They are providing the "stick" of market discipline to induce LECs to upgrade their networks as a means of remaining competitive. It is equally important that the Commission now recognize the added business risk and provide the "carrot" of adequate market returns to induce investors to provide the necessary capital.

The NPRM requests comment on a broad range of issues -- ranging from very broad to quite narrow, and from those requiring immediate action to those that may be deferred somewhat. The Commission's findings on each issue and subissue, and subsequent rule changes based on those findings, carry with them the potential for significantly changing the incentives of LECs to invest. However, some issues have more clear and more substantial implications for investment than others.

Based on the analysis above of the relationship between regulatory structures and private sector investment incentives, the following measures appear to offer the Commission the greatest opportunity to attract and encourage capital market support for accelerated investment by Price Cap LECs in local telephone networks.

1. Adopt a price cap reform package designed to stimulate LEC investment;
2. Provide pricing flexibility permitting competitive market outcomes;
3. Eliminate regulatory barriers to new service introduction;
4. Eliminate the sharing mechanism; and,
5. Conform the regulatory transition to current marketplace developments.

Adopt a price cap reform package designed to stimulate LEC investment. Although the Commission has the ability to induce more rapid rates of infrastructure development, the signals it has sent to the financial community about its willingness to make the necessary regulatory choices have not been entirely clear. In some senses they have been discouraging.[35] The Commission can and should eliminate this uncertainty by changing the price cap structure in ways designed to give a clear signal to LEC investment decision-makers and financial investors in LEC assets that federal policy will be designed to encourage the investment required to accelerate

[35] The following observation suggests the mixed reaction of the financial community to the interest in Washington in telecommunications infrastructure: "....the Clinton Administration's interest in the information superhighway has suggested to some that the companies would be very well positioned to capture additional revenue opportunity, while others have determined that the costs and the subsidies necessary to expand the reach of the superhighway to the masses represent a risk." Paul Aran and W. Todd Scott, "Telecommunications", Bear Stearns, February 7, 1994 at p. 1. A related observation concludes that: "In order to develop Vice President Gore's vision of a national broadband network, the BOC's must have the ability to make decisions on sound economic principles." Elaine Altman, "A View from Washington", Furman Selz, Inc., p. 1, February 28, 1994; See also, Guy W. Woodlief, "Storm Clouds on the Horizon: A Local Exchange Industry Overview", Dean Witter Equity Research, December 30, 1993 at pp. 5-17 for a very instructive scenario of the possible development of local market competition and the risk implications for the LECs.

development of the information superhighway.[36] Since the specific levers on LEC investment held by the Commission operate through anticipated regulatory risk, growth and earnings, the means available for the Commission to stimulate LEC investment require providing for market-responsive, pricing flexibility; eliminating barriers to service diversification; eliminating the remnants of rate of return regulation; and, reforming regulation expeditiously to reflect current and expected market changes.

Provide for greater pricing flexibility. A major deterrent to investment generally and to LEC investment more specifically is business risk. And, as discussed above (pp. 10-12), restrictions on the ability of incumbents to respond competitively to new entrants contributes to business risk which, in turn, creates upward pressure on capital costs for incumbents and, other things equal, tends to discourage investment by incumbents. The disincentive effects will be especially strong, if the restrictions on competitive price responses are expected to endure. What is called for is a regulatory policy that gives LECs the latitude to reduce rates on services that heretofore, in a monopoly environment, have been held uneconomically high to support other policy goals.

For example, one effect of the rules respecting the composition of baskets and bands is to increase unnecessarily the degree of business risk faced by LECs by restricting LEC rate responses to market developments. A related effect is to diminish investors' expectations about the prospects for growth of revenue from PTN investment. Both are true to the extent that this element of price caps does not properly reflect the shifting marketplace boundaries dividing monopoly and competitive services and unduly restricts the ability of incumbents to respond in an economically rational and timely way to changes in an increasingly competitive marketplace.

Competitive entrants are, of course, well aware of the higher operating margins on high density, low cost traffic streams, and they have targeted their network designs and marketing plans accordingly. To the extent that managers and investors perceive price cap baskets and bands as unduly exposing that traffic to competitive diversion they will perceive that as additional risk and loss of future growth opportunities. Other things being equal, the result will be to reduce the attractiveness of additional investment in the PTN and to divert scarce capital to more attractive opportunities elsewhere.

Eliminate the sharing mechanism. The sharing mechanism relies on a form of rate of return regulation and introduces the very types of inefficiency incentives that the price cap plan was designed to eliminate. The sharing mechanism ensures that

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[36] In his work on the sources of competitive advantage among trading nations and in the specific context of a discussion of what the central government can, and cannot do, Michael Porter concludes that, "...one of the government's most important roles is signaling." Michael E. Porter, The Competitive Advantage of Nations, (New York: The Free Press, a Division of Macmillan Company, 1990), p. 681.

incentives will be distorted. The particular form of the sharing mechanism determines a) the earnings level at which the disincentives will be realized and b) the strength of the disincentives, as they vary with the proportions to be shared. Adjusting the sharing mechanism cannot eliminate the disincentives, but can only vary their strength and trigger points. Thus, the sharing mechanism undercuts the very fundamental goal of price caps, which is to increase efficiency incentives.

