

**IMPROVING LOCAL EXCHANGE COMPETITION:
REGULATORY CROSSROADS**

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EXECUTIVE SUMMARY

Failure to create effective local telephone competition may be costing consumers over \$19 billion a year. The best hope for remedying this situation is to complete implementation of the Telecommunications Act of 1996. Not surprisingly, the Bell Operating Companies (BOCs) oppose this view, arguing instead for permission to compete in long distance telephone services in order to offer “one stop” shopping services. Allowing the BOCs to compete in long distance prematurely, before the emergence of effective local competition is assured, is likely to prolong their monopoly power, guaranteeing the continuation of “one choice,” not “one stop” shopping and denying consumers the substantial gains promised by increased competition.

The development of our national information infrastructure is severely hampered by our inability thus far to introduce effective competition into local telephone services. Prospective competitors face significant economic entry barriers if they seek to compete with the entrenched incumbent local service provider. While competition has flourished in related markets such as those for long distance services and customer premises equipment, local exchange telephone service has remained a monopoly, necessitating inefficient direct regulatory oversight.

With the Telecommunications Act of 1996, the nation embarked on a bold effort to introduce effective local competition by eliminating economic and regulatory entry barriers. The Act recognized that competitors would need to use portions of the incumbent's network to overcome these entry barriers. Moreover, the Act anticipated that its success would reduce the local incumbents' market power and hence the incumbents would not cooperate without incentives.

Almost two years after passage of the Act, there is still no significant local competition in the United States. This lack of progress is due, in part, to the failure to implement successfully the Act's pro-competitive provisions. These provisions require the monopolist incumbent local exchange carriers to “unbundle” their network and provide essential facilities to competitive local exchange carriers. Such provisions are necessary to overcome the significant economic entry barriers faced by potential competitors, and their successful implementation depends on the cooperation of the incumbent carrier.

Under the Act, the Bell Operating Companies, incumbent monopolists, are prohibited from competing in in-region, interLATA (long distance) services until these provisions are successfully implemented and the existence of effective local competition is assured. This restriction is necessary both to provide an incentive to the Bell Operating Companies to cooperate with the Act and to protect emerging competition in local markets and existing competition in related markets such as long distance services.

The failure to realize effective competition at this stage is due both to the failure to carry out the objectives of the Act and to the significant challenges of successfully creating

competition in local telephone markets where success in large measure depends on the cooperation of an entrenched incumbent.

The key to accelerating the emergence of local competition is to complete the implementation of the Act and complete the reform of universal service mechanisms anticipated by the Act. The solution is not to undermine the Act by prematurely relaxing the restrictions against participation by Bell Operating Companies in long distance services.

The nation stands at a regulatory crossroads where we face three options. First, we could continue with the status quo. Under this scenario, progress towards local competition will be slow and piecemeal because failure to implement fully the pro-competitive provisions of the Act prolongs the incumbents' market power. Second, we could declare that the Act is a failure and permit the Bell Operating Companies to compete in long distance services before the success of local competition is assured. This would increase the local incumbents' market power significantly, potentially dooming prospects for the emergence of effective local competition. This is the policy recommended by Peter Huber and, not surprisingly, supported by the local carriers. Third, we could complete implementation of the Act, and provide competitors with a real opportunity to compete fairly and on an equal footing with the incumbent. This last approach offers the best policy for realizing the benefits of an enhanced national information infrastructure.

The Act Represents Progress Toward Local Competition

Substantial gains to consumers – through lower prices, improved quality, and greater choice – will accompany true competition in telecommunications markets. However, for consumers to benefit from this opportunity, they must be able to choose among multiple providers of services.

This choice is not currently possible because of the lack of competition in local markets. Some competition exists for commercial customers in select metropolitan areas, but residential customers have no generally viable alternative to their incumbent local exchange carrier. The lack of competition in local exchange markets can be seen in recent trends in prices for local services, which have actually increased in recent years.

The absence of effective local competition is most apparent when one contrasts the experience to the performance of long distance. Prices for long distance services have declined significantly since 1984, even after accounting for declines in access charges. Furthermore, all classes of residential customers have benefited from these price declines.

