

competition begins in a market previously served by a sole provider should be to reduce, to the greatest extent possible, unnecessary asymmetric obligations on the market participants. Pursuing such a policy ensures that a provider's efficiencies and relative abilities to supply customer demands—not regulatory distortions—determine its success in the market.

Estimates of the potential welfare gains to society from deregulating telecommunications—and actual experience in other industries—highlight what is at stake before the Commission. Maintaining unneeded regulatory constraints on markets long after they are no longer required has imposed significant economic costs on U.S. consumers. In a 1996 study, Crandall and Waverman estimate that the net gains from telecommunications deregulation that leads to more efficient pricing is almost \$30 billion.<sup>16</sup> That same year, Crandall and Furchtgott-Roth analyzed the cable TV industry during, *inter alia*, the period when services were deregulated.<sup>17</sup> They found that households were collectively \$6.5 billion a year better off with cable's services in 1992 (after deregulation) than with those of 1983-84 (before deregulation). Moreover, viewers had many more and better-quality viewing choices during the period of deregulation. Earlier, Clifford Winston analyzed the welfare effects of deregulation in airlines, railroads and trucking and found comparable net gains in welfare:<sup>18</sup> in total, at least \$36-\$46 billion (1990 dollars) annually from deregulation with the bulk of the benefits going to consumers.<sup>19</sup>

A policy that should **not** be followed implicitly or explicitly—though it has been sometimes in the past—is to attempt to protect and assist competitors rather than the competitive process. One of us recognized this problem nearly a decade and a half ago:

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<sup>16</sup> Robert W. Crandall and Leonard Waverman, *Talk is Cheap: The Promise of Regulatory Reform in North American Telecommunications*, Brookings Institution (1996).

<sup>17</sup> Robert W. Crandall and Harold Furchtgott-Roth, *Cable TV: Regulation or Competition?*, The Brookings Institution (1996).

<sup>18</sup> Clifford Winston, "Economic Deregulation: Days of Reckoning for Microeconomists," *Journal of Economic Literature*, Vol. XXXI (September 1993), pp. 1263-1289.

<sup>19</sup> Welfare gains from deregulation (in 1990 dollars) were estimated at \$13.7-\$19.7 billion, \$10.4-\$12.9 billion and \$10.6 billion for the airline, railroad and trucking industries, respectively.

As a permanent, long-run policy, the Commission's choice should be between regulation of a single supplier of telecommunications services (if natural monopoly elements are important) and unregulated competition (if they are not).<sup>20</sup>

The Commission should not implement policies that have as their goal the survival of competitors at the cost of aggregate welfare losses to society. There are many examples of such policies: a particularly egregious example is to withhold pricing flexibility from the incumbent carrier until after competitors have (artificially) succeeded in the marketplace. As discussed in more detail below, such a policy creates economic distortions in the marketplace and leads to inefficiencies and lower consumer welfare. As Almarin Phillips observed in the early days of telecommunications competition,

(t)hrough regulation of one kind or another—legislation, injunctions, consent decrees, or regulatory edicts—the pricing and services at AT&T, the BOCs, and other non-Bell participants in the switched network can be arranged so that all are viable. That is, regulations can be formulated to preserve and protect an inefficient structure with many firms. Competition, nonetheless, is just the opposite of this. The idea of competition is to have a market structure that, without regulation, induces efficient pricing.<sup>21</sup>

Commission policies should be competitor-neutral so that a provider's efficiencies and relative abilities to supply customer demands determine its success in the market. As a former Head of the Commission's Office of Plans and Policy put it,

An important potential source of governmental failure rests in the fallacious notion that deregulation can be permitted by regulators only when markets become, somehow measured, competitive. That notion is fallacious because it characterizes competition as a static goal rather than a dynamic process. Competition is a means, not an end. Failure to draw and act on this important distinction means that policymakers run the risk of creating a wholly artificial industry structure based on inefficient pricing and entry.<sup>22</sup>

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<sup>20</sup> "Statement of Richard Schmalensee." Attachment 4 to *Comments of AT&T* in CC Docket No. 83-1147, April 2, 1984 at 3-4.

<sup>21</sup> Almarin Phillips, "The Impossibility of Competition in Telecommunications: Public Policy Gone Awry," in *Regulatory Reform and Public Utilities*, Michael Crew (ed.), Lexington, MA: Lexington Books, 1982 at 23.

<sup>22</sup> John Haring, "The FCC, the OCCs and the Exploitation of Affection," OPP Working Paper No. 17, June 1985  
(continued...)

At the heart of the arguments in favor of protecting competitors is the notion that competitors in these markets are infants that need protection until they grow up and are weaned from the Commission's protection.<sup>23</sup> While the infant industry argument sometimes finds economic supporters in the area of international trade, the circumstances that may lead to adoption of such a strategy—infancy, inexperience in the field and inability to acquire key resources—are completely absent in the carrier access and local exchange market.<sup>24</sup> Among the ILECs' competitors are large, sophisticated corporations with national and global networks. These entrants—including AT&T, WorldCom-MFS, MCI and Sprint—are eminently experienced in telecommunications markets, have ambitious plans to enter the local exchange market and carrier access market and are more than capable of competing effectively.<sup>25</sup>

For example, according to Morgan Stanley investment analysts, AT&T is expected to spend about \$1.5 to \$2.0 billion per year over the next seven years on local exchange infrastructure.<sup>26</sup> AT&T clearly has enormous resources to compete effectively and has the technological expertise to develop new bypass technologies such as wireless loops for local exchange and exchange access service. In February, AT&T "announced plans...to link its wireless phone network directly to millions of home phone lines, offering consumers a new way to make local calls and speed access to the Internet."<sup>27</sup> Although AT&T reported that the

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at 3-4.

<sup>23</sup> Something which is likely to be opposed by the competitors "even after the children are grown up and off to college." Infant industry protection provides perverse incentives to compete in the hearing room rather than devoting resources to lowering costs and expanding demand because the marginal gains from regulatory rent-seeking are substantial. Once preferential treatment is given, recipients have strong vested interests to maintain it, as the Commission's experience with the eventual termination of regulating AT&T as a dominant carrier.

<sup>24</sup> The infant industry argument is the belief that emerging industries need to be protected from more efficient, established, foreign competitors until they can build market share and lower costs through economies of scale and learning-by-doing. It is used as justification for implementing or maintaining tariffs.

<sup>25</sup> Since this sentence was first written, AT&T and WorldCom have announced their intentions to acquire Teleport and MCI respectively. Both mergers increase their constituents' ability to supply end-to-end bundled services to (primarily large business) customers, and unlike the ILECs with which they compete, the prices and services of the resulting firms are not subject to pervasive regulation.

