ATTACHMENT A

USTA COMMENTS
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ACCESS REFORM AGAIN:
MARKET-BASED REGULATION, PRICING FLEXIBILITY
AND
THE UNIVERSAL SERVICE FUND

by

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I. INTRODUCTION

1. My name is William E. Taylor. I am Senior Vice President of National Economic Research Associates, Inc. (NERA), head of its telecommunications economics practice and head of its Cambridge office. I received a B.A. degree in economics, *magna cum laude*, from Harvard College in 1968, a master's degree in statistics from the University of California at Berkeley in 1970, and a Ph.D. in Economics from Berkeley in 1974, specializing in industrial organization and econometrics. I have taught and published research in the areas of microeconomics, theoretical and applied econometrics, and telecommunications policy at academic institutions (including the economics departments of Cornell University, the Catholic University of Louvain in Belgium, and the Massachusetts Institute of Technology) and at research organizations in the telecommunications industry (including Bell Laboratories and Bell Communications Research, Inc.). I have participated in telecommunications regulatory proceedings before state public service commissions, the Federal Communications Commission ("FCC") and the Canadian Radio-Television and Telecommunications Commission concerning access charges, competition, incentive regulation, productivity growth, telecommunications mergers and pricing for economic efficiency. My articles have appeared in numerous telecommunications industry publications as well as *Econometrica*, the *American Economic Review*, the *International Economic Review*, the *Journal of Econometrics*, *Econometric Reviews*, the *Antitrust Law Journal*, *The Journal of Regulatory Economics*, *The Review of Industrial Organization*, and *The Encyclopedia of Statistical Sciences*. I have served as a referee for these journals (and others) and the National Science Foundation and as an Associate Editor of the *Journal of Econometrics*.

2. I have been asked by the United States Telephone Association ("USTA") to comment on the economic issues raised in the FCC's October 5, 1998 *Public Notice* which seeks to update and refresh the record upon which the FCC contemplates acting to adapt its access charge

regime once again to changed circumstances.[1] In particular, the FCC invites comments regarding (i) the desirability of modifying the Commission's market-based approach to the regulation of access charges by represcribing access charges to cost-based levels, (ii) the continued applicability of a permanent price cap plan with a productivity offset (X) of 6.5 percent, and (iii) the usefulness of measured, triggered and phased access pricing flexibility proposals as different geographic and service markets are opened to competition at different rates and at different points in time. I also address comments on these issues raised by MCI in its recent petition for a return to prescriptive access charge regulation based on forward-looking economic costs.[2]

II. PRESCRIPTIVE REGULATION OF CARRIER ACCESS CHARGES

3. Just nine months after the Commission implemented the results from its multi-year review of access charges and price cap rules, the Commission should not open the door to consider additional prescriptive access charge reductions. The Commission correctly and explicitly rejected such an approach in its recent review.[3] In particular, it acknowledged the possibility that competition may not drive access prices to cost everywhere at once:

> We are confident that the pro-competitive regime created by the Act and implemented in the *Local Competition Order* and numerous state decisions will generate workable competition over the next several years in many cases, and

[1] *Public Notice*, FCC-98-256, "Commission asks parties to update and refresh record for access charge reform and seeks comment on proposals for access charge reform pricing flexibility," CC Docket Nos. 96-262, 94-1, and RM-9210, released October 5, 1998 ("*Public Notice*").

[2] MCI's view of the current state of interstate access charge reform is presented in a petition to the FCC and an accompanying document *Absence of Competition in the Exchange Access Market* ("MCI Report"), both dated May 7, 1998. The petition and the MCI Report follow a Petition for Rulemaking filed on December 9, 1997, by the Consumer Federation of America, the International Communications Association, and the National Retail Federation ("CFA/ICA/NRF Petition"). MCI's petition and, in particular, the MCI Report state why, in MCI's view, a radical departure from the FCC's current policy on interstate access charge reform has become necessary. Specifically, MCI reiterates an earlier call by the CFA/ICA/NRF Petition to return to a "prescriptive" approach for setting the prices of those access services.

[3] *In the Matter of Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Transport Rate Structure and Pricing and End User Common Line Charges,* First Report and Order, CC Docket Nos. 96-262, 94-1, 91-213, and 95-72, released May 16, 1997 ("*Access Reform Order*").

> we would then expect that [*sic*] access price levels to be driven to competitive levels. We also recognize, however, that competition may develop at different rates in different places and that some services may prove resistant to competition. [¶ 48]

In addition, the Commission put in place a specific "backstop" mechanism:

> [W]e also adopt a prescriptive "backstop" to our market-based approach that will serve to ensure that all interstate access customers receive the benefits of more efficient prices, even in those places and for those services where competition does not develop quickly. To implement our backstop to market-based access charge reform, we require each incumbent price cap LEC to file a cost study no later than February 8, 2001, demonstrating the cost of providing those interstate access services that remain subject to price cap regulation because they do not face substantial competition. [¶ 267]

While the Commission reserved the right to require submission of such studies at an earlier date if "competition is not developing sufficiently for our market-based approach to work," the date itself was chosen to coordinate with other events the Commission considered to be prerequisites to its market-based approach:

> We have chosen this date in order to give competition sufficient time to develop substantially in the various markets for interstate exchange access services. We have also chosen this date to permit us and all interested parties to take into account the effects of implementing the substantial changes that we adopt in this Order and that we will be adopting elsewhere to satisfy the universal service goals in section 254. By this date, we also expect to have additional regulatory tools by which to assess the reasonableness of access charges...
>
> We anticipate that the pro-competitive regime created by the 1996 Act, and implemented in the *Local Competition Order* and numerous state commission decisions, will generate competition over the next few years. Further, it would be imprudent to prejudge the effectiveness of those measures at creating competitive local markets. Rather than ignore or interfere with the effects of this developing competition on prices for interstate access services, we find that the public interest is best served by permitting emerging competition to affect access charge rate levels. In addition, the experience we gain from observing the effects of emerging competition on interstate access services will permit us more effectively and efficiently to implement any prescriptive measures that may be needed in the future to ensure that interstate access services remaining subject to regulation are priced in accordance with the forward-looking economic cost of providing those services. [¶¶ 268-269]

4. Elsewhere in the *Access Reform Order*, the Commission observed that a market-based approach might take "several years to drive costs to competitive levels" (¶ 45), that accurate forward-looking cost models were not currently available (¶ 45), that dramatic cuts in access charges for some companies could be disruptive even when new universal support mechanisms were in place (¶ 46), and that pricing flexibility for access was required by the market-based approach and an order from the Commission was forthcoming (¶ 49). It was thus contemplated in the *Access Reform Order* that events such as the availability of accurate cost models, completion of the Universal Service docket and experience under pricing flexibility for access would take place before the market-based approach to access charge reform could be examined. In particular, market-based reform of access charges would only make sense after the universal service fund has removed the implicit support for basic service. Otherwise, enhanced competition would simply bid away the revenue that was used to support low basic exchange rates, leaving the ILECs with inefficiently low local rates and no access revenues with which to support them.[4] The Commission thus relied appropriately on the simultaneous forces of market competition and universal service reform to move access rates—not all at once, but over time—to levels that would likely prevail in competitive markets for access.

5. No intervening events have occurred to cast doubt on these conclusions. Universal service support mechanisms are not currently in place, there is no agreed-upon method for calculating forward-looking economic costs for network elements, let alone for basic exchange or carrier access services, and there has been no experience of competition under flexible pricing for access services.[5] Thus, concerns that competition may have developed more slowly than anticipated for carrier access services are premature.

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[4] However, it has placed its faith appropriately in the twin forces of market competition and universal service reform to move access rates—not all at once, but over time—to levels that would likely prevail in competitive markets for access. Just because the market cannot, by itself, produce an instantaneous rebalancing to competitively-set access rates does not imply that market forces should be summarily abandoned in favor of heavy-handed and counter-competitive regulation.

