model's economic meaningfulness. None of the IXC proposals meet these standards. Neither economic theory nor the Commission's objectives has changed since 1997. All that has changed are the model's numerical results, results that, given structural changes occurring in the industry, are expected to persist into the near-term future.

Knowing the clear policy implication, the IXCs unabashedly plead for earnings and separations adjustments which would attack the very spinal cord of incentive-based price-cap regulation. In short, the IXCs true objective is to resuscitate rate-of-return regulation, a paradigm repealed for its failure to stimulate productivity growth. The LECs need not blush in the face of higher earnings. These earnings have slowly accumulated since 1991 and are the visible and expected result of incentive regulation whose X-Factor guarantees that incremental productivity gains are shared by the LECs (higher earnings) and their customers (lower access charges).

The policy conclusions are inescapable. First, when evaluated by the FCC's own model and against the best arguments the IXCs can muster, the X-Factor results for 1996 and 1997 provide absolutely no empirical support for maintaining or raising the Commission's current 6.5% factor. Instead, the updated results and the expectation that they will persist into the near-term future argue for reducing X. Second, the IXCs, the group with the greatest incentive to dedicate resources to rebut USTA's position, have failed to propose modeling changes that satisfy the Commission's long-established standard of economic meaningfulness.