<sup>26</sup> Stephanie Comfort, "AT&T: Happy New Year." Morgan Stanley, January 31, 1997, p. 9.

<sup>27</sup> "AT&T to Test Wireless Homes" The Associated Press, *The New York Times*, February 26, 1997, p. D21.

system trial, slated for the fourth quarter 1997 in Chicago, will be delayed until 1998 because the hardware and antennas which support the network will not be ready, the company has no plans to abandon its wireless loop technology undertaking. While in November 1997, AT&T announced that it had “all but stopped marketing efforts to win new residential customers in the six states where it has launched competitive local services,” its commitment to competing in the local exchange market—particularly for business customers—was clearly revealed in its \$11.3 billion acquisition of Teleport Communications Group announced on January 8, 1998<sup>28</sup>. In addition, MCI has made major commitments to enter the local market and bypass ILEC access, deploying fiber-optic rings in major markets around the country, beginning with a \$2 billion plan to put fiber-optic systems through abandoned Western Union conduit in the 20 largest US cities.<sup>29</sup> Its acquisition by WorldCom will produce a formidable competitor in local exchange and exchange access markets and in the market for supplying bundled local exchange and long distance services to retail customers.

Competitors frequently point to the power and advantages of incumbency and argue that regulators have to offset such advantages in order for competitors to be able to compete and survive.<sup>30</sup> Usually these arguments boil down to preventing flexibility or diversification because incumbents are in a position to exploit economies of scale and scope that are lacking and are not available, to the same degree, by competitors. This argument is disturbing for a number of reasons. Having once decided that competition is national policy in *all* telecommunications markets, it would be disastrous to micromanage the process and penalize efficiency. Competitors would have the Commission evaluate and measure respective economies of scale and scope to use as a basis in regulatory decisions. Such a policy would be

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<sup>28</sup> “AT&T Cuts Back Marketing of Residential Local Service,” *Telecommunications Reports*, November 17, 1997, at 31. Seth Schiesel, “AT&T Agrees to Acquire Local Telephone Carrier,” *New York Times*, at <http://www.nytimes.com>, January 9, 1998.

<sup>29</sup> Edmund L. Andrews, “MCI Plans to Enter Local Markets,” *The New York Times*, January 5, 1994, p. D1. See also “MCI Seeks to Be ‘Local’ in 5 States,” *The New York Times*, October 4, 1994.

<sup>30</sup> See, e.g., Robert E. Hall, on behalf of MCI, In the Matter of Application of SBC Communications Inc., et. al. For Provision of In-Region, interLATA Services in Oklahoma, before the Federal Communications Commission, CC Docket No. 97-121, p. 55.

disastrous because it would reduce the consumer benefits that were the primary focus of the 96 Act—improved technical and allocative efficiencies. Artificial advantages should not be given to any market participant in order to offset putative advantages in economies of scale and scope.

Moreover, such arguments fail to take into account the *raison d'être* of current market forces in telecommunications. Diversification into closely related markets (e.g., IXCs entering regional toll or carrier access) is being propelled by technological and economic factors causing the same competitors to take advantage of exactly the same kinds and sources of economies of scope. These new competitors, unencumbered by asymmetric regulations clearly intend to extend their product offerings and reap economies of scale and scope. More dangerous from a public policy perspective, competitors intend to enter and serve the lucrative customers leaving aside higher-cost ones. According to former CEO Robert Allen:

It's logical that bees follow honey and banks are robbed because that's where the money is. And our focus will be on concentrated markets in major cities with concentrations of business customers.<sup>31</sup>

Clearly, it is not sound public policy to protect such competitors; rather, consumers are better served if each carrier's relative efficiencies are allowed to determine its success in the market. Experience in other industries indicates the dangers and costs to society from asymmetric regulation and competitive entry such as we experience today in the carrier access markets. In a recent paper, Dr. Robert G. Harris measured the cost to the freight transportation industry of maintaining excess capacity in the form of routes which did not cover their own costs to be in the range of \$3.4 billion and \$15.4 billion in 1995 dollars.<sup>32</sup> Dr. Harris estimated that there was a \$1.6 billion per year net gain in railroad profitability (in 1977 dollars) and that consumers gained an estimated \$3.62 billion per year (in 1977 dollars) as a result of recent

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<sup>31</sup> Roy Neel, "Static on the Line," *Chicago Tribune*, December 11, 1996.

<sup>32</sup> Robert G. Harris, "Toward Regulatory Symmetry in Local Exchange Services: Lessons From Financial Services and Freight Transportation," Presented to the Industrial Organization Society Allied Social Science Associations, San Francisco, January 5, 1996.

Congressional deregulatory actions.<sup>33</sup>

Dr. Harris also measured the economic harm incurred from regulation in the banking industry. While banks were subject to interest rate restrictions, universal service restrictions under the Community Reinvestment Act, and line of business and geographic restrictions, competitors from nonbank financial service providers—such as insurance companies Prudential and Met Life, brokers like Merrill-Lynch and E.F. Hutton and large corporations like AT&T and Ford Motor Company—were not subject to the same amount of regulation. The above requirements, coupled with many additional regulatory and compliance rules, cost the industry \$10.7 billion in 1991.<sup>34</sup> Sound economics and examples from telecommunications, airlines, freight, and banking industries indicate that maintaining unnecessary regulatory constraints on incumbents leads to significant societal costs. Regulatory policies must be forward looking: based on current and likely future market developments rather than on vestiges of a monopoly-provided system that no longer is present or relevant.

### **B. Pricing Flexibility Tools**

There are many prescriptions in the Part 61 and 69 access regime that deny ILECs the flexibility needed to compete effectively against potential, nascent and established competition. These rules include the requirements to average rates geographically without regard to underlying costs, prohibitions on ILEC volume and term discounts (including customer-specific contracts), and delays in approval of new services, promotional offerings, and optional service packages. These constraints cause incorrect market signals to be sent to participants, hinder the establishment of efficient competition and increase the likelihood of inefficient and wasteful investment. In the remainder of this section, we discuss the benefits associated with the different forms of pricing flexibility.

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<sup>33</sup>In 1980, Congress passed the Staggers Act to deregulate the railroad industry and the Motor Carrier Act to deregulate the trucking sector.

<sup>34</sup>Robert G. Harris, "Toward Regulatory Symmetry in Local Exchange Services: Lessons From Financial Services and Freight Transportation," *Op. Cit.*.