[5] The FCC has repeatedly acknowledged its lack of the necessary information regarding the size of the implicit subsidy. Most recently, it stated: "... we conclude that a process that eliminates implicit subsidies from access charges over time is warranted ... First, we simply do not have the tools to identify the existing subsidies

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A. The market-based approach is superior to the prescriptive approach

6. The fundamental limitation of a prescriptive approach is that it is static in nature and is likely to fail to adapt to continually changing supply and demand dynamics—thus confounding desirable market outcomes. Administrative rigidity virtually ensures efficiency losses. Most prescriptive approaches are characterized by "regulatory lag"—*i.e.*, a delay between the enactment of a regulation or policy and its implementation. Regulatory lag could make the prescriptive approach ineffective and even counter-productive in an environment in which market conditions change even before the new regulation/policy is implemented. Firms constrained by the slow-moving regulatory process cannot behave competitively or be market-responsive. A prescriptive approach would, therefore, actually be a drag on competition and reinforce the perception that competition is not developing in the local exchange.

7. Even without regulatory lag, the inexorable operation of market forces and the unbundling requirements of the Act could make the prescriptive approach unsustainable in the long run. For example, a prescriptive approach which is intended to move current access rates by a certain amount over a five-year period could fail utterly if market forces presently unanticipated—*e.g.*, new developments in technology or marketing channels—ended up either constraining or preventing those price changes. A prescriptive approach could only work in an environment in which market forces are minimal or non-existent and change could not be introduced except by regulatory means. With the implementation of the Act's pro-competitive and market-oriented provisions, it would be almost impossible for any prescriptive approach to succeed or to co-exist with market forces.

8. Reliance on market forces would permit use of more efficient mechanisms to recover shared and common costs, including volume and term discounts and other forms of non-linear pricing that would be hard to employ under a more prescriptive approach. Market forces more closely

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precisely at this time. Second, we prefer to rely on the market rather than regulation to identify implicit support because we are more confident of the market's ability to do so accurately." *Access Reform Order*, ¶ 9 (emphasis

(continued...)

align consumer preferences and taste with costs than can ever be expected under a prescriptive approach—thus greatly improving efficiency. The benefits from such an alignment would be largely unavailable from tinkering with X-factors or arbitrarily prescribing rates and restricting pricing flexibility.

9. A prescriptive approach would significantly increase the involvement of regulatory agencies precisely at a time when competition and market forces should be the principal mechanisms for determining efficient output levels. Ironically, a full and diligent application of the prescriptive approach would commit the FCC to taking on new regulatory obligations such as the micro-management of all incumbent local exchange carrier ("ILEC") interstate services and rates. Just when the FCC should be shedding those responsibilities and encouraging market forces to direct service provision and pricing, the prescriptive approach (accompanied by protracted and contentious litigation) would simply raise the cost of regulation and arrest the pro-competitive forces sought to be unleashed by the Act.

10. Any use of a prescriptive approach for moving current access rates to competitive levels would require the FCC to make two very difficult judgements. First, it would have to determine the levels that access prices would reach naturally in a competitive market. Second, it would have to determine the true economic cost of the access services. These are both easier said than done in today's enormously complex telecommunications industry in which ILECs are mostly large multiproduct firms that experience economies of scale and scope. Even if the FCC were to accumulate information regarding ILEC costs and prices through the usual rulemaking process, it would simply not be possible for a single regulatory agency to simulate all the nuances and complexities of a competitive market process. The great virtue of market forces is that they are beyond the control of any single firm, customer, or government agency. Market outcomes, in effect, are the result of thousands of competitive interactions and transactions—something a single agency can never properly emulate. Therefore, *as long as the*

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added).

industry is to remain open to market forces, it would only be pointless and futile to employ a prescriptive approach (based on incomplete or imperfect information) to determine costs and prices. For example, while total service long run incremental cost ("TSLRIC") may provide an appropriate price floor, it cannot be a good estimate of the market price of access in a competitive, unregulated market. For a multiproduct firm with substantial fixed costs, incremental cost pricing is unsustainable in the long run and does not allow a firm to recover all of its economic costs of production. Allowing market forces to determine how shared and common costs should be recovered would result in more efficient pricing than a mechanism that arbitrarily allocates shared and common costs to services.

11. In the ultimate analysis, only the market-based approach to determining the course of interstate access prices is consistent with the direction set by the Act. While the FCC's interest in coordinating access reform with universal service reform is understandable, the market-based approach would remain the proper policy instrument even without parallel reforms in the funding of universal service.

B. More prescriptive regulation would undermine the incentives of the price cap plan.

12. In its review of price cap regulation, the Commission recognized the beneficial impact of the incentives of price cap regulation. A prescriptive approach to access reform is a return to cost-based rate of return regulation and a repudiation of price cap regulation. If the Commission were to force rate reductions in excess of the newly imposed X factor, it would have disastrous effects on price cap regulation. Such actions would undermine regulatory credibility and disrupt long run market dynamics. In addition, any link, however tenuous, between the regulated firm's success in the market and the maximum price it is permitted to charge in the next period would re-establish the perverse incentives that price cap regulation was designed to avoid. As a result, the rational regulated business would have significantly diminished incentives to increase investment and improve efficiency.

C. Irrespective of the development of competition, there is no economic need for prescriptive reductions in access charges.

13. The Commission rejected a prescriptive approach in part because it concluded that any reductions in rates should avoid large one-time changes and should instead be addressed over a period of years. The current price cap regulation already accomplishes this goal. On average, the price cap index falls by inflation less 6.5 percent per year. Moreover, as competition spreads, competitive services will be increasingly removed from price cap regulation so that the regulated local exchange carrier will have fewer services over which to distribute the annual price cap reductions. Thus, the downward pressure on the price of the less-competitive services remaining under price cap regulation will increase. Moreover, the low current and forecasted U.S. inflation rate implies that carrier access prices must fall in both nominal and real terms over time even for customers or geographic areas where competition is more limited.

1. Access prices have fallen significantly over time

14. Average interstate switched carrier access charges have fallen at an annual rate of about 10 percent per year since price cap regulation began.

Figure 1

Figure 1 shows the history.[6] During this period, annual inflation averaged about 3 percent, so that interstate access charges have fallen in real terms (relative to inflation) at about 13 percent per year.[7]

15. Specific examples of impressive reductions in access charges that have occurred over the last decade abound. For example, one RBOC's total rate for two ends of access (*i.e.*, originating plus terminating) has fallen from over 7.8¢ per minute in August 1988 to 3.6¢ per

[6] Data taken from Attachment B to USTA's *Comments* in this Docket.

minute in May 1998: a reduction of 54 percent. When the subscriber line charge and the PICC are added back to that access rate, the resulting total two-ended rate is still only 4.2¢ per minute: a reduction of 47 percent over 10 years. More telling is the reduction in that RBOC's *terminating* access charge over that decade: from almost 6¢ per minute to just under 1.4¢ per minute, or a reduction of 77 percent. This is hard evidence of a different market reality than the one portrayed by the IXCs who wish to be viewed as hapless captives of monopoly LEC providers of terminating switched access.[8]

2. The level of access prices is reasonable.

16. Though switched access charges may be falling, IXCs still complain about their level. For example, MCI's petition alleges that a year after the *Access Reform Order* was issued, interstate switched access charges remain $10 billion too high annually nationwide and are causing significant losses in consumer welfare. That estimate of excess access charges has been presented to the FCC before, but the FCC declined to reduce access rates by that amount in one fell swoop.[9] Instead, the FCC induced substantial reductions in switched access charges by implementing a more efficient access rate structure. By shifting recovery of non-traffic sensitive costs away from usage-based recovery, interstate access charges nationwide were reduced by $1.7 billion on July 1, 1997, and by $700 million on January 1, 1998.[10] Future reductions are anticipated as (i) implicit subsidies are removed from access rates with the phasing in of universal service reform and (ii) the normal operation of price cap regulation progressively reduces the price cap indices forcing access rates downward.

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[7] Part of the reduction in switched access charges was caused by shifts in cost recovery—from per-minute switched access charges to subscriber line charges ("SLCs") and presubscribed interexchange carrier charges ("PICCs")—rather than cost reductions.

[8] MCI Report, p. 19.

[9] *Access Reform Order*, ¶ 290.

[10] "USTA: IXCs are Failing to Cut Per-Minute Rates," *Telecommunications Reports*, February 16, 1998.