The relative lack of local competition is not surprising. Introducing local service competition is more difficult than introducing long distance competition for three reasons: First, the capital investment per customer is much larger for local services than for long distance. Second, entry into local services requires competitors to cooperate more extensively than was the case in long distance. Third, the present technology of local exchange service offers less flexibility to providers in where they locate facilities.

Even if difficult to introduce, local competition is important for consumers. We estimate that the welfare loss from local monopoly power exceeds \$19 billion each year.

Against this backdrop, the regulatory process is not working as well as it could to deliver the gains made possible by effective competition. Failure to implement key provisions of the Act have forestalled the realization of gains from increased competition. In addition, the continuation of retail price regulation and the related failure to reform universal service funding mechanisms slow the progress toward competition.

The failure of the regulatory process to work more smoothly and quickly does not imply the desirability of immediate deregulation, however. In passing the Act, Congress

recognized that, for competition to be able to replace government regulation as the arbiter of industry performance, competition in local services must first be promoted. Congress enacted a set of interconnection and unbundling requirements intended to place the incumbent local exchange carrier and new competitors on an equivalent footing with respect to essential facilities. Congress acted after a decade of state-by-state attempts at regulatory reform made clear the need for a national mandate to promote local competition. Responsibility for specifying the detailed rules for achieving this goal was assigned therefore to the Federal Communications Commission (FCC).

This assignment of responsibility was appropriate: National rules are necessary for timely implementation of the Act. State-by-state differences are not so much a consequence of technology and business requirements as an artifact of cumbersome regulatory oversight. In addition, with each passing year, it has become clearer that telecommunications and information technology are engines for economic growth that do not respect traditional state regulatory boundaries. Finally, assigning national authority to establish pricing and interconnection rules for essential facilities that will be used by carriers to offer competing retail services is compatible with continued state authority over retail pricing. Increased competition in local services and affordable pricing for retail services are reconcilable if access charges and universal service subsidy mechanisms are reformed as required by the Act.

Rapid implementation of the Act's unbundling and interconnection provisions offers the best option for delivering competition to all local market segments. The incumbent local exchange carriers have powerful incentives to continue to delay implementation of these rules, while seeking regulatory or judicial relief that would allow them unfettered opportunities to exploit their monopoly power over local markets. National rules promulgated by the FCC and adopted by the state public utilities commissions would reduce opportunities for incumbent firms to resist implementation of the Act. However, the recent decisions by the Eighth Circuit Court of Appeals have undermined the FCC's rules. In light of these decisions, the Act's precondition against allowing the Bell Operating Companies to compete in in-region interLATA services becomes even more important as an incentive to the Bell Operating Companies to comply with the Act. Premature relaxation of these restrictions will increase both incentives and opportunities for the Bell Operating Companies to engage in anticompetitive behavior.

Immediate Deregulation Is Not the Answer

Some analysts – notably Peter Huber of the Manhattan Institute – offer the opposite view of the current competitive and regulatory situations. Huber argues that immediate deregulation is the most fruitful means of stimulating the benefits of competition for local residential customers. In contrast to the logic of the Telecommunications Act of 1996, he maintains that allowing entry by Bell Operating Companies into long distance markets so that those companies can offer “one-stop shopping” by bundling local and long distance services will force interexchange carriers to be more aggressive in competing in local markets.

Huber's analysis rests on five assumptions: (1) entry in local markets is easy; (2) long distance markets are imperfectly competitive; (3) local residential service is subsidized, but, overall, local service breaks even; (4) there are significant gains from allowing local company entry into long distance; and (5) entry by Bell Operating Companies into long distance will accelerate backbone investment in the Internet. The first three assumptions explain why Bell Operating Companies would want to enter long distance markets, while interexchange companies would not want to compete for local residential customers. The last two bolster his claim of large gains from immediate deregulation.

As we show, none of these assumptions is accurate. Indeed, we show that: (1) entry into local competition is difficult; (2) long distance services are very competitive; (3) interexchange carriers are eager to compete for local customers; (4) local service earns excess profits; (5) the most substantial available welfare gains are from increasing local competition; and (6) there is no evidence that BOC entry will increase the pace of investment in the Internet.