Rates for many carrier access services—including the subscriber line charge (SLC) and carrier common line charges (CCLC), local switching, transport and the newly-created primary interexchange carrier charges (PICC)—are geographically averaged, creating significant inefficiencies when costs vary geographically. Geographically-averaged rates cause prices in some areas to exceed their economic costs, while prices in other areas are below cost. Such pricing creates two different sorts of inefficiencies: (1) inefficient utilization of telecommunications resources, and (2) distorted competitive incentives. For example, in high cost areas where economic costs are likely to exceed prices, distortions occur because consumers are given a false signal to add lines even though the marginal benefit to the customer may be less than the incremental cost incurred. Competitive distortions occur due to the inability of competitors to compete with below-cost prices. In low cost areas, the opposite effect occurs. Because prices are higher than their economic costs, consumers are discouraged from adding lines even though their marginal benefit may be greater than the incremental costs incurred. Competitors are falsely encouraged to enter the market even though their incremental costs may be higher than the ILEC's.

Deaveraging carrier access service prices by geographic area and class of customer more closely aligns rates with the ILECs' costs and leads to efficiency improvements. Such deaveraging is especially important in the early stages of competition because efficient entry decisions should be made on the basis of economic cost, not distorted price signals. As observed in an earlier, related context,

(t)here is no doubt that potential and actual entrants (such as MCI) have a strong incentive to rigidify the price responses open to an incumbent who is confronted with newly emerging competition. It seems clear that the staunchest advocates of full-cost pricing have been firms anxious to hobble their disquietingly effective rivals.<sup>35</sup>

In a world where UNEs can be used as a substitute for ILEC carrier access services as well as retail local exchange services, it is even more important to permit price deaveraging.

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<sup>35</sup> W. Baumol and J. Ordover, "Use of Antitrust to Subvert Competition," *Journal of Law and Economics*, May 1985 at 258.

Some states have approved rates for UNEs that are deaveraged based on urban, suburban or rural characteristics such as line density in a given area.<sup>36</sup> Not permitting ILEC retail and carrier access service prices to be deaveraged thus distorts competition between UNEs and ILEC services. Competitors can (i) target low cost areas where some or all customers pay higher rates than are justified by costs, (ii) purchase UNEs in that area at a cost-based rate and (iii) undercut the ILEC's rates. Without the ability to deaverage, the ILEC is unable to respond effectively.

This problem is compounded by the fact that UNEs are not priced differently for different types of end users—i.e., residential, single-line business, multiline business—despite the fact that the prices of the retail services with which they are used to compete do differ by type of end user. Moreover, the higher SLCs and PICCs charged to business customers, who have lower NTS costs on average, contribute to a subsidy from business to residential customers. Since UNEs are deaveraged, they can easily be used to arbitrage this subsidy away.

The benefits of deaveraging are clear. While in theory, deaveraging to the smallest unit available more closely aligns prices with costs, increased transactions costs associated with greater and greater deaveraging leads to an optimal level of deaveraging that is not at the smallest available unit. For example, the billing and metering costs necessary to deaverage down to each individual customer are likely to be prohibitive. Therefore, while deaveraging is consistent with competitive markets, ideally it should be left to the market to determine the optimal degree.

Permitting ILECs price flexibility to respond to potential and actual competition can generally lead to improvements in economic welfare. Such is the case with volume and term discounts that reflect cost efficiencies and with customer-specific contracts keyed to specific customer requirements. They promote efficient utilization of telecommunications resources by more closely aligning customer preferences with the firm's costs for production or delivery of

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<sup>36</sup> Line density (access lines per square mile) is used as a proxy for cost per line. Higher line density is associated with lower costs due in part to shorter loop lengths.

large orders and by tailoring services to meet demands of large heterogeneous customers who have substitutes available. Volume and term discounts and customer-specific contracts are useful strategies in competitive markets that benefit customers and prevent inefficient investment in the network. Consumers benefit from this type of flexibility because the prices they pay can be tailored to the particular services they need to buy. In economic theory, volume-based price discrimination is a well-known method to expand market demand and thereby increase economic welfare. Not permitting such flexibility causes consumers to not make transactions that would make them better off or to transact business with other competitors at higher cost. Increasing pricing flexibility that leads to increased welfare gains for consumers should be the Commission's main priority for regulatory reform of carrier access services. Retaining regulations that protect competitors rather than competition should not be an option pursued by the Commission.

The broad averaged downward pricing flexibility that the Commission has granted to date is not sufficient to ensure efficient competitive outcomes. Requiring the ILECs to cut prices to *all* customers to meet localized competition is an asymmetric regulatory burden that leads to inefficient competition and investment. Permitting selective downward pricing flexibility from regulated, averaged prices in order to reflect cost differences and meet competition is welfare-enhancing. An ILEC may decide not to reduce rates because of this asymmetric burden, in which case it would lose certain customers that it would have retained if it granted targeted flexibility in the same form of volume and term discounts or customer-specific contracts that its competitors use. As the Commission has observed,

(d)enying the LECs [pricing] flexibility...will not prevent the larger IXCs from obtaining discounts, either from CAPs or through self-supply, but will only prevent them from getting the discounts from the LECs. Thus, a ban on discounts would disadvantage the LECs without providing small IXCs the benefits they seek to achieve.<sup>37</sup>

Finally, when market forces are sufficient to constrain undue ILEC control over price,

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<sup>37</sup> *Expanded Interconnection with Local Telephone Company Facilities*, CC Docket No. 91-141. *Second Report and Order*, FCC 93-379 (released September 2, 1993) at ¶ 117.

regulations should adapt accordingly. At this stage, explicit price regulation no longer serves a beneficial purpose, and removal from regulation of those carrier access services that are price constrained by the competitive process improves economic welfare. Even mandatory tariff filings should not be imposed on the carriers because of the transactions costs incurred. Regulatory forbearance should be permitted at this stage as well.

### III. CURRENT MARKET CONDITIONS FOR CARRIER ACCESS SERVICES

#### A. Carrier access services

Carrier access services connect IXCs—usually at their points of presence (POPs)—with the ILEC's network to originate and terminate long distance traffic between the IXC's POP and an end user's premises. The network elements and facilities necessary to provide carrier access consist of loops, end-office switching, tandem switching,<sup>38</sup> common transport, dedicated transport, serving wire centers<sup>39</sup> and entrance facilities as shown in Figure 1. Of course, not all elements are necessary to provide all carrier access services.

There are two basic types of carrier access service: switched and special. Carrier access services that are switched at an ILEC's end office switch are called switched access services. In turn, switched access transport comes in two flavors depending on whether the traffic is switched again at a tandem (tandem-switched transport) or whether it is routed directly from the ILEC's end office to its serving wire center (direct-trunk transport) before proceeding to the IXC's POP. Direct-trunk transport is purchased by an IXC whose traffic to and from a particular end office switch is large enough to justify a direct connection dedicated to its use.<sup>40</sup>

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<sup>38</sup> A tandem switch is a telecommunications switch that switches traffic to and from other telecommunications switches, usually end office switches.