17. MCI's estimate of an alleged $10 billion excess in access charges is based in part on an estimate of forward-looking economic cost for switched access of 0.4¢ per minute produced by the HAI 5.0a cost model.[11] There is no independent confirmation yet of this estimate of cost or the resulting MCI estimate of excess access charges. In fact, the HAI 5.0a cost model and its many predecessors (in the line, generally, of Hatfield cost models) have been disputed and criticized in numerous forums including state regulatory proceedings on universal service and interconnection and unbundled element ("UNE") pricing. The FCC has not signaled any readiness on its part to accept the HAI 5.0a model or cost estimates produced by it, and has reserved judgment on the appropriate cost model to be used for the purpose of determining the forward-looking economic cost of serving rural, insular, and high cost areas.[12] Thus, even if it were appropriate to set prices at some measure of incremental costs, the Commission still lacks a reliable method to accomplish the task. Economic proxy models do not reflect the actual network and the manner in which it is used, and therefore would result in insufficient prices and a disincentive for entrants to invest. Moreover, current models are not developed for rural areas where competition has been slowest to develop, leaving the Commission the least information to prescribe rates where competitive pressures on prices are smallest.

18. The issue of whether access charges should be reduced prescriptively should not become confused with the measurement of the alleged excess in those charges. There is no real disagreement over the fact that ILECs' current access charges contain contribution toward the implicit subsidy for universal service. Rather, the relevant consideration is whether sufficient time has passed to allow concomitant universal service reforms the opportunity to make implicit subsidies explicit.

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[11] *Ibid.*, p. 2, fn. 3. In October 1996, AT&T also projected the same forward-looking cost of switched access using a similar model and methodology. Letter from Bruce K. Cox, Government Affairs Director, AT&T, to William F. Caton, Acting Secretary, FCC, in CC Docket No. 96-45, October 9, 1996.

[12] The FCC appears to have specifically ruled out for the time being adopting the methodology of the HAI 5.0a model for determining the forward-looking economic cost of switched access service. That model is supposed to estimate total *element* long run incremental cost ("TELRIC") i.e., the cost of an element, not a service. In contrasting what would be involved in calculating the forward-looking economic cost of access service with that (continued...)

3. Price cap LECs are not earning excessively.

19. IXCs cite the level and growth of the accounting earnings of the price cap LECs as support for the prescriptive reduction of access charges or an increase in the value of the productivity offset.[13] For example, MCI's petition criticizes the price cap LECs for earning returns of 15.52 percent, exceeding the FCC-prescribed rate of return of 11.25 percent. The IXCs assert that access charges ought to be reduced prescriptively until LEC returns are reduced to no more than 11.25 percent or that the LECs' productivity offset be revised upward to eliminate their excess earnings and bring access charges down to cost.

20. This focus on accounting earnings in a price cap regime is unwarranted and unwise. First, increases in earnings under price caps are a sign of success, not failure. Higher accounting earnings under a price regime imply that the regulated firm has been able to reduce its unit accounting costs more rapidly than required by the target value of X. Customers—at least IXCs—receive an up-front, guaranteed benefit in the form of lower prices irrespective of the ability of the LEC to reduce its unit costs. The only sense in which any party appears to be harmed by an increase in earnings is a dog-in-the-manger fallacy: if it were known at the outset that the LEC would be able to reduce unit costs at the higher rate, a higher value of X could have been required at the outset. Such an argument defies logic. Price cap regulation only makes sense if the regulated firm is financially exposed to the full range of market outcomes produced by its skill or stupidity. If increased earnings come to be interpreted as a failure of price cap regulation, then price cap regulation will become little more than rate of return regulation in disguise. Second, the inference that prescriptive regulation or a higher value of X is warranted because of high or increasing accounting earnings is inimical to the incentives

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involved in calculating the TELRIC of a UNE, the FCC has clearly ruled out applying the TELRIC principle to switched access service. *Access Reform Order*, ¶ 45.

[13] MCI has recently demanded that the X-factor be reset to 8.5 percent. (Letter from Mary L. Brown, Senior Policy Counsel, MCI, to Magalie Roman Salas, Secretary, FCC, June 1, 1998.) In a similar *ex parte*, AT&T demanded that X be reset at 9.3 percent. (Letter from Albert M. Lewis, Esq., Vice President-Federal Government Affairs, AT&T, CC Docket 94-1, May 20, 1998.)

intended under price cap regulation. The manager of a regulated firm must be able to face her accountant at the end of a successful month without fear that increased reported earnings will trigger regulatory retaliation. Otherwise, price cap regulation is no better than rate of return regulation with an institutionalized lag.

21. Third, regulatory accounting distorts both the level and growth of price cap LEC earnings. When accounting rates of return are adjusted to approximate economic rates of return, the actual rate of return achieved by price cap LECs during the 1991-1995 period averaged only 8.75 percent.[14] The same study showed that between 1991-1997, price cap LEC earnings grew at a 4.8 percent annual rate, while overall U.S. corporate after-tax earnings rose at a 12.2 annual rate and earnings per share of the S&P 500 companies grew at an annual 16.5 percent rate. Thus, on a comparable basis, neither the level nor the growth in price cap LEC interstate earnings is out of the range observed in unregulated competitive markets.

22. The FCC has itself rejected these arguments about LEC rates of return in the most explicit terms. For example, in its *Access Reform Order*, the FCC stated:

> In declining to reinitialize PCIs on the basis of carriers' rates of return, we reject GSA/DOD's suggestion that access rates have been excessive merely because the earnings of most price cap carriers have exceeded 11.25 percent, and, in some cases, by substantial amounts. When the Commission adopted price cap regulation, it specifically *permitted price cap carriers to earn in excess of 11.25 percent* in order to encourage them to become more productive. ... In addition, we found in the *LEC Price Cap Performance Review Order* that access rates declined substantially under price cap regulation from 1991 to 1994, in spite of the earnings to which GSA/DOD alluded [¶ 293, footnotes omitted, emphasis added].

On another occasion, the FCC outlined its vision of how price cap LEC performance relates to the transition to competition:

[14] *Ex parte* letter to Richard Metzger, Jr., Chief, Common Carrier Bureau, FCC from Lawrence E. Sarjeant, Vice President Legal and Regulatory Affairs, USTA, CC Docket Nos. 94-1 and 96-262, May 29, 1998. Ironically, when the FCC evaluated AT&T's performance under its price cap plan, AT&T strongly resisted the use of the (continued...)

> We find that reducing our regulatory reliance on earnings calculations based on accounting data is essential to the transition to a competitive marketplace, where forward-looking costs are central to decision making.[15]

23. The FCC's rejection of requests to force price cap LEC accounting returns down to 11.25 percent remains just as valid today. To repair the broken link between accounting costs and prices would be a regulatory step in an untenable direction, clearly harming the efficiency and productivity-enhancing incentives offered by price cap regulation. As the FCC has itself noted, access rate reductions during the LECs' price cap era have been substantial. Any change of course would risk losing the enormous benefits from such reductions in the future.

4. There is no economic basis to drive access prices to incremental cost.

24. Intoxicated with TELRIC-based prices for interconnection and UNEs, the IXCs enthusiastically urge similar treatment for carrier access services. However, nothing in economic theory suggests that multiproduct firms in competitive markets price services at forward-looking incremental cost or even at forward-looking incremental cost marked up by some arbitrary allocation of shared fixed and common costs. Firms in competitive markets recover such costs where market conditions—not accounting conventions—permit. TSLRIC is an appropriate price *floor*, (averaged over all the different prices charged for different units of a service) but it is not a good estimate of the level of the market price of carrier access in a competitive unregulated market.[16] A market-based approach reveals the economic cost of access, not as the sum of a TSLRIC study and an allocation of fixed costs, but as the level to

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same accounting returns concept that AT&T and MCI urge be applied to the price cap LECs. See Comments of AT&T, *Price Cap Performance Review for AT&T*, CC Docket No. 92-134, 1992.

[15] *In the Matter of Price Cap Performance Review of Local Exchange Carriers and Access Charge Reform*, Fourth Report and Order in CC Docket No. 94-1 and Second Report and Order in CC Docket No. 96-262, released May 21, 1997, ¶¶ 150 ("Fourth Report and Order").