To enforce this part of the price cap plan, the Commission chose to use an overall earnings on rate base standard -- which standard is completely inappropriate and gives misleading indications of value in the context of current competitive and capital market trends.[37] More specifically, given the gap between accounting depreciation rates permitted by the Commission and the actual rates of economic depreciation, the use of earnings estimates based on accounting data is arbitrary. The current depreciation allowances prescribed by the Commission lead to a systematic and very substantial overstatement of actual LEC earnings.[38]

Using those exaggerated earnings to mark the trigger points for the current sharing mechanism means that the disincentive effects of rate base, rate of return regulation become operative for the LECs well before their earnings cover the cost of capital. Thus, while the sharing mechanism appears on its face to protect against unreasonable earnings, its practical effect, in the context of Commission refusal to permit economically valid depreciation rates, may be to force earnings reductions

[37]This conclusion is clearly supported by the following statement from Wall Street: "If the technology that's available today to large sophisticated users is to become available to the community at large, the Bell Operating Companies, which will certainly play an important role in this future world, will need the open-ended freedom to earn profits on capital or equity in return for assurances that plain old telephone service (POTS) remains reasonably priced. In our opinion, the economic rationale behind traditional ROR regulation has now been eliminated, and Commissions are encouraging investments in state-of-the-art technology. Operating under a traditional cost-plus system promotes waste... Traditional ROR regulation, which was intended to produce fair and efficient allocation of resources, today produces neither." Elaine Altman, "Competition: The Brave New Regulatory World; Changing the Regulatory Structure", Furman Selz, March 1, 1993, (p. 1). Further on Altman continues, "As the financial risks become greater, we envision a vast improvement in regulatory structures that will allow the telephone companies to boost their profitability. As their rates of return increase, so will their investment, as well as their competition." (p. 6)

[38]The potential for distortions to reported earnings traceable to the use of uneconomic depreciation schedules is not trivial. Calculations of LEC earnings using market-based depreciation schedules used, for example, by AT&T, indicates that LEC earnings on rate base may be overstated by 300 hundred basis points or more. (See Comments of the United States Telephone Association, Section II-B-4.) To the extent that administratively determined depreciation rates inadequately reflect economic, market-driven rates of obsolescence, LEC earnings will be overstated, future users will be forced to subsidize present users, book values will be overstated, and investors will regard the companies' securities as burdened with regulatory risk and thereby require higher returns. Most securities analysts believe that the industry's depreciation rates are too low and do not reflect accurately prevailing technological opportunities and market forces.

before competitive market rates of return are realized and the cost of capital fully recovered.[39]

The sharing mechanism also leads to increased risk and will lead carriers to forego investment opportunities that would contribute to the public interest and that they otherwise would undertake.[40] The current sharing provisions reduce the expected return from risky investments and further dampen investment incentives. The greater the uncertainty of the investment outcome, the greater the investment disincentive effects of the current sharing arrangement. This disincentive effect is especially troublesome, given the higher risk certain to be associated with future investments in the local exchange network.

The sharing mechanism is paired with the low end rate adjustment mechanism and they should be eliminated together. Eliminating both the downside protections and upside constraints on earnings will impose symmetric incentives and responsibilities on stockholders. Of course, eliminating the downside protection for earnings without providing upside opportunities would be tend to discourage risk taking and investment in the PTN.

<u>Eliminate regulatory barriers to new service introduction</u>. Current processes for regulatory review of new service offerings are inadequate and given to unnecessary regulatory delay. Those processes invite and encourage "gaming" the regulatory system by both users and alternative, unregulated services providers. Users' interests are not even arguably served by a process that denies or postpones the introduction of services on the strength of strike petitions alleging one or another "technical" infirmities in new service proposals.

These regulatory delays are of more than passing interest to investment planners within the local exchange companies and to holders of LEC securities, inasmuch as they demonstrably reduce the expected value of new investment in the PTN by their deleterious impact on carrier risk and growth. Moreover, deferring the date of introduction of a given new service will in all cases reduce the expected value of the contribution of that service to the capital cost of the common plant. In the

[39] To the extent that access charge rate reductions triggered by the sharing mechanism are not passed through to end users by the IXCs, the effect of the mechanism is to shift earnings from LEC shareholders to IXC shareholders with no clear public policy reason or benefit for doing so.

[40] Steven R. Yanis of Kidder, Peabody, Inc. observes: "In an earnings sharing plan, the [regulator] gives the RBOC some additional incentive by introducing a sharing range, but the RBOC is still subject to rate base, depreciation rate and ROR regulation." Phone Book, June 23, 1993, p. 18. Further on: "With CAPs, CATVs, PCS and IXCs coming after RBOCs' business, we believe there is more of a case than ever to grant some federal regulatory relief to the RHCs." (p. 19)

limiting case, the delay may be sufficient to undermine entirely the economic basis for introducing the new service.[41]

Given demand-based uncertainty about future revenue streams from new digital, broadband services, it is critical to the case for making such investments that investors be assured of timely introduction of new services in response to market forces. Continued regulatory delay in the rate of new service introduction will only weaken the basic business case for the investment.