In essence, Huber is arguing that the best way to promote network innovation is to maintain the local monopoly and extend it by allowing the Bell Operating Companies to enter long distance services prematurely. We disagree. If the BOCs are permitted to enter long distance service while they maintain their local monopolies, only the BOCs will be able to offer “one- stop” shopping, and the BOCs’ monopolies will be extended to market for bundled local and long distance services. Competitive markets offer the best hope for delivering advanced network services to consumers. To promote competition, we need to implement the Act.

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I. TELECOMMUNICATIONS ACT OF 1996 AND PROGRESS TOWARD LOCAL COMPETITION

The Telecommunications Act of 1996¹ (the Act) provided a new regulatory framework for promoting competition in all telecommunications markets. The principal challenge faced by the Act is to introduce effective competition into local telephone markets. Almost two years after passage of the Act, there is still no significant local competition in the United States. The lack of progress is due, in substantial part, to the failure to implement successfully the Act's pro-competitive provisions. These provisions require the monopolist incumbent local exchange carriers (ILECs) to unbundle their network and provide essential facilities to competitive local exchange carriers (CLECs).² Such provisions are necessary to overcome the significant economic entry barriers faced by potential competitors, and their successful implementation depends on the cooperation of the incumbent carrier.

Under the Act, the largest of the ILECs, the Bell Operating Companies (BOCs), are prohibited from competing in in-region, interLATA services until these provisions are successfully implemented and the existence of effective competition is assured. This restriction is necessary both to provide an incentive to the BOCs to cooperate with the Act and to protect emerging competition in local markets and existing competition in related markets such as long distance.

The failure to realize effective competition at this stage is due both to the failure to carry out the objectives of the Act and to the significant challenges of competing successfully in local telephone markets against an entrenched incumbent.³ The key to accelerating the emergence of local competition is to complete the implementation of the pro-competitive unbundling provisions of the Act and complete the reform of universal service mechanisms anticipated by the Act. The solution is *not* to undermine the Act by prematurely relaxing the restrictions against BOC participation in long distance services.

In the following three sub-sections of Section I, we explain the rationale behind the Act's pro-competitive provisions; analyze the state of current competition; and examine the remaining obstacles to the successful emergence of local competition. Section II examines the counter-position taken by Peter Huber and

explains why his recommendation for premature deregulation should be rejected. Section III summarizes our conclusions.

A. PUBLIC INTEREST GOALS OF THE ACT AND THE PROMOTION OF LOCAL COMPETITION

The goal of the Telecommunications Act of 1996 to promote competition requires a substantial shift in the regulatory paradigm. Instead of directly regulating for an indefinite period the behavior of the monopolist incumbent local exchange carriers, regulators will manage the transition to competition. The Act sought to eliminate both regulatory and economic entry barriers to open local markets to competition. With the emergence of effective competition, market forces will increasingly and ultimately replace direct regulatory oversight as the guarantors of consumers' well-being and the health of the telecommunications sector of the economy.

Competition will benefit consumers through lower prices, improved quality, and greater choice. Such benefits include allowing consumers to engage in “one-stop” shopping, wherein they can purchase both long distance and local services (and perhaps other services such as Internet access) from a single provider. However, for consumers to benefit from this opportunity, they must be able to choose among multiple competing suppliers for the service bundle. This choice is not currently possible because of the lack of competition in local markets.

The Act seeks to promote local competition via three major initiatives. First, the Act enables the CLECs to make use of the existing telephone infrastructure by requiring the ILECs to offer unbundled network elements (UNEs) and interconnection services at non-discriminatory, cost-based rates, and by requiring the ILECs to offer wholesale versions of the ILEC's retail services at a total service resale discount that reflects the costs which should be avoided by the ILEC when the CLEC resells the service. These unbundling and resale provisions, embodied in Sections 251 and 252 of the Act, are needed to overcome the economic barriers associated with constructing a local telephone network. It is neither feasible nor efficient for an entrant to replicate all of the facilities of the ILEC in order to provide service – especially in the short term. Requiring the

ILEC to offer UNEs and interconnection services at the forward-looking incremental cost "levels the playing field" because both the ILEC and CLEC can use the existing network infrastructure at its economic cost, which approximates the prices that would prevail if the market were already competitive.