<sup>39</sup> A serving wire center is the telephone company central office designated by the telephone company to serve the geographic area in which the IXC or other person's demarcation point is located. (The point of demarcation and/or interconnection is between telephone company communications facilities and terminal equipment, protective apparatus or wiring at a subscriber's premises. See Code of Federal Regulations "68.3, revised on Oct. 1, 1994.)

<sup>40</sup> Dedicated transport uses facilities that serve a single IXC; typically, transport between the serving wire center  
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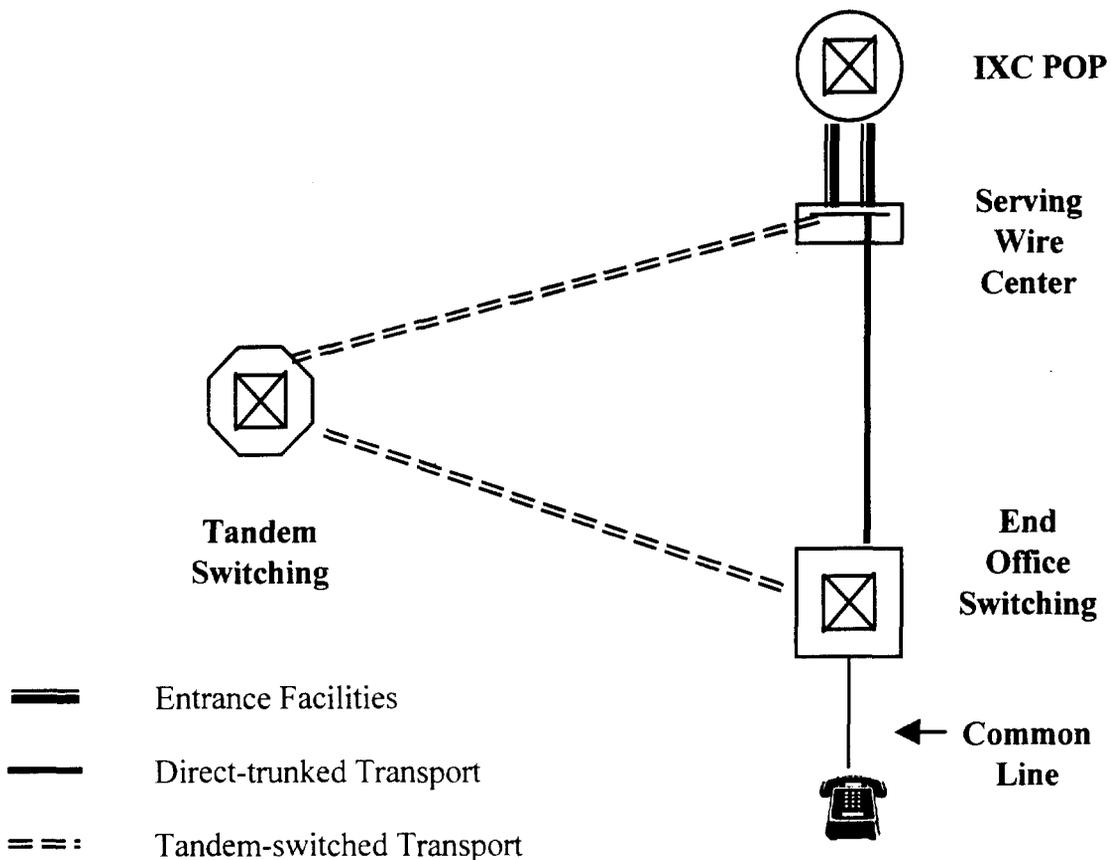
From the IXCs' perspective, direct-trunk transport is like a private line or special access, and CAPs have provided this service for years in competition with ILEC transport. As discussed below, barriers to entry are low for these services, customers are large and sophisticated IXCs for whom access expenditures are significant, and market forces are sufficiently developed to prevent ILECs from raising prices above a competitive level.

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and either the tandem or the end office can be dedicated. See Figure 1. The opposite of dedicated transport is common transport which uses facilities that are shared by several IXCs and other local exchange users.

**Figure 1: Carrier access Structure**



If an end user's long distance demand volume from a particular location is large, it may be economical for the IXC to purchase a direct connection—one that is not switched at the end office—between the end user's location and the IXC's POP. When an ILEC provides this service, it is called special access, but other facilities-based competitors can supply this service as well. Because relatively few customers account for much of the demand for long distance and because of improvements in fiber technology, the economic barriers to entry in special access markets are low. CAPs are competing aggressively in the special access markets and have significant capacity in place that can be used to provide switched access as well as local exchange services. For example, GTE reports that as of August 1997, approximately 19,250

equivalent DS1 facilities are provisioned by CAP facilities in major GTE markets.<sup>41</sup> For the same time period, total GTE DS1 facilities were 104,397 representing a market share loss of almost 19%.

The presence of alternative capacity that can potentially be used to serve an area of demand disciplines ILEC pricing.<sup>42</sup> Table 1 below presents fiber miles deployed by the RBOCs and CAPs since the mid 1980s. As can be seen from Table 1, CAP investment in fiber is growing at a significantly faster rate than that of the RBOCs. By 1996 CAP fiber mile deployment comprised almost 11 percent of the total. While 11 percent may not seem terribly large, the current fiber capacity can serve a good deal more than 11 percent of the market because optical fiber capacity can be readily expanded electronically, almost without limit. What is more important is the difference in growth rates between RBOCs and CAPs: by the end of 1996, the CAPs' aggregate percentage growth was almost seven times that of the RBOCs.

**Table 1:** Fiber Miles Deployed, RBOCs and CAPs.

Year	RBOCs (000)	CAPs (000)	RBOC (% Growth)	CAPs (% Growth)	CAPs (% Growth) / RBOCs (% Growth)
1985	497				
1986	880		77		
1987	1192		35		
1988	1587		33		
1989	2037		28		
1990	2780	55	36		
1991	3882	82	40	49	1.23
1992	5043	122	30	49	1.63
1993	6648	230	32	89	2.78
1994	7965	396	20	72	3.60
1995	9414	643	18	62	3.44
1996	10837	1312	15	104	6.93

Source: FCC, Fiber Deployment Update, End of Year 1996

Competitors have been very successful in capturing significant ILEC special access

<sup>41</sup> Quality Strategies Research, October 9, 1997 summary report. Major GTE's major markets consist of Tampa, Seattle/Everett, Durham, Lexington, Honolulu, Los Angeles and Portland.