[16] Recall that prices are said to be "subsidy-free" if they fall between stand-alone cost and total service long run incremental cost. See, *e.g.*, G.R. Faulhaber, "Cross-Subsidization: Pricing in Public Enterprises," *American Economic Review*, 65(5), 1975, pp. 966-977.

which competitive pressure forces access prices. As the Commission recognized, "competition will do a better job of determining the true economic cost of providing such services."[17]

25. For a multiproduct firm with substantial fixed costs, incremental cost pricing is unsustainable in the long run and does not allow a firm to recover all of its economic costs of production. Experience from other industries—including the U.S. long distance industry—indicates that in the face of significant fixed costs, prices systematically exceed incremental cost. For example, revenue per minute for interstate, interLATA domestic direct-dialed calls from a random sample of residential customer bills averages about $0.20 per minute between November 1997 and July 1998.[18] During that period, carrier access charges averaged between $0.04 and $0.05 per minute, and a reasonable estimate of forward-looking incremental costs would fall between $0.01 and $0.02 per minute.[19] Residential long distance service is thus currently priced at more than three times incremental cost, and the contribution (price less incremental cost) per minute in residential interstate long distance service ($0.13-$0.15 per minute) far exceeds the contribution per minute in carrier access charges ($0.04-$0.05 per minute).[20] Even assuming carrier access price reductions were passed through to customers in toll price reductions, the welfare gains from reducing carrier access charges to cost are swamped by the possible welfare gains from reducing the margin paid by residential toll users.

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[17] *Access Reform Order*, ¶ 265.

[18] The data comes from Market Facts, Inc., and PNR and Associates, Inc., *MarketShare Monitor*, September 9, 1998. The database also contains customer weights, which we use to make the sample representative of U.S. households. The results are reported in P.S. Brandon and W.E. Taylor, "AT&T, MCI, and Sprint Failed to Pass Through the 1998 Interstate Access Charge Reductions to Consumers," filed *ex parte* in CC Docket No. 96-262 on behalf of the United States Telephone Association, October 22, 1998.

[19] Incremental toll cost estimates range from 1-2 cents per minute at the low end to about 6-7 cents at the high end. The higher values include non-network costs such as overhead, customer and marketing costs—not all of which are likely to be properly included in the incremental cost of offering the service. See, *e.g.*, R.W. Crandall and L. Waverman, *Talk is Cheap*, Washington: The Brookings Institution, 1995, pp. 143-144.

[20] AT&T economists cite incremental costs of carrier access between 1/3 and 1/2 cents per minute. They are silent on the question of long-distance incremental costs. D. Kaserman, J. Mayo, M. Crew, N. Economides, G. Hubbard, P. Kleindorfer and C. Martins-Filho, "Local Competition Issues and the Telecommunications Act of 1996," prepared on behalf of AT&T, July 15, 1996, p. 27.

26. It would make no sense to impose an alleged standard of pricing in competitive markets (setting prices at forward-looking incremental costs) when the current markup on switched access prices is smaller than that for residential toll services (net of access). Allowing market forces to determine how shared fixed and common costs are recovered results in more efficient prices than when the Commission arbitrarily allocates such costs or attempts to calculate forward-looking economic costs.

D. Local competition is emerging to constrain access rates.

27. Competitive entry is facilitated by the many interconnection agreements, and by the provision of network elements and resold services at regulated rates. Barriers to entry into the local exchange market have fallen, and large business customers can be targeted by entrants having few sunk costs. The value of the new competitive local exchange carriers ("CLECs") has also grown: evidence is the valuation placed on TCG by AT&T and on Brooks Fiber and MFS by MCI-WorldCom. Competitive access providers ("CAPs") are placing fiber at a faster rate than RBOCs

28. The presence and variety of local and exchange access competition throughout the U.S. should already provide regulators and competitors with assurance that the market-based approach to access reform is proceeding as intended. Competitors have access to a variety of substitutes to LEC provided access; competitive alternatives obviate the need to increase the regulatory pressure on ILECs to reduce access prices. Alternatives for CAPs and CLECs include the deployment of their own facilities, the use of ILEC UNEs and the opportunity to employ wireless technology.

1. CLEC access line growth accelerates while RBOC access line growth falls.

29. The impact of competition is already being felt. Competition for the business market has been quite successful: according to a recent analyst report from Salomon Smith Barney, in the

first quarter of 1998, CLECs as a group added more business access lines than did the RBOCs.[21] Specifically, CLECs added 498,000 new business lines in that quarter (an increase of 221 percent over a year ago), while ILECs added only 461,000 new business lines (a decrease of 34 percent over a year ago).[22] The Salomon Smith Barney report notes that the non-AT&T long distance competitors did not have more incremental minutes than AT&T until 1986, a full 10 years after MCI carried its first switched long distance minute. The report's conclusion is that:

> [R]egulatory and public policy initiative toward opening up local markets has allowed the CLECs as a group to achieve in less than 2 years after the Telecom Act, what it took MCI and other alternative long distance carriers over 10 years to achieve during the 1970s and 1980s.

30. Investors who finance CLEC expansion apparently have no trouble understanding the potential growth that CLECs have in the current regulatory environment. In the two years subsequent to passage of the 1996 Telecommunications Act, CLECs have secured $14 billion in capital to finance there facilities expansion. By way of comparison, in the four years prior to the Act, CLECs raised only $2.4 billion in capital.[23]

31. According to a survey conducted by the *State Telecommunications Regulation Report*, approximately 2,100 local exchange interconnection agreements have been reached since passage of the Act.[24] The Salomon Smith Barney report also estimates that, given the net lines added by CLECs in the first quarter of 1998, the annualized market share of the CLECs as a group is already 4 percent. With that share increasing 50-100 basis points per quarter, the CLECs are expected to have 7-8 percent market share at the end of 1998 and up to 10 percent

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[21] "CLECs Surpass Bells in Net Business Line Additions for First Time (I/II)," Salomon Smith Barney (J.V. Grubman), May 6, 1998.

[22] According to this report, the actual growth rate of RBOC business line net additions has been trending downwards in every quarter since the first quarter of 1997.

[23] *Telecommunications Reports*, "CLECs Tell FCC of Success In Entering Local Markets," February, 2, 1998.

[24] "Number of CLECs in U.S. Now Exceeds Total of Incumbent Telcos," *State Telephone Regulation Report*, Vol. 16, No. 19, September 18, 1998.

by end-1999. This appears to agree with the Yankee Group prediction that CLECs will accrue over 11 percent of local revenues by 2000. Overall, these industry reports/analyses clearly demonstrate how quickly local market revenue share erosion is occurring thanks to the inroads that CLECs, including small carriers, are making in the business segment of the local market.[25]

2. CLEC and CAP facilities provide an alternative to ILEC access.

32. Another measure of alternatives to ILEC provided access is the rapid growth of CLEC and CAP facilities. CLEC network facilities more than doubled from 1996 to 1997; CAP network facilities grew almost 40 percent. The CLEC industry installed 41,103 route miles of fiber transmission facilities between 1996 and 1997—a 110 percent increase over this period—bringing the overall number of route miles to 78,506.[26] At the end of 1997, CAPs had deployed more than 1.8 million fiber miles.

Table 1: Fiber Miles Deployed, RBOCs and CAPs.

Year	RBOCs (000)	CAPs (000)	RBOC (% Growth)	CAPs (% Growth)	CAPs (% Growth) / RBOCs (% Growth)
1985	497				
1986	881		77		
1987	1192		35		
1988	1588		33		
1989	2037		28		
1990	2780	55	36		
1991	3882	82	40	49	1.24
1992	5210	123	34	50	1.46
1993	6649	231	28	88	3.18
1994	7965	396	20	71	3.61
1995	9414	643	18	62	3.43
1996	10837	1313	15	104	6.89
1997	12219	1826	13	39	3.06

Source: FCC, Fiber Deployment Update, End of Year 1997

[25] These trends also confirm that CLECs have decided to target the higher-margin business segment first, and will likely remain there until (i) universal service reform removes the contribution to implicit subsidies from business local rates, and (ii) the balance between incentives to compete in the two segments starts to shift in the direction of the residential segment.