Conform regulatory transition to current and anticipated marketplace developments. The Commission set out for comment several transitional issues. For present purposes, the key ones are those related to the pace and character of changes in regulation of incumbents in response to competitive market developments.

From a capital markets perspective, the future of competitive market risk is now. Many financial investors and investment planners within the companies presently believe that regulators will handicap efforts of incumbents to reprice services and otherwise to respond to market changes in ways that are regarded as evidence of healthy competition in other unregulated sectors.[42] For so long as that continues, there will be significant pressure from capital markets and negative incentives for LECs to

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[41] We can get a rough indication of the importance of regulatory delay in the introduction of new services by recalling that the decision to invest depends on the expected net present value of the associated future cash streams. The sooner the cash is received, the greater its present value. Deferring cash receipts reduces present value by an amount related to the discount rate and the expected life of the service over existing equipment. To illustrate, suppose the discount rate is taken to be 15%, the life of the service/equipment is seven years, and future net returns are expected to be evenly distributed over each of those years. In that event, a delay of one year would reduce the present value of that stream of returns by more than twenty percent. This may well understate the reduction in net present value, inasmuch as a) delays may also reduce the level of the expected revenue stream as a result of customers finding and becoming attached to other alternatives, and b) the proper rate of discount may increase with the length of expected delay. In any event, regulatory delay reduces the expected value of service innovation dramatically; it reduces the rate of new service introduction and increases its risk to incumbents; and, it could very well lead to decisions not to introduce services that otherwise would have been made available.

[42] The following are representative comments that reflect analysts' concerns about the ability of LECs to respond to competition: "...we believe true open competition would be a net positive for the RHCs." (Steven Yanis, Kidder Peabody, January 18, 1994, p.2); "...while regulation has been improving, the Bell RHCs are still 'handcuffed' in their ability to compete with flexible pricing. This has created a significant opportunity for competitors to 'skim the cream'." (Stephanie Comfort, "The Bell Regional Holding Companies: Managing through a Difficult Environment", Morgan Stanley, July 16, 1993, p.2); "...Regulation has skewed the playing field in traditional telephony against the RBOCs, by holding back competitive pricing" (Paul Aran, "Telecommunications Industry: Cutting through the Confusion", Bear Stearns, February 14, 1994, p.2); Further, "As network capacity continues to grow, companies must increasingly differentiate their products to sustain their own network's utilization. Providing new products and services is one way to do this" (Aran, p.2); and, finally, "While technology, like the market, affords opportunities, regulation has often limited the potential for benefits accruing to the RBOCs and...their shareholders" (Aran, p.8).

risk substantially greater additional capital to accelerate the development of the infrastructure and the introduction of new services.

Adoption of transitional rules should be forward looking. The use of backward looking market share estimates to trigger relaxation of regulatory constraints on pricing or other forms of competitive market response is without foundation in economic or financial theory. But, more importantly for the Commission's concern in this proceeding, it is manifestly inconsistent with the way investors look at the business. Investors look forward and discount expected future events. They look at what is likely to occur to future revenue streams, not what has already happened. Yesterday's events, measured by market share estimates, were long ago discounted by forward looking analysts. Yesterday's events, of the kind reflected in measures of market shares, have relevance, if at all, only in confirming expectations that have already been reflected in the marketplace. If competitive markets are to work, users and consumers must be confronted with choices among alternative sources of supply whose offerings reflect true differences in price/performance packages and not a vaguely understandable scheme of regulatory handicapping or market management.[43]

The Commission's resolution of these transitional issues will constitute a very powerful signal to investors about the manner, pace and character of infrastructure development envisioned by the Commission. These issues are very important features of the price cap plan. Investors outside the companies and investment planners inside will note carefully the way the Commission handles the transition to the fully competitive environment they all anticipate. Investors will carefully assess the extent to which market processes, rather than regulatory processes, are relied upon to guide the transition. Reliance on market processes will stimulate LEC investment. Continued reliance on regulatory constraints to manage competition by placing uneconomic constraints on incumbents, or potential new entrants, will dampen investment incentives and slow construction of the National Information Infrastructure.

MODIFYING PRICE CAPS CAN INDUCE INCREASED LEC INVESTMENT

The foregoing establishes the basis for two conclusions. First, changes in the Commission's regulatory programs, especially the form of price caps, will effect the level of LEC investment in the public network through their effect on the risks and returns anticipated by capital markets and company investment planners; and, second,

[43] It is instructive in this respect that the stock of MFS, a leading competitive access provider, is currently valued by the market in a multiple of revenue -- not cash flow, not earnings of which there are none, but a multiple of revenue. This may indicate investors believe that the MFS rate/service bundles are more attractive than those offered by incumbents. It may reflect the ability of MFS to serve only high density routes and high margin customers. But, it may also indicate that investors read the regulatory tea leaves and believe that MFS is going to be accorded regulation-based advantages in the marketplace for some time into the future. Investors are probably counting on the Commission to erect the kind of protective regulatory umbrella it has used in the interexchange market and for the Commission to adopt a market-share-loss test to trigger regulatory reform in the access market.

the specific price cap modifications urged in the United States Telephone Association filing will create stronger LEC investment incentives by reducing regulatory risk, enhancing opportunities for growth and eliminating unneeded regulatory constraints on the ability of LECs to earn returns commensurate with the market risks involved.