<sup>42</sup> This must be tempered with the fact that the existence of UNEs make the question of alternative capacity less important when analyzing market conditions.

traffic and in substituting their direct connections for ILEC switched access to serve high-volume end users. Competitive forces have had significant market effects even before the Telecommunications Act and the FCC's *Order*. Overall CAP and CLEC revenue appears to have doubled between 1995 and 1996.<sup>43</sup> Market share losses were accompanied by significant reductions in market price: according to the FCC, "CAPs appear to have motivated local exchange carriers to price special access closer to cost."<sup>44</sup> The existence of substantial CAP capacity combined with strong revenue growth indicates that market conditions were conducive to competition prior to the Act and the availability of UNEs.

In addition, in many markets the ILECs were losing a substantial number of high volume customers that likely account for significant revenues. CAPs target business customers in dense areas which account for a significant portion of ILEC intracompany support flows (i.e. business to residential subsidy and urban to rural subsidy). For example, a 1995 study commissioned by SBC showed that in the Dallas and Houston markets SBC had already lost approximately 41.2 and 31.6 percent, respectively, of the high capacity special access market as of the fourth quarter 1994.<sup>45</sup> By the first quarter of 1995, ILECs' high capacity service losses to competitors were as high as: 39 percent in Philadelphia, 35 percent in Pittsburgh, 32 percent in Washington, D.C, 27 percent in Baltimore, 39 percent in Los Angeles, 37 percent in San Francisco, 50 percent in New York City, 44 percent in the Greater New York Metro region and 37 percent in Boston.<sup>46</sup> Finally, by March 1995, CLECs and CAPs had captured 10-15 percent of the nationwide carrier access market and had forced LECs to reduce rates on comparable

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<sup>43</sup> New Paradigm Resources Group, *Annual Report on Local Telecommunications, 1996-97*, cited in Marius Schwartz, "Competitive Implications of Bell Operating Company Entry into Long-Distance Telecommunications Services," Affidavit on behalf of the Department of Justice at footnote 6.

<sup>44</sup> Jonathan M. Krausharr, Industry Analysis Division, Common Carrier Bureau, *Fiber Deployment Update End of Year 1995*, at 34.

<sup>45</sup> USTA Comments, *In the Matter of Access Charge Reform*, CC Docket No. 96-262, at 44, filed January 29, 1997.

<sup>46</sup> *Ibid.*: USTA Reply Comments, *Price Cap Performance Review for Local Exchange Carriers*, CC Docket No. 94-1, filed January 11, 1996; *1995 State of Competition Report*, NYPSU, Section 4: Carrier Access Competition and Executive Overview.

services by 20-30 percent per year between 1991 and 1994.<sup>47</sup>

These substantial losses occurred before the passage of the 96 Act; now, additional tools are available to competitors. Providing flexibility after losses of this magnitude inevitably leads to significant welfare losses because of the inability to respond to competitors to retain customers. These markets are clear examples of where the Commission is already too late. Flexibility to respond to competitive offerings should have been given before the losses occurred, not after.

This trend has continued since the passage of the 96 Act and provides more evidence of the urgency involved. By the third quarter of 1996, competitors had captured 55.2 percent of the high capacity Chicago market and 48.8 percent of the Grand Rapids market.<sup>48</sup> Bell Atlantic estimated that its market share losses by 1996 for high capacity services were 53.5 percent in Southern Midtown Manhattan and 45.7 percent in the greater NYC Metro Area.<sup>49</sup> As of the second quarter of 1997, GTE had lost 19,250 equivalent DS1 circuits to CAPs in its major markets.<sup>50</sup> While an eroding market share is not necessarily a good predictor of likely future market power, these numbers are important because they indicate the degree to which competitors are winning customers in these markets and the degree to which customers are exercising choices.<sup>51</sup>

In addition, local exchange and exchange access competition has flourished through the new forms of entry opened by the 96 Act and the *Order*. Figure 2 further below indicates the number of interconnection agreements as of July 1, 1997.<sup>52</sup> These and subsequent agreements

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<sup>47</sup> Bernstein Research, *Telecommunications: Convergence and Divergence*, March, 1995.

<sup>48</sup> USTA Comments, *In the Matter of Access Charge Reform*, CC Docket No. 96-262, filed January 29, 1997.

<sup>49</sup> Ex-parte letter from Dee May, Director, Federal Regulatory Affairs, to Mr. Paul D'Ari Common Carrier Bureau, Competitive Pricing Division, September 10, 1997.

<sup>50</sup> Quality Strategies Research (2Q, 1997).

<sup>51</sup> We do not suggest that the Commission should grant price flexibility only after market share losses since, as discussed above, flexibility should be granted when the market is first opened to competition. Had pricing flexibility been permitted earlier, efficient market determinations would have been observed.

<sup>52</sup> According to USTA, as of July 1, 1997 there were a total of 1,231 interconnection agreements.

have led to competitors having access to the tools needed to effectively compete. To date, according to a USTA press release, the RBOCs and GTE have spent more than \$4 billion to open their markets to competitors.<sup>53</sup> This includes expenditures for operational support systems (OSS), new employees, number portability and other capital expenditures necessary to meet the requirements of new entrants to the local market. Nationally, as of October 1997, ILECs (not including Ameritech) supplied approximately 1147 collocation cages and 3,805 NXX codes. Moreover, approximately 927,443 lines were lost to competitors and 6,476 OSS requests were being processed daily by competitors.

In the Bell Atlantic region, more than 33,000 unbundled loops and more than 175,000 resold lines were in service in October of 1997 along with 200,000 interconnection trunks and 401 collocation sites in Bell Atlantic switching centers.<sup>54</sup> Over 6.5 billion minutes of traffic have been exchanged between Bell Atlantic and its competitors in 1997.<sup>55</sup>

In the Ameritech region, as of August 1997, more than 52,000 unbundled loops and more than 253,361 resold lines were in service along with 73,608 interconnection trunks.<sup>56</sup> Ameritech is provisioning lines to competitors in most of its wire centers with 47 CLEC switches deployed in the region by the end of 1997 and 97 estimated switches being deployed by the end of 1998. With capacity to serve 80,000 lines per switch, by the end of 1998, competitors will have the capability to serve over 7.75 million lines. Currently, competitors are serving 120,000 lines in Michigan, 130,000 lines in Illinois and over 300,000 lines nationwide.<sup>57</sup>

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<sup>53</sup> USTA Press release, October 22, 1997, "USTA Says Bell Companies And GTE Have Spent More Than \$4 Billion To Open Their Markets To Competitors."

<sup>54</sup> *Competition Progress Report*, Bell Atlantic, November 13, 1997

<sup>55</sup> This is 1.2% of total Bell Atlantic (both Bell Atlantic and the former NYNEX companies) 1995 local dial equipment minutes according to the FCC's Monitoring Report, CC Docket 87-339, May 1997, Table 4.15. However, it is likely that it represents a much higher percentage of Bell Atlantic revenue.