[26] New Paradigm Resources Group, Inc., *1998 Annual Report on Local Telecommunications Competition.*

33. What is more important is the difference in fiber growth rates between RBOCs and CAPs: by the end of 1996, the CAPs' percentage growth was almost seven times that of the RBOCs, and although it has decreased since then, it was still more than three times that of the RBOCs by the end of 1997.

34. The CLEC industry's ability to avoid ILEC access rates is also evidenced by the considerable growth in the number of voice and data switches it has deployed. Between 1996 and 1997 CLECs have deployed 329 voice switches and 331 data switches. There are also plans to install 218 more voice switches. Over the same time period, there has been a 116 percent increase in the number of buildings connected by CLEC networks—from 27,974 in 1996 to 60,401 in 1997. In 1997, CLECs served 1.8 million access lines.[27]

3. Other technological alternatives.

35. Finally, a complete picture of local competition cannot fully emerge until the role of technology has also been examined. Just as financial incentives (driven by the existing structure and levels of rates) shape CLEC business and competition strategy, they also generate opportunities for alternative technologies to emerge. Often, those alternative technologies can become a critical component of the overall competitive strategy. In recent years, for example, the wireless local loop has emerged as a possible answer to ILEC control of access to residential customers through wireline loops. Being able to bypass the wireline loop affords a CLEC the opportunity to offer the full range of telecommunications services to customers and to avoid the more complicated and contentious interconnection route. AT&T has already conducted market trials using the wireless local loop (as have some other carriers) and the possibility of competition over such loops certainly looms large over the residential segment of the local exchange market.[28] Along the same lines, new interest in cable-based competition for

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[27] *Ibid.*

[28] This trend was recently documented in Jason Meyers, "Conspiracy Theory," *Telephony*, November 10, 1997. Evidence of the inroads made by wireless telephony was recently found in Louisiana in a survey conducted by Southern Media and Opinion Research. According to this survey conducted in April 1998, more than 15 (continued...)

local exchange services has emerged from AT&T's proposed purchase of TCI and from the rapid convergence of cable, broadband data and Internet access technologies.

36. Similarly, Personal Communications Service ("PCS") is now emerging as one of the fastest growing alternatives to wireline telephony. Originally intended to compete with analog cellular phone services, PCS is a digital hybrid of the best features of cellular telephony (mobility and portability) and wireline telephony (reliable connections and good sound quality). Several PCS providers have emerged on the national scene, with AT&T Wireless, Inc. and Sprint PCS, Inc. trying most aggressively to develop national footprints. In the process, PCS pricing plans have become dramatically cheaper within the last couple of years, with some prices resembling those typically associated with wireline telephony. For example, AT&T Wireless, Inc. has recently launched its Digital One Rate Plan which offers local and long distance calling anywhere within the U.S. at a single low rate (as low as 11¢ per minute when a subscriber signs up for 1400 minutes of use in a month).[29] Taking note of this development, the FCC has agreed recently, in principle, that PCS can be a viable substitute for wireline local and long distance telephony (rather than simply a complement as it was originally thought to be).[30] The most interesting feature of this development is that, because of such pricing, PCS is already a feasible alternative for residential customers, particularly those with low to medium usage volumes.[31] Therefore, PCS-led residential local competition is already becoming a reality.

(...continued)

percent of consumers in Louisiana were using wireless phones as substitutes for wireline phones, and 33 percent of consumers were calling more from wireless phones than from wireline phones.

[29] See http://www.attws.com for details. Also, see Robert G. Docters, "The New Wholesalers," *Telephony*, January 26, 1998, and a news report by Nancy Gohring, "AT&T to Shift Landline to Wireless," *Telephony*, May 11, 1998.

[30] FCC, *In the Matter of: Application by BellSouth Corporation, et al. Pursuant to Section 271 of the Communications Act of 1934, As Amended, To Provide In-Region, InterLATA Services in Louisiana*, CC Docket No. 97-231, Memorandum Opinion and Order, adopted February 3, 1998. See especially ¶¶ 72-73.

[31] This may appear counter-intuitive at first, but there is a simple reason for it. Many ILECs already have in place flat-rated services that offer residential customers unlimited local and/or intraLATA toll calling, sometimes along with the full complement of vertical services. A typical PCS plan meters all calls at a constant per-minute rate once a subscriber has exhausted the number of "included" minutes purchased for a fixed monthly access

(continued...)

E. Assuming X was chosen correctly, implementing a lower price than the one brought about by price caps creates economic inefficiencies.

37. The X-factor in a price cap plan reflects the ability of the regulated firm to reduce its unit costs more rapidly than other firms in the economy. In that way, the price cap derived from the X-factor replicates the pricing discipline that competitive markets impose on competitors. Reducing prices artificially by regulatory prescription in a price cap plan has two effects on economic efficiency. First, such a reduction effectively nullifies the implicit price cap contract that exposes the regulated firm to the financial consequences of market outcomes. Incentives to reduce costs, expand demand and invest in new technology revert to their level under rate of return regulation. Second, prescriptive price reductions within a price cap plan have the effect of choosing an X-factor that is too high. The resulting economic harm is that an efficient regulated firm would be unable to achieve the productivity growth required so that its unit costs would fall to meet its new price. Over time, price reductions would outstrip unit cost reductions, and price levels would increasingly deviate from economic cost, leading to unnecessary reductions in allocative economic efficiency. All else equal, prescriptive access rate reductions would discourage investment by the regulated firm as well as entry by potential competitors.

38. Reducing carrier access prices would provide a disincentive for competitors to enter local exchange and exchange access markets. As the LEC's prices are reduced, there is less potential return for a carrier that builds competing facilities. If pricing carrier access at TELRIC levels were a serious possibility, CAPs or CLECs having lower forward-looking incremental costs than the incumbent LEC would nonetheless be reluctant to enter the carrier access market and

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fee. Therefore, for high-volume customers (whose calling exceeds the call allowance), the total monthly cost can increase with volume, while under the flat-rated wireline plans that cost stays fixed. Low-volume customers, on the other hand, may select a PCS plan with a low access fee that provides enough of a call allowance to cover their calling needs and benefit from a total monthly cost that is below those of comparable wireline plans. In PCS' favor are also some other features: (i) a customer can call both local and more distant areas (typically well beyond intraLATA toll zones) all at the same per-minute rate; (ii) PCS telephones are lightweight, portable, and have very good sound quality; and (iii) PCS provides several optional features and are frequently dual mode or capable of receiving data.

face the possibility of competing against prescriptive prices set below any efficient firm's true economic costs. Prescriptive access charge reductions provide poor signals to potential entrants because such prices do not reflect their full economic costs. In addition, competitive entry is distorted by regulatory artifacts such as the averaging of prices across urban and rural areas. Sufficient pricing flexibility to adapt access pricing structures to customers' preferences would increase economic welfare and foster efficient competition far more than an across-the-board non-economic access charge reductions imposed by prescriptive regulatory fiat.

39. Finally, it is worth recalling that consumers only benefit from access charge reductions if long distance carriers pass through those reductions in the form of lower prices. As the Commission has noted recently,[32] there is substantial evidence to indicate that such price reductions, if passed through at all, are not being passed through completely or to all customers.[33] Consequently, the potential welfare gains from prescriptive reductions in access charges trumpeted by the IXCs are overstated.

F. The direction charted by the FCC is correct and should be sustained

37. The direction set by the *Access Reform Order* reflects a host of correct and enlightened choices by the FCC:

1. The FCC acknowledges that access and universal service reform must proceed apace and that both must be coordinated with its current price cap regulation of the major ILECs.

2. The FCC is willing to delay the outcomes that MCI and other IXCs desire so much—reduction of access charges to economic cost—in order to get the sequence of events right. Any prescription of access rates to cost immediately would only upset the finely

[32] FCC Chairman William E. Kennard recently referred to "the growing body of evidence that suggests that the nation's largest long distance companies are raising rates when their costs of providing service are decreasing.," letter to Bert Roberts, CEO of MCI (February 26, 1998).

[33] Recent evidence based on a survey of residential long distance bills shows that the changes in level and structure of access charges in early 1998 were not passed through in the form of lower average revenue per minute charged to residential customers. See P.S. Brandon and W.E. Taylor, *op. cit.*

tuned access and universal service reform process, hurt ILECs economically, and create unnecessary rate shock.