However, an important question remains: "How much additional investment will be induced?" The Commission is in a very influential position here. More than any other single force, it has the ability to unleash or restrain powerful market incentives inducing or impelling the LECs to accelerate and enlarge their investment programs and plans. The greater the regulatory incentive, the greater the likely acceleration in investment.

The past five years have been marked by both market and regulatory transition, and by great uncertainty about the future scale and scope of the LECs in meeting the nation's emerging and diversifying telecommunications needs. Much of the uncertainty has clear origins in federal and state regulatory policy processes which have collectively given intermittent "stop" and "go" signals to capital markets and investment planners. Policy makers have urged the companies to commit increasing amounts of risk capital to providing services beyond basic voice and slow speed data services, while frequently dampening the economic and financial incentives to do so in key regulatory and judicial proceedings.

Given the facts of regulation in recent years, apart from expressions of regulatory good intentions and desires, it has been difficult to develop a solid business case for LEC capital formation programs that go much beyond the requirements of the growth of plain old telephone services and incremental improvements to local exchange networks. Despite this uncertainty, LEC investment has increased in the past five years in ways and at rates commensurate with the requirements of good business judgment, responsive to the discipline of capital markets and consistent with the opportunities afforded in different regulatory venues. The throughput of the network, the only meaningful measure of the real value of investment, has increased very substantially over that period as a result of the addition of digital switches and fibre optical links.

How much additional investment will be forthcoming under the revised price cap program considered here? On the basis of my review of the evidence available on the relationship between price cap regulation, capital markets and LEC investment incentives, I have advised WEFA that the price cap modifications discussed above, if implemented, would be likely to stimulate LEC investment in the PTN by five percent in the first year and grow to a fifteen percent increase over the next ten years. That estimate may be too low. It is, however, clearly not unreasonable given the dramatically changed investment incentives that will accompany these price cap modifications.

This estimate of Commission-induced investment is fully consistent with the views and concerns expressed by expert industry investment analysts in the financial community. Investors have been sending clear signals to LEC investment planners that they are concerned with the increased risk and limitations on growth resulting from regulatory and market changes in recent years. More importantly, investors have indicated their troubling uncertainty about the adaptability of regulation to market changes and the extent to which future regulatory change will increase or decrease expected returns from LEC investment in the core networks. LEC investment planners have recognized and responded to those capital market signals by reflecting them in their network investment decisions.

A clearer, more affirmative message to capital markets that the FCC wishes to induce more LEC investment will be understood by investors and transmitted to management. Capital markets will encourage and support accelerated investment in local networks in response to such a signal.

CONCLUDING OBSERVATIONS

Decisions about how best to manage and distribute cash flow are made by LEC managers under conditions of substantial and increasing uncertainty about the likely payoff of different investment opportunities. The uncertainty derives from an array of technological, market and regulatory forces that are recognized and detailed in numerous Commission orders, as well as in the analysis of the experts paid to make recommendations about the financial future of the industry.[44]

In the current environment the array of investment opportunities has been expanded far beyond the choices available before divestiture and, indeed, before the initial LEC price cap decision. Unlike in earlier times when cash was routinely and without question ploughed back into the public network to provision services marketed under largely monopoly conditions, LEC management today observes other competitive (and for some applications superior) networks evolving. They also observe that regulation governing those increasingly competitive markets lags well behind the rate of both technological and economic change. Simultaneously, professional managers of LEC assets are presented with an increasingly attractive slate of investment opportunities outside the PTN, which opportunities offer both higher growth prospects and the promise of risk, sometimes lower, and frequently no greater than investment in the core, regulated business.

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[44] The Commission clearly recognizes the increased uncertainty in the Executive Summary of the NPRM. "Within the last few years...we have witnessed dramatic changes in telecommunications technology and markets...Yet these changes, important as they are, are only a prelude." In further discussions of industry change, the Commission notes: "Recent industry events suggest that in place of the traditionally separate markets and networks for local and long distance telephone service and for broadcast and cable TV, telecommunications appears to be evolving toward the transfer of all forms of information over interconnected digital networks." After citing several examples of related changes, the Commission concludes: "All these developments should be considered in determining what changes should be made to price caps." (p. 9)

It is no longer safe to assume that investment in the PTN will grow, or even be maintained at historic rates, without regard to the nature of the regulatory restraints and incentives embodied in the mass of federal and state rules and regulations governing the use of regulated telephone assets. There is no question that one very important effect of regulatory policy in recent years has been to increase market risk and reduce expected growth of earnings in the core, regulated business. Indeed, that's what competition is all about.