Second, the Act calls for the reform of access charges, which are currently set significantly above the economic cost for providing these services. This regulatory distortion is inefficient because it increases the prices of long distance services, thereby distorting consumer behavior and encouraging potentially wasteful investments to bypass the local network and avoid these uneconomic charges. The above-cost access charges were instituted following the divestiture of the Bell System in 1984 as a mechanism for maintaining the subsidy flows from long distance to local services. Historically, these implicit subsidies were justified as a mechanism for keeping local telephone rates low to promote universal service. Although inefficient, these subsidies were compatible with the promotion of long distance competition because they were paid by all competitors. However, continuing these subsidies is fundamentally inconsistent with the transition to a competitive marketplace because the subsidies distort the economics of local competition and provide the incumbent carriers with a subsidy that can be used to fund anticompetitive activity. To remove this distortion, the Act requires reform of access charges.

Third, the Act calls for the reform of universal service mechanisms. To reconcile the goal of promoting universal service with the goal of promoting local competition, existing retail pricing policies and universal service mechanisms must be changed. Universal service must be based on explicit subsidies that are collected and distributed on a competitively neutral basis. In addition to reforming access charges, achieving the goal of competitive neutrality requires establishing portable universal service subsidies that follow the subscriber and offset any gap between regulatory-constrained retail prices and the economic cost of providing service to the subscriber. When properly reformed, both CLECs and ILECs should have an economic incentive to provide service to all subscribers – including those targeted for universal service subsidies. In the absence of universal service reform, the ILECs can argue that above-cost prices on business services, access services, and vertical features are necessary to offset (allegedly) below-cost pricing to residential subscribers. However, it is not clear that residential services are currently priced below incremental cost; it is possible, as we argue below, that competition could result in a decline in average prices for all services. Furthermore, the lack of universal service reform distorts CLEC investment decisions under the Act.

Of the three pro-competitive reforms required by the Act — network unbundling, access reform, and universal service reform — network unbundling is the most difficult because it depends on the most extensive and detailed cooperation of the incumbent monopolist. This difficulty is important because unbundling is a logical precursor to the other policies. Successful unbundling requires that the prices be based on economic costs and these must be determined in order to reform access and universal service mechanisms properly.

The Act recognizes that the ILECs have little incentive to cooperate in a process that is intended to reduce their monopoly control over local exchange services, and so implementing these provisions is going to be extraordinarily difficult. Therefore the Act anticipated that continuing regulatory oversight of the ILECs will be necessary as long as they retain significant market power to protect the competitive process during the transition. In addition, the Act includes a number of special provisions which apply to the incumbents — principally the BOCs -- and are intended to limit their ability to exploit their market power.

Section 271 identifies the preconditions and requirements which must be satisfied before the FCC may approve a BOC's application to compete in interLATA services. These are intended to assure successful implementation of the policies required by Section 251 *before* the restriction against competing in interLATA services is removed.

The emergence of effective competition will reduce the need for direct regulatory oversight. In the absence of effective competition, however, complex regulatory controls are often needed to assure that consumers' interests are protected. In such cases, it is common to restrict the regulated firm's participation in unregulated, competitive markets in order to prevent the firm from either harming the competitive process in other markets or circumventing regulations in its home market.

The restriction on BOC participation in interLATA markets addressed by Section 271 of the Act originated in the Modification of Final Judgment (MFJ), which governed the divestiture of the former Bell System into a long distance company (AT&T), which would face competition, and into the seven Regional Bell Operating Companies (RBOCs), which would be regulated as local monopolists.

While the MFJ achieved its goal of establishing vigorous and sustainable competition in long distance markets by the end of the 1980s, local exchange markets have remained monopolized by the BOCs. Despite this fact, the BOCs have lobbied in judicial, legislative, and regulatory arenas for freedom to enter interLATA markets since almost immediately after divestiture.