<sup>56</sup> Statement of Barry K. Allen, Before the Subcommittee on Antitrust, Business Rights, and Competition, U.S. Senate, September 17, 1997.

<sup>57</sup> *Ibid.*

In the BellSouth region, more than 320 CLECs have been authorized to provide service including 41 CAPs that have switching capability.<sup>58</sup> As of August 1997, more than 4,000 unbundled loops and 79,000 resold lines were in service. The data from BellSouth provide a vivid example of how competitors are targeting select geographic areas that provide disproportionate amounts of revenue; 76 percent of resold lines and 65 percent of unbundled loops are concentrated in just two states.<sup>59</sup>

In the SBC region, there are more than 330,000 access lines connected to CLECs including 184,000 resold lines.<sup>60</sup> More than 86,000 CLEC interconnection trunks are operational including 390 E-911 trunks. Also, there are more than 2300 and 60 CLEC T-1 and T-3 facilities, respectively.

More significant are the growth rates: in the Bell Atlantic region, unbundled loops and minutes of use have doubled since January 1997, while resold lines grew by a factor of over seven.<sup>61</sup> In the Ameritech region, since January 1997, unbundled loops have practically doubled, resold lines grew by a factor of twelve and CLEC lines in the region grew by a factor of over four.<sup>62</sup> In the SBC region, in September 1997, 57,000 access lines were converted to resale and 12,000 to 15,000 orders were being processed weekly.<sup>63</sup> In Texas, there was a 140 percent increase in resold lines from June to August 1997.<sup>64</sup>

These facts are significant because the absence of barriers to growth means that the availability of UNEs can make many ILEC customers potential CLEC customers. Therefore,

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<sup>58</sup> Comments of BellSouth, *In the Matter of Commission Actions Critical to the Promotion of Efficient Local Exchange Competition*, CCBPol 97-9, August 11, 1997.

<sup>59</sup> *Ibid.*

<sup>60</sup> Information for SBC comes from [http://intranet.sbc.com/SBCWIN/news/insight/issue002/is\\_2L6.html](http://intranet.sbc.com/SBCWIN/news/insight/issue002/is_2L6.html) or [is\\_page2.html](http://intranet.sbc.com/SBCWIN/news/insight/issue002/is_page2.html) or [is\\_2L8.html](http://intranet.sbc.com/SBCWIN/news/insight/issue002/is_2L8.html).

<sup>61</sup> *Competition Progress Report*, Bell Atlantic, September 26, 1997.

<sup>62</sup> Statement of Barry K. Allen, Before the Subcommittee on Antitrust, Business Rights, and Competition, U.S. Senate, September 17, 1997.

<sup>63</sup> [http://intranet.sbc.com/SBCWIN/news/insight/issue002/is\\_2L6.html](http://intranet.sbc.com/SBCWIN/news/insight/issue002/is_2L6.html).

<sup>64</sup> *Ibid.*

competitive forces can grow quite rapidly, and delaying ILEC price flexibility can have devastating distortionary effects on the market. Delay is particularly troublesome because the first customers to switch suppliers represent higher than average revenues and lower than average costs.

Market forces are sufficiently developed in the special access and dedicated transport markets to constrain ILEC pricing to determine optimal levels of output, investment and price. There is no need for regulation in these markets because these are high volume services for which entrants have been aggressively competing, are offering innovative pricing plans to customers and are not constrained when introducing new services by unneeded regulatory requirements such as tariffs or public interest tests. These competitors are large and powerful organizations, such as WorldCom-MFS, ACSI and Brooks Fiber that have the flexibility to tailor services to customer-specific demands.<sup>65</sup> In addition, special access and dedicated transport customers are large organizations such as AT&T, MCI and Sprint that have the resources and economies to self-supply special access and dedicated transport efficiently if they are unable to obtain cost-based prices for these services.

Moreover, the Commission's Expanded Interconnection proceedings in the mid-1990's permit competitors to terminate their own special access and switched transport access transmission facilities at ILEC central offices, greatly increasing the ability of competitors to combine their own transport facilities with ILEC switches and loops to compete effectively in these markets. There is simply no danger of ILECs exerting market power in the markets for special access and dedicated transport—because they have none. Therefore, regulation is not necessary. While competition is developing at different rates in the remaining carrier access markets, the Commission should realize that the degree of competition is also likely to vary across geographic areas and among particular customers. For this reason, many switched

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<sup>65</sup> As an example of the lack of barriers to entry and growth, Brooks Fiber reported a year-over-year local service revenue increase of 230% and an increase over last quarter alone of 35%. ACC, a New York CLEC with plans to expand to Pennsylvania and Massachusetts, reported its revenue from local and other services increased over 58 % versus a year ago, see Bell Atlantic and NYNEX Comments, *In the Matter of Commission Actions Critical to the Promotion of Efficient Local Exchange Competition*, CCB Pol. No. 97-9.

access services are ready for immediate removal from price cap regulation. Market power is exercised and thus properly measured in specific product and geographic markets, not in national aggregates. A closer examination, conducted market by market, is likely to reveal that the ILEC is not the sole provider and that, in many areas and for many customers, competition is sufficiently developed to remove the remaining services from asymmetric regulatory restrictions.

### **B. FCC Efforts to Eliminate Perceived Barriers to Entry**

The Telecommunications Act of 1996 and a series of subsequent Commission orders to implement the 96 Act greatly increased the ability of other carriers to compete.<sup>66</sup> As a result, interconnection agreements and the mandatory provision of UNEs at cost-based rates reduce the amount of sunk costs<sup>67</sup> required to enter the local exchange and carrier access markets. Under the terms of the Interconnection Order, UNEs may be combined, by any competitor, to provide a carrier access service that is equivalent to conventional access service—provided that the competitor “wins” the end user.<sup>68</sup> This ability allows a CLEC, for example, to purchase unbundled loops, local switching, signaling, and transport to provide carrier access so that the competitor need not invest in loops, switches or transport to provide carrier access. In addition, while in the past access customers were able to bypass ILEC carrier access services through self-supply or obtaining alternative CAP services, UNEs and interconnection agreements now have the effect of increasing alternatives to traditional ILEC carrier access services. UNEs and interconnection agreements facilitate competitive entry by making it economical for

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<sup>66</sup> See note 1 above.

<sup>67</sup> In this context, sunk costs are defined as costs that must be incurred to enter a market but which cannot be recovered if the firm elects to leave the market. All else equal, if an entrant has to incur significant sunk costs, it will be reluctant to enter a market because it could not recoup those costs if its enterprise failed. Resale and the mandatory availability of UNEs means that entrants into the carrier access and local exchange markets do not have to incur the sunk costs of constructing a local exchange distribution network but can use the ILEC's facilities instead.