Competition policy is working. But, it is naive to expect the LECs to react in a business as usual mode, when both their regulators and their owners acknowledge that it is anything but business as usual. It is indisputable that responsible LEC managers will adjust their strategies and attempt to compensate for competition-induced changes in the value of the assets they manage. The simple arithmetic of all discounted valuation models leaves no doubt that the way to do so is to look for opportunities to increase growth and hedge the increased risk of the core business. That strategy generally fits the behavior of management in recent years.

While much has been written and said about the promise of new technologies and the array of new services that will be made available, the fact is that all such developments depend on the willingness of individual investors to risk their savings and wealth by making it available for investment in the necessary facilities. Many of the experts are telling them not to do it; or, not to do it without some changes in the way the assets are regulated by federal and state authorities. That is why price caps matter. Price cap reform is necessary to induce individuals to make available the risk capital necessary for LECs to help build the information superhighway.

ATTACHMENT 4

Comments on the USTA Pricing Flexibility Proposal

by

Richard Schmalensee and William Taylor

Comments on the USTA Pricing Flexibility Proposal

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May 9, 1994

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Executive Summary

This paper examines the United States Telephone Association (USTA) proposal to grant the local exchange carriers (LECs) access prices flexibility, depending on the degree of competition present in each market area. The analysis rests on the Federal Communications Commission's (FCC) stated goals for carrier access regulation and the principles of economic theory. To be desirable on these terms, an access reform proposal must achieve the consumer benefits from pricing flexibility without incurring efficiency losses in markets where a LEC has the ability and incentive to price anticompetitively. We conclude that the USTA proposal is sound, and its adoption would serve the public interest. The USTA proposal would benefit the customers, who would be able to purchase access services from the LECs, the competitive access providers (CAPs), or other competitors at the most efficient and lowest price.

The USTA proposes that the current LEC wire centers become the geographic areas that determine the degree of pricing flexibility. We believe that economic markets are generally larger than wire centers. However, the wire center, for now, is the smallest geographic area to which market power analysis can be applied.[1] The pricing flexibility in the USTA proposal will not create incentives for LECs to pursue anticompetitive strategies, and there are sufficient safeguards to address concerns regarding predation and discrimination. We also conclude that the proposed price cap structure insures that additional LEC pricing flexibility would not facilitate subsidizing carrier access services in competitive wire centers at the expense of carrier access customers in less competitive areas. Instead, the additional pricing flexibility would provide the pro-competitive ability

[1] While the wire center is the basic unit of observation in the USTA proposal, USTA recognizes that in many instances it may be useful to consider the competitiveness of larger market areas.

to meet competitors' prices and customers' individual needs by charging prices that more accurately reflect the costs of providing services.

A key element of the USTA proposal is the method for assessing the competitiveness of a wire center (or wire centers), which is based on the availability of competitive alternatives to a substantial fraction of the current demand for carrier access services. We feel strongly that availability is superior to share in this context. Economic theory, the Department of Justice Merger Guidelines and the Cable Act of 1992 all suggest that the form of the USTA proposed standard for competitiveness is appropriate and realistic. Given the degree of pricing flexibility requested, the proposed criteria to classify access markets as Transitional Market Areas (TMAs) are probably conservative, and the Competitive Market Area (CMA) criteria are certainly reasonable. The USTA proposal applies these concepts to both large and small LECs, so that the necessary degree of pricing flexibility can be implemented in all relevant geographic areas as competitive conditions warrant.

There appears to be common agreement that regulatory impediments to competition in the carrier access market need to be eliminated in order to provide the maximum benefits of competition to consumers. Changes of this magnitude are not uncommon; the FCC has granted AT&T pricing flexibility when it found that circumstances warranted or required such actions. Obviously, the goal of efficient regulation is to open markets so that all potential competitors are given an opportunity to compete, and the FCC is progressing rapidly in that direction. However, much of this effort will be wasted if competition takes place in the shadow of the current carrier access regulations, which handicap LECs in their response to changing market conditions by holding a price umbrella over competitive market areas.

Incumbent LECs must be permitted to adjust their prices and products when competition starts--not when competitors succeed. Otherwise, competitors will receive false economic signals and will make incorrect calculations about their ability to supply services in particular market areas. Thus the principal benefit from the provision of appropriate pricing flexibility in these markets is that market forces will determine which firms provide what services. Without increased downward pricing flexibility for the LECs, this benefit of competition will not accrue to customers, and carrier access competition may <u>raise</u> industry costs rather than lower them.

Comments on the USTA Pricing Flexibility Proposal

I. Introduction

The United States Telephone Association (USTA) has proposed criteria for classifying carrier access markets according to the degree of competition present in each market and granting more pricing flexibility in markets that are subject to more competition. We have examined the proposal and find that the USTA pricing criteria are sufficiently restrictive to achieve the goals of Federal Communications Commission (FCC) regulation while remaining sufficiently flexible so that the benefits of competition will also be achieved.