Before the Act was passed, the BOCs lobbied to have control over their entry into interLATA markets taken away from the judiciary and placed before Congress and, in the lawmaking process, accepted the provisions of Section 271 as being less onerous than the MFJ. One and one half years later, the BOCs appealed to the judiciary to invalidate Section 271 as unconstitutional. Recently, a federal judge in Texas ruled in their favor, and that decision is now in the beginning of the appeal process. The factual circumstances regarding local competition have still not changed since 1984. The BOCs are still monopolists that are capable of engaging in the same kind of behavior that the MFJ sought to prevent.

The provisions of Section 271 identify the circumstances under which the BOC entry restriction will become unnecessary. To eliminate this restriction prematurely would at a minimum necessitate an increase in alternative regulatory mechanisms to attempt to safeguard against anticompetitive behavior by the BOC. Moreover, any such alternatives would be less effective at protecting competition and more cumbersome to implement. In fact, removal of this form of regulation would necessitate an overall *increase* in the regulatory burden, while at the same time diminishing its effectiveness in preventing anticompetitive conduct.

As of the end of 1997, the Act has still not been successfully implemented. Although SBC, Ameritech, and BellSouth have argued that they have met the requirements of Section 271 in Oklahoma, Michigan, South Carolina, and Louisiana, the Department of Justice and the FCC have soundly rejected BOC requests to enter in-region, interLATA services. Review of the state of competition in each of these cases indicates that the markets remain monopolies and that important pro-competitive provisions of the Act are still not implemented (see Exhibit 1). Many states still have not approved prices for UNEs nor finalized the terms under which UNEs will be made available to CLECs. In no state have the ILECs completed implementation of non-discriminatory electronic interfaces to facilitate the transferring of customers to CLEC accounts – even though the implementation of such interfaces is required. Moreover, access charges are still significantly above cost and both federal and state universal reform is incomplete.

The failure to implement the pro-competitive provisions of the Act fully might be less worrisome if there were substantial evidence that local competition is progressing irrespective of the Act. Unfortunately and understandably, as we explain in the next sub-section, local competition is emerging only slowly.

B. PROGRESS TOWARD LOCAL COMPETITION

Currently, there is no significant local competition, while long distance markets are effectively competitive. In the remainder of this section, we compare the extent of local and long distance competition, explain why introducing local competition is so much more difficult, and discuss some of the ways in which the incumbent may seek to exploit its market power to hinder the emergence of local competition.

B1. STATUS OF LOCAL COMPETITION

While the central development required to realize the goals of the Telecommunications Act of 1996 is the emergence of effective local competition, there is little competition in local exchange service at the present time. Some competition exists for commercial customers in select metropolitan areas, but residential customers have no generally viable alternative to their incumbent local exchange carrier (see Exhibit 2). The BOCs have a *de facto* monopoly, which grants them significant market power over facilities that are essential for competition in both long distance and local markets.

The lack of competition in the local exchange markets can be seen in recent trends in prices for local service. Prices for local services have actually *increased* (see Exhibit 3A and 3B). According to a recent study by the Consumer Federation of America, the ILECs are “earning \$4.5 billion annually in charges resulting from excess profits at the expense of captive telephone ratepayers.

Some progress, however, is being made toward introducing local competition. The CLECs are investing substantial amounts to enter local services (see Exhibit 4), but much greater investments are required before the CLECs can offer meaningful facilities-based competition. For example, in 1996, the total telecommunications plant in service for all local exchange companies was \$292 billion. In 1996, the local exchange carriers had 23,661 central office switches, 159 million local access lines, over 2.5 billion kilometers of copper wire, and gross plant investment expenditures of \$22.4 billion. Matching this level of installed plant facilities will take time.

The progress of local competition will be aided by continued advances in local access technologies that permit wireless and other alternatives to the copper loops provided by the ILEC. Early versions of these technologies are being deployed on a limited basis, but viable, commercial-scale alternatives to using the incumbent's local access facilities do not yet exist. Therefore the market power of the BOCs will persist for some time.