<sup>68</sup> The requirement that a competitor must “win” the end user in order to compete for access exists because some of the UNEs that are required in order to provide carrier access are dedicated facilities. For example, loops and switching ports are required to provide carrier access but they are dedicated to the end user. A competitor must convince the end user to switch to it in order to obtain the unbundled element.

competitors to enter in geographic areas that may have been unremunerative—for reasons such as insufficient density and volume to warrant investment in facilities—prior to passage of the Act. The Commission has consistently recognized this substitutability between UNEs and carrier access services.<sup>69</sup>

The main effect of the interconnection agreements with UNEs at cost-based rates is to reduce barriers to entry into the local exchange and exchange access markets so that most ILEC customers become potential CLEC customers, provided the CLEC can convince customers to switch. Though competitive alternatives will still come first to high-volume customers in high density areas, most ILEC customers are vulnerable to competitors. Thus, these markets have been fully opened to competition, and the presence of interconnection agreements should give the Commission a sense of urgency to remove barriers that prevent market forces from substituting for regulatory constraints. As of July 1, 1997 there were 1,231 interconnection agreements between ILECs and CLECs. As Figure 2 below indicates, these agreements are fairly evenly distributed throughout the country. They are not clustered in a particular region or concentrated in large states.

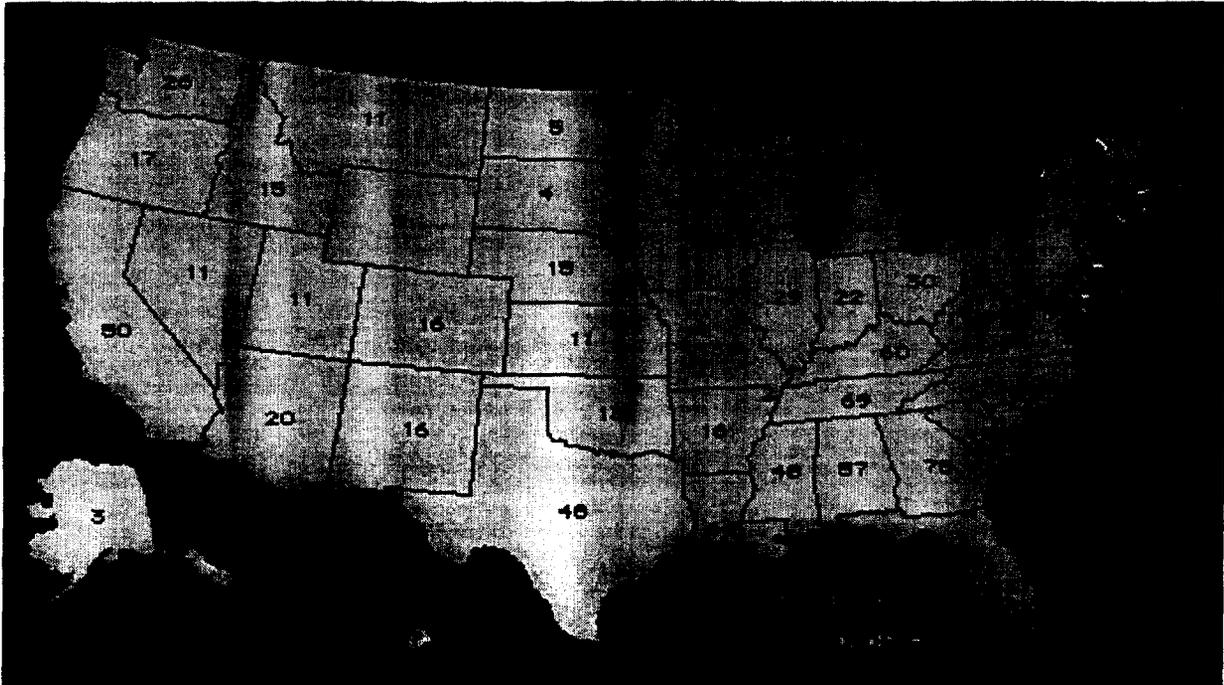
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<sup>69</sup> The Commission has recognized on various occasions that UNEs can be an effective substitute to the current Part 69 carrier access elements. First, in its pricing decision in the Interconnection Order, the Commission temporarily permitted the ILECs to recover CCL charges and the Transport Interconnection Charge (TIC) from purchasers of UNEs, because it was concerned with the substitutability between UNEs and carrier access and the role carrier access has historically played in promoting universal service. Second, in the access reform Notice of Proposed Rulemaking (NPRM), the Commission characterized UNEs as being a “ubiquitous substitute for access services.” (NPRM in CC Docket No. 96-262, December 24, 1996 at ¶170). Finally, the Commission’s Access Reform Order relied heavily on the use of UNEs as substitutes to carrier access:

The new competitive environment envisioned by the 1996 Act threatens to undermine this [access charge] structure over the long run. The 1996 Act removes barriers to entry in the local market, generating competitive pressures that make it difficult for incumbent LECs to maintain access charges above economic cost. For example, by giving competitors the right to lease an incumbent LEC’s unbundled network elements at cost, Congress provided IXCs an alternative avenue to connect to and share the local network. Thus, where existing rules require an incumbent LEC to set access charges above cost for a high-volume user, a competing provider of carrier access services entering into a market can lease unbundled network elements at cost, or construct new facilities, to circumvent the access charge. (Access Charge Order at ¶32).

Thus, as it implements the Act, the FCC has consistently taken the view that the availability of UNEs provides forceful discipline on the ILECs’ pricing of carrier access services.

**FIGURE 2 –NUMBER OF INTERCONNECTION AGREEMENTS BY STATE  
AS OF JULY 1, 1997**



Source: USTA

The recent Eighth Circuit Court of Appeals decision regarding the Commission's Interconnection Order clarifies that CLECs can recombine UNEs but that ILECs are not required to recombine them.<sup>70</sup> The decision thus does not change the fact that competitors have access to substitutes for ILEC switched access using the ILEC network at cost-based rates, as determined by negotiation or ultimately by state regulators. Once UNE rates are established, competitors can use them individually or in combination to provide effective alternatives to current services.

Market conditions have developed to the point where some degree of pricing flexibility

<sup>70</sup> *Iowa Utilities Board v. FCC*, Nos. 96-3321, et. al. (8<sup>th</sup> Circuit July 18, 1997).

in most carrier access markets is required. As discussed above, special access and dedicated transport markets are sufficiently developed to the point where continued pricing and tariffing constraints serve no worthwhile purpose and are in fact anticompetitive. UNEs facilitate entry into the market by eliminating the sunk costs of constructing a ubiquitous network, which substantially reduces overall barriers to entry. Because these markets are subject to entry with low sunk costs, efficient competition requires symmetry in the regulatory treatment of entrants and the incumbent so that customer satisfaction determines the market outcome rather than the tilt of arcane regulatory procedures. As a result, services which meet these characteristics should be identified and removed from price cap regulation. For those remaining carrier access services where competitive forces are still developing, an objective and clear process should be established by the Commission to implement additional levels of pricing flexibility as competition evolves.