The regulators' problem is to determine the level of competition in each market and to adopt regulations that appropriately complement market forces, thus fostering the two types of economic efficiency: technical and allocative.[2] These inevitably imperfect regulations should be designed to imitate the process of competition in those markets where competition is not present. If the regulations are inappropriate for the level of competition in a given market area, the benefits of effective competition are not realized by consumers. These benefits are potentially significant. Competition can provide just and reasonable prices, suitable levels of service quality, efficient use of scarce resources, sustained technical progress, and incentives to develop and market new products and services. However, it is critical that appropriate regulations, reflective of market conditions, be

[2]Efficient competition fosters technical efficiency by eliminating high-cost suppliers from the market. Since a price umbrella is not provided for inefficient entrants or for the incumbent, services will only be provided by low cost firms. Economically efficient pricing leads to allocative efficiency because the prices at which goods and services trade reflect the value of the resources used to produce them.

established prior to widespread competition to ensure that potential competitors make efficient entry decisions.

The goals of FCC regulation of carrier access charges were succinctly stated in the recent Staff Working Paper on access reform:[3] (i) to foster local exchange and interstate competition, (ii) to encourage economically efficient pricing, (iii) to encourage service and technological innovation, and (iv) to preserve universal service. Although these interrelated goals are addressed and supported by the USTA proposal, we have limited our attention to its pricing flexibility component and are primarily concerned with the first two goals, which emphasize the importance of technical and allocative efficiency. Achieving these two goals requires two different constraints on the pricing flexibility of the local exchange carriers (LECs): prices cannot be either too high or too low.

Economically efficient prices for local access services would be close to economic costs, deviating from economic costs only to the extent necessary to recover fixed and common costs with the least distortion. Unrestricted by regulation or competition, however, it is presumed that LECs, or for that matter any firm, would not generally charge efficient prices in non-competitive markets. They would be expected to charge prices that made their profits as large as possible, and if competition or regulation imposed no limits, LEC prices would generally exceed economic costs. To achieve economically efficient prices, the ability of the LEC to hold its price above cost must therefore be constrained, either by the competitive process--where it is effective--or by regulation--where it is not. Such constraints limit the ability of the LEC to <u>raise</u> prices.

Fostering efficient local exchange competition addresses the ability of the LEC to <u>lower</u> prices. If competition among LECs, competitive access providers (CAPs), cable companies, and cellular and personal communication services (PCS) providers is to flourish, then one firm must not

[3]FCC Access Reform Task Force, "Federal Perspectives on Access Charge Reform," FCC Staff Working Paper, April 30, 1993, p. 3 [Staff Working Paper].

be able to use market power in some portions of the local market to disadvantage competitors in other parts of that market. Regulatory or judicial oversight is frequently sought by competitors to restrain anticompetitive strategies such as predatory pricing, cross-subsidization, and vertical price squeezes. Such oversight, however, should focus on preventing anticompetitive behavior without impeding the LECs' ability to compete.

Finally, both types of economic efficiency can be affected by LEC prices that are neither too high nor too low on average but which vary too much among customers, among competitors, or between the LEC itself and its competitors. Limits on the ability of the LEC to rebalance rates across classes of customers would be desirable if such rebalancing were anticompetitive or led to adverse distributional consequences. If the access price differences across competitors did not reflect cost or market differences, the competitive process in the long distance market would no longer favor the efficient supplier, and competition would no longer accurately allocate scarce resources to their most productive use.[4] Inappropriate differences between the access prices paid by interexchange carriers and the implicit transfer prices paid by the LEC's own long distance services leads to circumstances in which the cost advantage of the most efficient producer can disappear. When the low cost long distance supplier is unable to charge the lowest price, the competitive process will thus not lead to technical efficiency; the social cost of service provision will be artificially inflated.

Similarly, if limits on LEC rebalancing would lead to an overall pattern of access charges (not just LEC access charges) with preferable distributional properties, such limits might be desirable on that score. Note, however, that under vigorous competition, limiting LEC pricing alone will not affect the overall pattern of, for instance, volume discounts.

[4]For example, geographically, route, and technologically averaged transport prices would favor small interexchange carriers over large and ubiquitous carriers.

Balanced against these possible disadvantages of unrestricted LEC pricing flexibility are the consumer benefits that come from permitting large, previously regulated firms to change their prices and products to respond to customers' preferences. As the Commission observed in the Special Access Order,

> "(e)xcessive constraints on LEC pricing and rate structure flexibility will deprive customers of the benefits of competition and give the new entrants false economic signals." [5]

The key to a successful access reform proposal is to find some way to achieve the consumer benefits from pricing flexibility without incurring efficiency losses in markets where the LEC has the ability and incentive to charge economically inefficient prices. We believe that the USTA plan achieves that delicate balance. Specifically, the proposal identifies three types of market areas: (i) initial market areas (IMAs) in which competition has not been sufficiently documented to warrant any additional relaxation of regulation,[6] (ii) transitional market areas (TMAs) where the presence of competition triggers a limited amount of flexibility, and (iii) competitive market areas (CMAs) where competition has sufficiently evolved so that carrier access services can be removed from price cap regulation. In this paper, we analyze the balance between the benefits of pricing flexibility and control of market power and anticompetitive conduct struck in the USTA proposal, and conclude that it is reasonable and likely to serve the public interest.