Thus, while local competition is emerging, there is no significant competition that can constrain the market power of the incumbents at the present time. Such competition as the incumbents face is limited to commercial customers in major metropolitan areas. For widespread competition to emerge for residential customers and all customers outside of high density areas, it is essential to implement the pro-competitive network unbundling requirements of the Act. The failure of the BOCs to demonstrate adequately that these policies have been successfully implemented in any state thus far indicates how premature it would be to permit the BOCs to participate in interLATA services at this time.

The absence of effective local competition is most apparent when one contrasts the experience to the performance of long distance services. For example, prices for long distance services have declined significantly since 1984, even after accounting for declines in access charges. Exhibit 5 shows that AT&T's Average Revenue Per Minute (ARPM) for switched interstate toll fell over 66 percent in real terms since divestiture -- and, net of access, prices declined by 44 percent. Moreover, these declines were experienced across service categories, and were even larger for some services. For example, Exhibit 6 shows that between 1990 and 1997, real prices for consumer dial direct, business outbound, and business inbound toll services declined between 23 and 51 percent, offering benefits to all types of consumers. Exhibit 7 demonstrates that all classes of residential customers -- both high and low usage -- benefited from these price declines. Furthermore, the decline in ARPM net of access charges understates the true magnitude of the benefits delivered to customers because the price declines do not reflect improvements in service quality.

Several BOC experts have presented narrow and misleading views of the data attempting to demonstrate a contrary proposition. These analyses proceed by selectively choosing individual tariffs or the starting and stopping dates for the time-series, or by relying on flawed telecommunications price indices. A common shortcoming of these studies is a failure to consider adequately the effects of discount programs and other new services on the menu of prices faced by consumers. Because it is a complex task to compare baskets of services (*i.e.*, calls which differ by distance, time of day, and enhanced billing and service features), we advocate focusing on the actual prices consumers pay as measured by the average revenue per minute realized by long distance carriers. When performed on this basis, it is clear that real price declines for long distance services have been substantial.

Moreover, the close causal association in long distance markets between effective competition and price declines is directly observable from advertisements and marketing strategies employed by long distance carriers. Each of the major carriers has offered innovative discount pricing proposals, all of which emphasize savings as an important inducement to customers. Although many of these programs are targeted to particular classes of consumers, there are programs for every group. The many residential calling programs (*e.g.*, flat-rate plans, bloc-of-time plans, discounts for frequently called numbers, and tie-ins to airline mileage-reward plans) demonstrate that the benefits of these programs are widely available to all customer segments.

Finally, potent evidence of consumer sovereignty in long distance markets is provided by the pace with which customers shift among long distance service providers. This information offers a clearer picture of the level of competition in the market than a simple comparison of overall market shares. For example, AT&T experienced a 19 percent churn rate in 1992, and over 42 million long distance subscribers changed in 1995. The rate of churn rose still further in 1996, with 53 million customers changing carriers.

Consideration of the relative levels of competition in local and long distance services is helpful for assessing the public interest benefits of allowing the BOCs to participate in in-region interLATA services.

Because long distance markets are already effectively competitive – as we explained above – additional entry is unlikely to provide significant long term benefits to consumers of interLATA services.

In contrast, local markets are monopolized. Competition is therefore likely to deliver significant benefits in terms of improved cost efficiency, expanded customer choice, and lower prices. While direct regulatory oversight has sought to restrain the ability of incumbents to exploit their market power, this oversight is imperfect. The Act is motivated by the recognition of the superiority of market competition over traditional regulatory oversight.

One potential benefit from permitting the BOCs to compete in providing interLATA services is that this entry will allow both BOCs and the large interexchange carriers (IXCs) to offer “one-stop” shopping bundles of integrated services. Consumers may benefit from the opportunity to choose among bundled offerings from multiple suppliers. Vertically integrated carriers will be able to take advantage of scale and scope economies that may lower costs and prices. Carriers will have greater flexibility to provide innovative service offerings. These benefits, however, depend on the emergence of effective local competition first. Effective local competition can emerge only after the pro-competitive interconnection and unbundling provisions of the Act are successfully implemented.

In contrast, if the BOCs are permitted to compete in interLATA services prematurely, the benefits of “one-stop” shopping will be transformed into “one-choice” shopping – a significantly less attractive option than exists currently. The BOCs will have both a stronger incentive and more opportunities to resist successful implementation of the Act and to delay the emergence of effective competition.