#### **IV. RELEVANT ECONOMIC GUIDELINES**

##### **A. Importance of specific, identifiable and quantifiable triggers**

Pricing and regulatory flexibility has historically been absent in the carrier access market.<sup>71</sup> While some of the regulatory requirements mentioned above should have been eliminated in the past irrespective of the potential or actual state of competition—e.g., geographic averaging of access rates—the current economic and regulatory environment compels the Commission to establish a process that will phase out redundant regulatory requirements that constrain pricing flexibility as competition increases. Our fundamental recommendation is that even though there is no economic “bright line” for moving between phases of flexibility, the need still exists for objective criteria so that regulation decreases as competition increases. This process should be established only to handle those remaining

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<sup>71</sup> While waivers from particular FCC rules could be requested, carrier access prices were generally set equal to their fully-distributed accounting costs as determined by Part 69 of the Commission’s rules. Seven years of price cap regulation has helped to rationalize the pricing of some access elements, but, in general, there has been little relationship between access element prices, market conditions or economic costs.

carrier access services where competitive forces are not sufficiently developed to constrain prices and to lead to eventual deregulation.

Weighing the costs and benefits of implementing regulatory flexibility is much simpler in the abstract than in the real world. Generally, telecommunications markets are neither perfectly competitive nor perfectly regulated, and the correct question is therefore not whether a given firm can exercise excessive control over price in a given market but whether the benefits of a proposed regulatory modification will outweigh the costs in the "imperfect" markets in which telecommunications services are sold and regulated. The question regulators need to answer is not whether ILECs have any market power,<sup>72</sup> but rather how much control over market price is too much and thus requires continued price regulation?

While there is general agreement on the indicia of competition in a market, there is likely to be no agreement in a litigated case concerning the degree of control over price that should trigger reduced regulatory constraints. For example, how much weight should be given to the absence of entry barriers as compared with the absence of entry? To what extent does the threat of potential entry discipline the pricing of a firm with a large market share? Can switched trunk-transport and special access be treated as belonging to the same relevant market? While economists can perform quantitative studies of these issues, the determination of the effect of any proposed change in regulation on price, output, investment and service quality will inevitably require judgement on the part of policymakers. Given that economic theory supplies no clear and unequivocal answers and considering the difficulty involved in measuring competition precisely, especially in an adversarial setting, it is important that readily available and easily verifiable criteria be used by policymakers. The triggers that are used to remove successive regulatory restrictions must be known, measurable, and observable to decrease the likelihood that unneeded asymmetric regulations and regulatory proceedings will distort the competitive process.

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<sup>72</sup> We generally do not regulate prices in concentrated and imperfectly competitive markets such as soft drinks, even though large firms provide differentiated products and have some control over price.

While economics provides no clear and unequivocal answers to the question at hand, economic theory does provide important insights which, when combined with objective criteria, can be used to determine the pace of regulatory reform. For firms to exercise market power, two conditions must hold: (i) there must be little competition from existing firms producing substitutes for the service in question; and (ii) entry into the market by new competitors must be blocked by significant legal or economic barriers.

Although market concentration is a proper starting point for evaluating alleged market power, care must be taken not to equate market share with market power. Basing an analysis on market share or concentration is likely to lead regulators astray because current market share is fundamentally backward looking and fails to put sufficient weight on current and future developments.<sup>73</sup> While this tends to be the case in general, it is particularly harmful in technologically dynamic markets like telecommunications. As one FCC staff member has observed,

Given the technology of the telecommunications industry, many markets will probably be characterized by the presence of one or more firms with a predominant market share. Under well-accepted precedent, this basic condition alone does not indicate that a market is performing poorly. This is why, in the context of telecommunications, the analysis must always move beyond [market concentration] and toward the evaluation of the elasticities of supply and demand and, in particular, the presence (or lack) of barriers to entry.<sup>74</sup>

More important than market concentration is the requirement that consumers have choices available to them. For this reason, when analyzing market power it is important to look at the productive capacity available from competitors. As recognized by the Commission in its AT&T Non-Dominant Order, the appropriate measure of size for network-based telecommunications markets is generally capacity.<sup>75</sup> For carrier access markets, capacity

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<sup>73</sup> A more insidious problem is that shares are frequently calculated for things other than markets. For telecommunications services where a small number of customers are responsible for a large fraction of demand, a high average share can conceal low market shares in the economically relevant markets.

<sup>74</sup> L.J. Spiwak, "Reorienting Economic Analysis of Telecommunications Markets After the 1996 Act," *Antitrust*, Spring 1997 at 34.

<sup>75</sup> *In the Matter of Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier*, 11 FCC Rcd 3271, (continued...)

measures must be tempered by addressability. That is, if rivals have capacity available that can "address" a significant number of customers and that can be brought on line at low additional cost, the ILEC cannot exercise market power, and therefore, regulatory constraints should adjust accordingly.

After an analysis of current competition, attention generally turns to conditions of entry into the market.<sup>76</sup> Absent barriers to entry, any elevation of price above the competitive level would attract entry, expand market supply and reduce the market price towards the competitive level. Entry barriers, therefore, are a necessary condition for market power. A thorough analysis of entry conditions must include evaluation of the extent of sunk costs of entry. In evaluating market power, sunk costs are key to measuring barriers to entry. If sunk costs are not important requirements of entry, competitors can enter and exit the industry at relatively low costs to take advantage of any profitable opportunities in the market. Therefore, to assess the conditions of entry in the relevant market, the Commission should analyze the extent of legal and regulatory barriers to entry and characterize the degree to which entry (or exit) would entail commitment of sunk costs for potential entrants. If entry has taken place at all, entry barriers could not have been insurmountable.

In implementing these guidelines, two additional considerations should be observed. First, the availability of interconnection agreements, UNEs at cost-based prices, and resale have reduced the level of sunk costs required to enter the local exchange and carrier access markets, and prospective regulatory policy must take into account this reduction in entry barriers. Second, when evaluating the state of potential and actual competition, it is important that measurement be made in a properly defined economic market. For local exchange and carrier access services, geographic markets are generally small, since particular customers cannot travel to obtain services. For practical purposes, market areas can be defined by common

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(...continued)

(1995).

<sup>76</sup> Of course, if current competition is sufficient to rule out the exercise of market power, it is not necessary to consider barriers to entry.