II. The Need for Reform

It is universally acknowledged that telecommunications has experienced a sea change since carrier access charges were devised as a substitute for the Bell System settlements process at

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[5]Expanded Interconnection with Local Telephone Company Facilities, CC Docket No. 91-141, Report and Order, 7 FCC Rcd 7369 (1992) [Special Access Order] at ¶ 172.

[6]Other aspects of the USTA proposal not pertaining to pricing flexibility, such as access services rate structure reform and public policy support obligations, would apply to all market areas--including IMAs.

divestiture. Most observers would also agree that the Part 69 Rules are no longer responsive to current market conditions and should be changed.[7] While there is agreement that changes are necessary, there is less agreement on the direction of those changes.

Since divestiture, LEC provision of equal access, Open Network Architecture (ONA), and expanded interconnection has altered the structure of the long distance and carrier access markets, opening opportunities to compete in specialized market niches and in markets for basic telecommunications services like switching and transport. The introduction of new technologies--principally optical fiber transport--has made competition possible in the carrier access market, much as microwave radio technology made competition possible in the long distance markets. Adoption of various forms of incentive regulation in most states and of price cap regulation by the FCC has removed distortions that cause the incentives of the regulated companies to differ from those of unregulated firms in competitive markets. An important feature of this regulatory change has been the reduction or elimination of some perverse incentives which stem from rate-of-return regulation, for the LEC to price anticompetitively. Finally, the FCC has also adopted zone density pricing plans for switched and special access that provide potential entrants with more reasonable expectations of the LECs' ability to compete.

Significant regulatory impediments to competition, however, remain in the carrier access markets. Two examples are geographic averaging of access charges and tariffing requirements for access services. Geographic averaging of carrier access charges ignores differences in the cost of serving customers, in the types of services demanded, and in the response of customers to service provision through alternatives to the public switched network. Access prices are currently set at varying levels of aggregation depending on the LEC, and they bear no necessary relationship to

[7]Staff Working Paper at p. 32, and Reform of the Interstate Access Charge Rules (RM-8356), Comments to USTA Petition for Rulemaking (Nov. 1, 1993) of MFS at p. 1, CompTel at p. 1, and Information Technology Association of America at p. 10.

economic markets. The areas used to set prices can be as large as a dozen states or as small as a handful of exchanges. Treating all LEC services within each of these areas as equally subject to competition makes no economic sense; to be responsive to the emerging carrier access markets, prices must be set at geographic levels of aggregation that correspond approximately to economic markets. Otherwise, geographically inflexible LEC prices will spawn pockets of urban, high density customers susceptible to offerings of competitors and other pockets of rural, low density customers having artificially low prices but no choices.[8]

Tariffing restrictions on LECs are a form of asymmetric regulation that reduces the ability of the LEC to market its services to customers by varying product characteristics (including prices) to determine the best product and price for the market. In contract bridge, a peek is worth a thousand finesses, and in marketing, observing the response of actual customers to a variety of actual products and prices is essential if the firm is to serve its customers. In addition, Part 69 tariff requirements can prevent LECs from meeting customer needs in a predictable and timely manner. The waiver process adds a whiff of uncertainty to LEC offerings that a customer can avoid by shopping elsewhere. The Part 69 Rules also set prices for access elements at fully distributed cost, averaged over geographic areas and customers. A firm whose procedures were driven by the needs of its customers would not have created the Part 69 filing requirements.

These restrictions on LEC access pricing flexibility are ultimately anticompetitive, as they prevent customers from taking advantage of competition among LECs and CAPs to realize price reductions. And this fact is not lost on the LECs' competitors. In arguing against the pricing flexibility currently provided in the price cap rules, Penn Access claimed that such flexibility

[8]Although the approved LEC density zone plans introduce limited pricing flexibility, competitive pressures require additional flexibility. The shortcomings of the density zone plan include the inability to vary rates within a zone and to offer contract prices.

> "effectively limits the ability of competitive access providers (CAPs) to raise their rates and, indeed, forces them in some instances to lower their rates."[9]

This, of course, is what competition is supposed to do. Restricted, regulated competition in which LEC prices are determined outside the market will not bring the benefits of price competition to customers.

The Commission has recognized this fact in the interexchange market, where it has monitored competitive, technological, and regulatory developments and has granted AT&T several types of pricing flexibility when it has found that circumstances warranted or required such actions. In particular, regulation of AT&T has been relaxed through:

- pure price cap regulation with no vestigial tie to rate of return regulation through sharing or other backstop mechanisms,
- removal of high capacity private line services (Basket 3) and the recent removal of most large business services (Basket 2) from price cap regulation,
- contract pricing through Tariffs 12 and 16, and
- streamlined regulation for competitive offerings, optional calling plans, and introductory or limited term price discounts.

The need is clear to reform the carrier access tariff structure to make it responsive to current market conditions. To appraise the economic consequences of the particular changes proposed by USTA, we must now set out both the efficiency gains and losses that stem from relaxed regulation and pricing flexibility.

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[9]Penn Access, *Petition to Reject or, Alternatively, to Suspend and Investigate Bell Atlantic Transmittal No. 557*, (collocation tariff), March 15, 1993, p. 2.