3. The FCC recognizes the value of price cap regulation in being able to both bring down access charges over time and induce ILECs to become more efficient and productive.

4. The FCC also recognizes the value of not abusing price cap regulation through unjustified imposition of unwarranted policy-based X-factors or preventing the ILECs from earning, by dint of their efforts to become more efficient, returns in excess of 11.25 percent.

No unanticipated events have transpired in the past year, and these choices remain just as valid today.

40. The FCC's faith in market mechanisms is more than doctrinaire; as competition comes to telecommunications markets, microregulation will become increasingly unworkable. Market mechanisms are far better at "revealing" costs and "choosing" technologies than a regulatory agency that may not have all the information it needs. Also, reliance on market mechanisms reduces the probability and frequency of costly litigation and regulatory delays. Having adopted such a path, any radical change of direction midstream, *e.g.*, a return to more prescriptive regulation, would generate business risk and uncertainty and adversely affect the competitive momentum that the FCC so desires to build. By staying true to the vision articulated in its Access Reform and Universal Service Orders,[34] the FCC will ensure that change will come to telecommunications, particularly in the markets for local exchange and exchange access services, but at a pace and in a sequence that promotes the sometimes conflicting interests of all competitors, not just of a select few.

III. CHANGES TO THE PRODUCTIVITY OFFSET

41. In May 1997, the Commission adopted a permanent price cap plan with a productivity offset of 6.5 percent, modifying the value of the X-factor in its plan for the second time in

[34] *Access Reform Order* and *In the Matter of Federal-State Joint Board on Universal Service*, FCC 97-157, Report and Order, CC Docket No. 96-45, adopted May 7, 1997.

seven years. While the theory of price cap regulation requires that the productivity offset be treated as a fixed target, fine-tuning and frequent reviews emphasizing accounting earnings will foster a connection between measured costs and the price cap index which would threaten the incentive structure of the Plan. As the Commission observed (essentially twice) in the Fourth Report and Order:

> We plan to focus in our next performance review on ensuring, to the extent possible, that we do not substantially undermine each price cap incumbent LEC's incentives to improve its efficiency. For instance, we would plan to make adjustments based on demonstrated industry-wide performance or other generic factors, rather than adjustments that are tied to a particular price cap incumbent LEC's interstate earnings.[35]

It is important that the Commission keep these plans in mind as parties update and refresh their arguments concerning possible changes to the industry value for X.

A. The productivity offset has performed as anticipated.

42. The initial purpose of shifting to a price cap regulatory regime was to improve the incentive effects of rate-of-return regulation and to begin a transition toward a regulatory system that was compatible with competition. As customers find alternatives to ILEC carrier access services, competitive forces should replace regulatory forces in controlling prices. During this transition, price cap regulation should be as competitively neutral as possible, neither advantaging nor disadvantaging regulated firms in competition with incumbents, and for those services and geographic areas where actual and potential competition disciplines the market price, price cap regulation is intended to transition away. In this evolving regulatory plan, the productivity offset, X, is designed to ensure that—on average—the LECs' access prices fall at approximately the rate at which the unit costs of an efficient LEC can be expected to fall.

43. As shown above, price cap regulation has reduced access charges in general, and per-minute switched access prices in particular, at an impressive rate. Such performance is all the more

[35] Fourth Report and Order, ¶¶ 167 and 180.

remarkable because a large component of access charges explicitly does not represent recovery of the cost of carrier access services but rather a contribution flow to offset costs of basic exchange service. Reduction or removal of this component of access charges is not intended to take place through higher LEC productivity gains but rather by shifting cost recovery through the Commission's universal service fund. In addition, these price reductions took place during a period in which the ILECs incurred increased investment and operating expenses to implement the network rearrangements and unbundling required by the Act. In sum, the performance of the productivity offset in the LEC price cap plan has met expectations, and there is no compelling reason to abandon the market-based approach on productivity grounds.

B. Updates of the FCC's method for calculating X produce lower results.

44. In its *Fourth Report and Order*, the Commission took X to be a short-term (1986-1995) average of the sum of annual total factor productivity growth for the LEC industry and the difference between the annual input price growth rates for the industry and the U.S. economy. Using publicly available data, the Commission determined a likely range of X values from 5.2 to 6.3 percent and selected 6.0 because of an upward trend in measured X towards the end of the period. To that value of the historically-achieved X, the Commission then added a consumer productivity dividend ("CPD") of 0.5 percent "to ensure that increased benefits from the increased productivity we expect from incumbent LECs flow through to price cap customers."[36] The permanent value of X was thus set at 6.5 percent, and the current *Public Notice* invites parties to update that record.

45. When the method used to set X in the Fourth Report and Order is updated, 1996 and 1997 values of X are lower than the X values calculated for earlier years, and averages of X over recent periods are lower than those used by the FCC to support its historical estimate of 6.0

[36] Fourth Report and Order, ¶¶ 137-141.

percent.[37] Thus, if a change were to be made to the target value of X based on the FCC's method and updated numbers, it would have to be reduced: the average historical value of X would be lower and, as discussed below, the CPD of 0.5 percent would no longer be applicable.

C. Changes in the access charge structure make an historical industry productivity target more difficult to achieve.

46. It is a mathematical fact that reducing the margin from high-growth services—while increasing margins on low-growth services—necessarily reduces both measured productivity growth and the ability of the firm to maintain earnings while reducing the overall level of prices. Under the Commission's new access charge structure, which recovers more costs from access line-related services and fewer costs from usage-based services, historical productivity targets will be more difficult to attain. Offsetting this effect, as the Commission observed in the Fourth Further Notice (¶¶ 128-129), is the stimulation effect on the demand for carrier access services stemming from lower access charges and lower toll rates. However, two features of the access and toll markets mitigate this effect.

47. First, unless access charge reductions are passed through to long distance customers, there will be little stimulation in the demand for access services. The market demand for switched access service is derived from the demand for long distance service, so unless access price reductions result in toll price reductions, there will be little demand stimulation from an access price reduction.[38] Second, even if access charge reductions are passed through in lower long distance rates, the toll demand stimulation will be small in relation to the access charge reduction. Because access costs amount to about 40 percent of the cost of toll, a 10 percent reduction in the price of switched access—if fully passed through—would amount to only about a 4 percent reduction in toll prices. A reduction in access prices will certainly cause

[37] Frank M. Gollop, "Replication and Update of the X-Factor Constructed under FCC Rules," Attachment E to the "Comments of the United States Telephone Association," CC Docket Nos. 96-262, 94-1, 97-250 and RM-9210, October 26, 1998.

[38] As competitors enter the access market and as IXCs engage in self-supply of access, the price elasticity facing individual firms will become larger.

access revenue to fall and will stimulate only a modest increase in usage. Moreover, in the future, as access prices fall relative to toll prices, the share of access costs in toll revenue will fall, and the price elasticity of the market demand for access will consequently fall as well.

48. The Fourth Report and Order gives two reasons why the Commission expects the price cap LECs to be able to meet the target productivity offset of 6.5 percent, despite the fact that 6.5 percent exceeds the Commission's estimate of the historical X the industry has been able to achieve. First, under historical price cap regulation with sharing, LECs may not have reduced prices as much as they reduced their costs, and because lower prices would have led to demand stimulation, higher output growth and the realization of additional scale economies, historical productivity growth underestimates achievable productivity growth under improved regulation. Second, the Commission expects the access price reductions in its *Access Reform Order* to "greatly stimulate usage" which, in turn, it expects "to lead to more efficient use of the LEC network."[39]

49. The problem with both of these arguments is that they depend on demand stimulation from reduced switched access charges. To the extent that access charge reductions are not passed through in lower toll rates, additional stimulation will not occur, and additional productivity growth will not be readily forthcoming. We recently examined the effects of the access price reductions in the FCC's *Access Reform Order* on residential long distance prices, using a statistically valid sample of customer bills.[40] Despite the January 1998 reductions in access charges, average revenue per minute for residential long distance customers increased, so that the Commission's expectation that its *Access Reform Order* would "greatly stimulate usage" will not be realized, and the productivity growth stemming from that stimulation will also not occur.