Although it has taken well over a decade for long distance services to achieve the present level of competition, successful implementation of the Act could significantly shorten the time to develop effective competition in local services, in spite of the larger economic barriers to achieving this goal. Below, we consider some of the reasons why it is so difficult to introduce local telephone competition.

B2. CHALLENGE OF INTRODUCING LOCAL COMPETITION

The absence of effective local competition is not surprising. Introducing local service competition is more difficult for at least three reasons. First, the capital investment per customer is much larger for local services than for long distance. In 1995, the investment per subscriber line was \$1,828 for local services compared to \$255 for AT&T -- over a sevenfold difference. This difference implies that the BOC is likely to retain its role as the monopoly provider of facilities in many local markets for a number of years.

Second, entry into local services requires competitors to cooperate much more extensively than was necessary in introducing competition in long distance markets. In local services, entrants will need to purchase essential unbundled network elements, wholesale services, and interconnection services from a competitor. During the early days of long distance competition, competitors needed to both interconnect with AT&T and lease wholesale transport facilities, but this dependence was never as great and did not last as long as the CLECs' dependence on the BOC is likely to last. In the long distance market, the option to build long distance transport bypass facilities was less capital-intensive and offered more effective discipline than the analogous option of local bypass in local exchange markets.

Third, the present technology of local exchange service offers less flexibility to providers where they locate facilities than in long distance. To provide local loop service, a carrier needs loops that go to each house or business. To provide long distance service, a carrier can locate its point of presence much more flexibly -- its only constraint is that it sits within the LATA. The same is true for the location of switches and long haul transport facilities. This added flexibility in providing interLATA services lowers the costs of constructing facilities and increases opportunities for competition among facilities over a wider geographical range.

Delivering effective competition to residential consumers is especially difficult. First, residential customers have lower demand and are often distributed less densely than business customers. The relatively low demand from residential customers makes them less attractive candidates for alternative access technologies to bypass the incumbent's facilities (and thereby reduce their dependence on incumbent cooperation). Moreover, it

is rational to expect that CLECs will invest in facilities first in high-density commercial areas because of scale and scope economies, adding capacity incrementally in neighboring areas. This helps explain why Competitive Access Providers (CAPs) such as MFS or TCG have been most successful in providing service in dense commercial markets in major metropolitan areas. There are also economies of scale associated with marketing, customer service, and other non-network costs that are more significant for commercial customers than for residential customers.

Second, current retail rates and access charges are significantly above cost for many business services and vertical features, and are regulated to be below cost for certain high-cost residential subscribers. These pricing anomalies are a legacy of the historical system of implicit subsidies, traditionally justified as a mechanism for promoting the goal of universal service. Such anomalies distort competitive entry decisions by artificially increasing the attractiveness of competing for commercial customers and high-value residential customers relative to residential customers generally. Effective competition will eliminate these distortions by driving prices toward incremental economic costs. Hence universal service reform and access charge reform must be completed if the dual goals of promoting local competition for all customer classes and universal service are to be reconciled.

For these reasons, it is reasonable to expect CLECs to concentrate first on providing facilities-based service to commercial customers and on serving residential customers via total service resale or UNEs. The total service resale provisions under the Act, when properly priced, would seem to have been attractive because they held the promise of allowing a provider to offer services statewide relatively quickly. However, because resale affords the reseller less control over how the product is offered and priced, there is less scope for innovation.

The successful implementation of the Act's unbundling provisions are therefore most important with respect to delivering effective competition to residential and commercial customers outside of major metropolitan markets. It is in these markets that the CLECs will be most dependent on the opportunity to use

existing ILEC infrastructure to provide services in the short term – and hence most dependent on ILEC cooperation.

Moreover, successful implementation of the unbundling and interconnection provisions will increase pressure to reform universal service and access charges. The pressure to rebalance rates to reflect underlying economic costs will align the interests of both ILECs and CLECs in promoting rapid regulatory reform. In contrast, in the absence of effective local competition, the incumbents benefit from the existing structure of implicit subsidies because these help deter competition and provide a pool of funds to subsidize anticompetitive activities.