III. Economic Framework

Most economists would agree that the unregulated competitive process is a better method of organizing economic activity than any regulatory scheme devised by man. The regulators' problem as telecommunications markets transition towards competition is that in some markets, the competitive process is weak and does not exert sufficient pressure to prevent the occurrence of certain undesirable outcomes. For example, granting the LEC additional pricing flexibility could result in higher prices in regulated markets in which the LEC has the ability to raise prices profitably above their current level. Pricing flexibility could be used inappropriately to engage in undue price discrimination between customer classes, between interexchange carriers, between different users of the same network facilities, or between a competitor's service and the service used by the LEC's own retail operations. Finally, pricing flexibility could make possible or encourage anticompetitive pricing practices such as predatory pricing, cross-subsidization, or a vertical price squeeze.

The USTA criteria that a LEC geographic area must meet in order to receive some degree of pricing flexibility (TMA and CMA) must ensure that the additional pricing flexibility made possible would not enable the LEC to price discriminate unduly or to price anticompetitively.

A. Market Power

The object of controlling market power is to prevent the charging of supra-competitive, or high, prices. In contrast, competitors are most concerned that the dominant firm's prices may be too low. In order to accept the USTA proposal, the regulator must be confident that the pricing flexibility requested in a given market area will not permit the LEC to charge inefficiently high prices to customers who lack adequate alternatives. Customers generally have at least one important alternative in carrier access markets. There are three principal customers for carrier access service, and in any geographical area these customers will have alternatives to LEC carrier access to serve end users. One of the main alternatives used by all three customers is self-supply, where an interexchange carrier extends its own network, substituting self-provision for the use of LEC facilities. The cost of self-supply puts an upper limit on LEC prices.

Strictly speaking, prices above incremental cost are inefficient,[10] and the ability to raise price above competitive levels must be absent or (if not) must be controlled in order to achieve the first of the FCC's stated goals of regulation. Note that the ability to raise price must be controlled; structural characteristics of markets such as the number and size of competitors and the market share of the LEC are relevant only insofar as they affect the ability to raise price. In short, the regulator's ultimate concern is with market power--the ability to raise price above the competitive level--not with market share or other imperfect correlates of market power.

The ability to raise price profitably above the competitive level requires that there be inadequate substitutes currently available for the LEC service and that substitutes not be readily supplied in response to a profitable opportunity. Because of self-supply of access facilities by interexchange carriers, the existence and success of competitive entrants in carrier access markets will not be necessary to curb market power. Once expanded interconnection is implemented, irrespective of the presence of access competitors, interexchange carriers (IXCs) can purchase those pieces of the LEC's local network for which the price is below the IXC's own forward-looking incremental cost and self-provide those network components for which the LEC's price is above the IXC's cost. In these markets, no competitors (CAPs or cable companies)--and even no threat of competitors--is necessary to impose some competitive market discipline on the LEC's ability to raise price.

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[10]Of course, in the telecommunications industry, prices set at incremental cost will only recover a fraction of the total costs of the firm. Efficient prices in these circumstances are those which exceed incremental cost in each of the various markets of the firm so as to recover the total costs of the firm while distorting consumers' levels of demands in each market as little as possible.

Several other theoretical aspects of measuring market power are relevant in this analysis. Market power is different from market share: a useful measure of market power can be written as a function of market share, the entrants' and competitors' elasticity of supply, and the market price elasticity of demand.[11] For market share calculations in the carrier access markets, the appropriate measure of size is capacity, i.e., the fraction of the market that a particular firm is capable of serving. In their Merger Guidelines, the Department of Justice (DOJ) observed that

> "(m)arket shares can be expressed either in dollar terms through measurement of sales, shipments, production, capacity, or reserves.... When the availability of data allows a choice, dollar sales or shipments generally will be used if branded or relatively differentiated products are involved, and physical capacity, reserves of dollar production generally will be used if relatively homogeneous, undifferentiated products are involved."[12]

In the recent revision and expansion of these guidelines (April 1992), this observation is replaced with the advice that

> "(m)arket shares will be calculated using the best indicator of firms' future competitive significance. Dollar sales or shipments generally will be used if firms are distinguished primarily by differentiation of their products. Unit sales generally will be used if firms are distinguished primarily on the basis of their relative advantages in serving different buyers or groups of buyers. Physical capacity or reserves generally will be used if it is these measures that most effectively distinguish firms." (pp. 25-26).

For homogeneous products (like carrier access services) sold as intermediate goods, the fraction of the market that can be served by a competitor is thus the appropriate measure of market share.[13]

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[11]See, e.g., D.W. Carlton and J.M. Perloff, *Modern Industrial Organization*, New York: Harper Collins College Publishers, second edition, 1994.

[12]U.S. Department of Justice, Merger Guidelines, June 1984.

[13]In a regulated market, conditioning pricing flexibility on the market share of sales of the dominant firm sets up incentives which are perverse in the extreme: success in serving customers better than one's competitors is punished by retaining pricing restrictions for a longer period, while failure in the market is rewarded by additional pricing flexibility. Use of share of capacity instead of share of sales avoids this fundamental error.