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[39] Fourth Report and Order, ¶ 142.

[40] See P.S. Brandon and W.E. Taylor, *op. cit.*

D. The consumer productivity dividend is no longer relevant.

50. At the beginning of price cap regulation, the role of the CPD was to ensure that consumers would receive a reasonable share of the increased productivity growth realized by the movement from traditional rate of return regulation to price cap regulation.

> Price cap regulation is also intended to generate incentives and opportunities for LECs to achieve still higher productivity growth. In the LEC Price Cap Order, we mandated a price cap index that includes at least a 3.3 percent productivity offset each year, based on two Commission staff studies which, when averaged, indicated a historical productivity growth of 2.8 percent, and a consumer productivity dividend (CPD) of 0.5 percent. [ftn: LEC Price Cap Order, 5 FCC Rcd at 6796. A short-term study examined productivity trends in interstate access from 1984 to 1990, and a long-term study covered interstate charges generally for the years 1930 to 1989. The 0.5 percent CPD was then added to assign the first price cap productivity gains to customers in the form of lower rates.][41]

In addition, since the CPD remains as a component of the X-factor year after year, the Commission must believe that more efficient regulation makes possible a permanent increase in achievable annual productivity growth, not merely a one-time change in productivity.

51. In the Fourth Report and Order, historical productivity growth for the LEC industry is measured over the 1986-1995 period; using currently available data, updated historical productivity growth is measured over the 1986-1997 period. The Commission's preferred point estimate of the historical X was taken from averages of more recent periods and adjusted to account for an increasing trend at the most recent end of the period. A heavy weight in this calculation is given to short-term, recent experience. That experience is largely taken from periods under price cap regulation, and it also includes the effect on productivity growth of moving from rate of return to price cap regulation and from price cap regulation with sharing to what the Commission characterizes as "pure" price cap regulation. As no shift to a more

[41] *In the Matter of Price Cap Performance Review for Local Exchange Carriers*, First Report and Order, CC Docket No. 94-1, released April 7, 1995, ¶ 99.

efficient form of regulation is contemplated in the *Public Notice*, there is no additional productivity growth from regulatory reform to share with consumers.

IV. PRICING FLEXIBILITY FOR CARRIER ACCESS SERVICES

52. Assessment of the Commission's market-based approach to access charge reform requires some experience with competition under pricing flexibility both to judge its effectiveness and to prescribe—if necessary—changes to the plan. As the Commission observed in its *Access Reform Order*:

> [I]t would be imprudent to prejudge the effectiveness of those measures at creating competitive local markets. Rather than ignore or interfere with the effects of this developing competition on prices for interstate access services, we find that the public interest is best served by permitting emerging competition to affect access charge rate levels. In addition, the experience we gain from observing the effects of emerging competition on interstate access services will permit us more effectively and efficiently to implement any prescriptive measures that may be needed in the future to ensure that interstate access services remaining subject to regulation are priced in accordance with the forward-looking economic cost of providing those services.
>
> Economic logic holds that giving incumbent LECs increased pricing flexibility will permit them to respond to competitive entry, which will allow prices to move in a way that they would not have moved were the pricing restrictions maintained. This can lead to better operating markets and produce more efficient outcomes. Deregulation before competition has established itself, however, can expose consumers to the unfettered exercise of monopoly power and, in some cases, even stifle the development of competition, leaving a monopolistic environment that adversely affects the interests of consumers. Therefore, it is important that we design our market-based approach carefully. We must, among other things, decide which, if any, of the rules setting forth specific competitive triggers and corresponding flexibility as proposed in the NPRM we should adopt. We will resolve these issues in the subsequent report and order in this docket. [¶¶ 269-270]

The industry still awaits that pricing flexibility decision, and, to date, we have had no experience with competition for access services under pricing flexibility. Since significant pricing flexibility has not been permitted for switched access services, there is little evidence

that is useful for measuring the effects of competition on unregulated (or less regulated) access prices.

53. The *Public Notice* calls attention to two specific pricing flexibility proposals on the record that request phased relief and criteria to evaluate the degree of competition that vary by service. The *Access Reform Order* observes that:

> A market-based approach will permit and, indeed, require us progressively to deregulate the access charge regime as competition develops. In a subsequent order, we will examine specific issues concerning the timing and degrees of pricing flexibility. That order will identify the competitive triggers that must be met to justify relaxation of specific regulatory constraints [¶ 49]

In previous reports filed with the Commission over the past four years, Richard Schmalensee and I have pointed out the need for pricing flexibility for access services as access markets are opened to competition, and some of our ideas—particularly regarding triggers—have evidently resonated with the economic thinking at the Commission.[42] In our work, we have identified several simple pricing flexibility principles that should guide the Commission in its efforts:

1. Market forces are vastly superior than reliance on regulation to determine efficient levels of output, investment and price, and the Commission should primarily rely on them. Imperfect competition generally beats imperfect regulation.

2. It is essential to reduce unnecessary asymmetric obligations when the market is *first* fully opened to competitors—*i.e.*, even when the incumbent firm retains too much market power to allow deregulation.

3. The Commission should pursue a policy that rewards efficiency, not one that protects particular competitors.

[42] Richard Schmalensee and William Taylor: "Comments on the USTA Pricing Flexibility Proposal," filed as Attachment 4 to the United States Telephone Association Comments, CC Docket 94-1, May 9, 1994; "Reply Comments: Market Analysis and Pricing Flexibility for Interstate Access Services," filed as Attachment 3 to the United States Telephone Association Reply Comments, June 29, 1994; "Economic Aspects of Access Reform," CC Docket No. 96-262 et. al., filed on January 29, 1997, rebuttal filed on February 14, 1997; "The Need for Carrier Access Pricing Flexibility in Light of Recent Marketplace Developments: A Primer," *ex parte*, CC Docket No. 96-262 et. al., filed on January 21, 1998.

4. Prices must be permitted the freedom to reflect differences in costs and conditions in specific markets.

54. In addition, our work and experience in classifying and deregulating telecommunications services has emphasized one essential piece of practical wisdom. Competitive triggers that require measurement of the degree of competition in particular markets are unsatisfactory because the degree of competition cannot be measured sufficiently accurately and unambiguously. If a full-scale market power study must be performed for every service and geographic market in which pricing flexibility is requested to meet competitive threats, the process will be unsatisfactory. Decisions will be too slow and too unpredictable, and consumers will not benefit from the additional competition that incumbent regulated firms can bring to the market. Rather, the events that trigger progressive deregulation of services must be unambiguous and observable even at the risk of imperfectly detecting the presence or absence of residual market power.

55. Over the years, the incumbent LECs have jointly and individually made pricing flexibility proposals along these lines to the Commission. The industry pricing flexibility plan submitted by USTA in this proceeding is consistent with these economic principles. First, the markets in question are measured in practical correspondence to economic geographic and service markets. Geographically, application would be made for individual MSAs, groups of contiguous MSAs or a LATA. Services distinguish between transport and switched access with the latter subdivided between services for residential and single line business and multi-line business customers. Within this market structure, progressively stringent competitive events trigger progressively greater degrees of pricing flexibility in three phases.

56. Classification in Phase 1 recognizes the presence of competition in a market area but implies no presumption that competitive forces are adequate to prevent exercise of market power or anticompetitive pricing. The trigger for this phase is the approval of an interconnection agreement or Statement of Generally Available Terms for interconnection combined with the presence of competitors having customers actually using alternative transport or switched access services. Flexibility in Phase 1 generally removes the important

regulatory impediments an ILEC faces in attempting to match competitors' service offerings and prices, including streamlined new services regulation, price deaveraging and increased ability to offer volume and term pricing, individual contracts and promotional pricing. Because the services remain under price caps, this added flexibility cannot be used to exercise market power.

57. While the presence of competition in a market area does not necessarily imply that any particular competitor may succeed or that competitors in general will ever supply a significant fraction of demand. What this event does signal is the start of competition, and it is when competition starts—not when competitors succeed—that the incumbent firm must be permitted to adjust its prices and products to the new environment. Otherwise, the success or failure of the observed entry will be affected by the asymmetric regulation of the incumbent, the competitive process will be distorted and consumers will not necessarily be served by the most efficient supplier. Note that the trigger for Phase 1—approved interconnection arrangements and the presence of competitors with customers—is observable and unambiguous. A regulator need not hold contentious evidentiary hearings to determine if this condition is met, and—in stark contrast to market power-based standards— neither the entrant nor the incumbent LEC need second-guess the regulator's opinion of the evidence as to whether the competitive glass is half empty or half full.

58. Phases 2 and 3 progressively remove the remaining constraints on ILEC pricing imposed by the price cap structure. In Phase 2, the basket structure is simplified, the low-end adjustment mechanism is removed, and the productivity offset is set at inflation, effectively relying on competitive forces to pass through productivity gains in excess of the U.S. economy-wide average. Phase 3 removes services from price cap regulation entirely and thus requires confidence that market forces constrain the ability of the regulated firm to exercise market power. While Phase 2 retains a price cap, it still relies on market forces to pass through productivity gains in excess of the national average to access customers.

59. Triggers for classification of services as Phase 2 and 3 are increasingly stringent degrees of addressability: for Phase 2 relief, 25 percent of the ILEC's demand in the area must be

addressable through collocation arrangements, UNEs or alternative facilities, and classification as Phase 3 requires 75 percent addressability. In both cases, customers must actually be using the qualifying facilities.

60. Addressability is a reasonable trigger mechanism because it is observable, not manipulatable, and closely related to capacity which is frequently the preferred metric of market share used in evaluating market power in telecommunications markets.[43] Carrier access services are generally provisioned on high-capacity optical fiber networks whose physical capacity is essentially unlimited but whose ability to serve customers may be geographically constrained. The fact that a competitor's fiber ring in the financial district has spare capacity may not necessarily put direct competitive pressure on access services sold in an office park in the suburbs. However, once a carrier collocates or purchases UNEs in a wire center, it can reach all customers in that wire center with little expenditure of sunk costs. Hence, the fraction of addressable demand in the market is a reasonable measure of the ability of competitors to expand demand to render the exercise of market power unprofitable to the regulated firm. While there are no bright lines in economic theory to identify whether 25 percent or 75 percent addressability would render unprofitable a small but significant permanent price increase, our previous work suggests that a 25 percent addressability standard—then based entirely on facilities-based competition without collocation or UNEs—would correspond to a structural measure of sufficient competitive pressure that price cap regulation would no longer be required to constrain prices.[44] If that perception was reasonably accurate four years ago, the more stringent proposal today, coupled with the procompetitive initiatives in the Telecommunications Act and the Local Competition Order, will be sufficient to flow-through productivity gains in excess of the national average to customers of Phase 2 services and protect customers of Phase 3 services from the exercise of market power.

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[43] *In the Matter of Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier*, FCC 95-427, Order, released October 23, 1995.

[44] Richard Schmalensee and William Taylor: "Comments on the USTA Pricing Flexibility Proposal," filed as Attachment 4 to the United States Telephone Association, Comments, CC Docket 94-1, May 9, 1994, pp. 32-39.

V. CONCLUSIONS—THE ROLE OF THE UNIVERSAL SERVICE FUND

61. Like Sherlock Holmes' dog that failed to bark, the key element in the *Public Notice*—the Universal Service Fund—is conspicuous by its absence. There are many moving parts in the reform of carrier access charges: changes in rate structure to align cost recovery with cost causation, possible adjustments to the target rate of productivity growth, changes in the competitive landscape from provision of unbundled network elements and resale and, finally, shifts in the remaining implicit subsidies supporting universal service. In this regulatory stew, the level and structure of the Universal Service Fund and the relationship between the federal and state universal service funds is a critical ingredient of any access charge reform proposal.

62. Carrier access charges have been set explicitly to provide contribution towards subsidized basic local exchange services, stemming from the "Pure 1" and "Pure 2" debates in Docket 78-72 over two decades ago. That subsidy support is "implicit," *i.e.*, it is neither readily visible nor quantifiable. From an economic standpoint, any such contribution forces price above the underlying economic cost and generates economic efficiency losses. ILECs—the providers of access—lose whenever uneconomic bypass of switched access occurs simply because the price of access is prevented by universal service support from coming closer to the true economic cost of access. IXCs—the users of access—and their customers lose to the extent that the universal service support in access charges inflates long distance rates and, therefore, suppresses demand for long distance service.

63. Reductions in carrier access charges, offset by increases in basic local exchange rates are generally acknowledged to move the rate structure in a direction that greatly increases economic efficiency and—under the assumption that access charge reductions flow through to lower toll rates—has benign or positive effects on the fraction of households that subscribe to telephone services.[45] Lower toll rates move price towards incremental cost and greatly expand the demand for the service; higher basic exchange rates also move price towards cost but have

[45] J. Hausman, T. Tardiff and A. Belinfante, "The Effects of the Breakup of AT&T on Telephone Penetration in the United States," *American Economic Review*, 83(2), May 1993, pp. 178-84.

little effect on the demand for access to the network. This reform was begun in 1985 when flat-rate residential SLCs were introduced, and it continued through 1989 as the SLCs were slowly raised to their current levels. The per-minute access charges paid by IXCs were sharply reduced, and the associated reductions in toll rates—whether or not they fully passed through the reductions in access charges—undeniably stimulated an unprecedented growth in interstate calling. Most proponents of efficient telephone pricing cite this transition and its immense welfare gains as a watershed event in U.S. telecommunications regulation.[46]

64. Somewhat less efficient than this first-best rate rebalancing solution has been the Commission's recent effort to better align cost recovery with cost causation: over time, moving various components of non-traffic sensitive costs away from usage-based recovery towards flat-rate end user charges (SLCs) and flat-rate carrier charges (PICCs) that may ultimately be recovered by the carriers through efficient flat-rate end user charges.[47] While PICCs are assessed on a flat-rate basis, they are not directly assessed on the cost-causer (i.e., the end user), and not all access providers incur the costs that PICCs recover or are obliged to charge them to their customers. A third solution takes the non-traffic sensitive costs (Carrier Common Line, residual Transport Interconnection Charge and retail marketing expenses) that cannot be recovered in flat-rate charges to the cost-causer (i.e., higher basic exchange rates or SLCs) and recovers them through an assessment on all telecommunications services. In this proposal, support for universal service is competitively neutral since all users of the public switched network pay proportionally to keep basic exchange rates and SLCs at an acceptably low level, but it sacrifices some efficiency by recovering support from more elastically-demanded services.

65. Realizing the inherent linkages among the current system of interstate access charges, the current mode of supporting universal service, and the role of price cap regulation in disciplining

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[46] See, *e.g.*, L.J. Perl and W.E. Taylor "Telephone Penetration and Universal Service in the 1980s," in B. Cole (editor), *Divestiture Five Years Later*, Columbia University Press, New York, 1989.

[47] *Access Reform Order*, ¶¶ 53-66.

access rates, the FCC has laid out a multi-phase plan of reform which ensures that elements of all three are coordinated as reform goes forward. Breaking a link anywhere in this three-way chain would only end up disrupting the rest of that reform plan. Examples of such breakage would include singling out access rates for prescriptive regulation, or modifying some of the critical parameters of the price cap plan in place, before universal service reform has been completed and all implicit subsidies have been moved out of service prices. Upsetting the balance in such a complicated but essential undertaking may well serve the IXC interests for now, but it will prove injurious to carriers, customers, and the future of telecommunications itself.

66. Recognizing the adverse economic consequences of internal funding of implicit subsidies, the Act decreed that all support for universal service be made explicit—*i.e.*, de-linked from prices of services like switched access—and raised separately from a universal service fund in which all telecommunications carriers must participate. The FCC, in turn, took note of this connection and spelled out policy directions that clearly recognized the link between reform of the present access charge system and reform of the manner in which universal service is supported.[48] That is, while the FCC accepted the common view that access charges exceed their costs at least partly because of embedded subsidies for universal service, it also determined that reform of the access charge system cannot proceed on a separate track from reform of the universal service support program. Therefore, any prescriptive move to force ILECs to reduce their interstate access charges to economic cost would not only be premature but also violate the FCC's own policy of coordinated reform of access charges and universal service.

[48] Access Reform and Universal Service Orders.