B3. OPPORTUNITIES FOR ANTICOMPETITIVE BEHAVIOR BY INCUMBENTS

There are many price and non-price strategies which an incumbent can employ to hinder, directly or indirectly, the emergence of effective competition. Pricing strategies are only the most obvious: If the prices charged for essential inputs are above competitive levels, then entry will be deterred. The ILEC has an incentive to misrepresent cost data and to misallocate costs in order to induce regulators to set prices for UNEs, interconnection, and wholesale services which are too high. The ILEC has an incentive to seek to restrict the range of services and UNEs which entrants may purchase and to argue for inefficient surcharges (*e.g.*, to subsidize its carrier-of-last-resort obligations or to recover historical costs) in order to force prices above economically efficient levels.

In addition to anticompetitive pricing strategies, the ILECs can avail themselves of a wide range of non-price strategies which are often more difficult to detect and deter. Entry into local exchange services is difficult because it requires a huge investment and depends on cooperation from a hostile competitor. While the Act provides the public policy framework for addressing these issues (in the Section 251 requirements), implementation of these rules will be difficult.

Economists have identified several price and non-price strategies which may be employed by a monopolist such as an ILEC to exploit, extend, and protect its market power. First, the monopolist can exploit

its market power by setting prices well above incremental costs. Moreover, the monopolist may choose the range of products based on what maximizes its own profits, not on what consumers most want. In some cases, this optimization results in poor quality (because consumers have no choice but to accept what the monopolist offers); in other cases, there may be excessive investments in features which appeal to only a subset of customers but for which the monopolist can force all customers to pay (*e.g.*, investments in broadband services). Traditionally, regulators have attempted to control these activities by setting quality standards, by determining what capital investments are allowed into the regulated rate base, by setting prices for retail services, and by restricting the monopolist's participation in competitive markets (*e.g.*, long distance services) to protect those markets and to limit the monopolist's ability to circumvent regulatory controls. However, such control is imperfect because the monopolist incumbent local exchange carrier possesses superior information about its costs and consumer demand.

Second, a monopolist may seek to extend its market power by "monopoly leveraging." That is, a monopolist in one market may seek to extend its power to another related market, which is most easily accomplished when the monopolist controls an essential input in the second market. By tying or bundling the purchase of the goods in the two markets, the monopolist can extend its power over both markets. For this reason, the courts have often acted as if there is a *per se* restriction against tying where the firm has market power.

Third, and perhaps most likely, a monopolist is likely to seek to protect its market position by "raising its rivals' costs," a generic expression for a whole class of price and non-price predation and foreclosure strategies. The ILEC can potentially raise an entrant's costs by manipulating any of the price or non-price terms associated with the essential inputs which the entrant requires to effectively compete in the market (*e.g.*, interconnection services, UNEs or wholesale versions of retail services). In addition, the ILEC can provide inferior-quality service unless regulators are vigilant and contracts regarding interconnection, UNEs, and wholesale services are suitably specific in their requirements.

Alternatively, an ILEC may seek to create "customer switching costs" in order to make it more difficult for an entrant to attract new customers -- for example, anything which damages the reputation of the new entrant (*e.g.*, poor-quality service due to slow delivery, maintenance or repair, or noisy local loop facilities) makes it difficult for a customer to learn about new entrants (*e.g.*, misleading advertising by the ILEC), or makes it difficult for a customer who wishes to change suppliers to actually do so (*e.g.*, cumbersome procedures for effecting the transfer of customers to a new local service provider).

While there are obvious direct strategies which may be employed to hinder progress toward effective competition, there are also many indirect strategies which can be as effective in slowing the emergence of local exchange competition. These indirect strategies are even harder to detect and hence even more difficult to deter.

The emergence of local competition is likely to encourage the development of new and innovative products and services, which will further complicate what is already a very complex marketplace. The ILEC will likely conduct business in a wider array of markets of varying degrees of competition and subject to varying degrees of regulatory oversight. Therefore preventing cross-subsidization and other attempts to circumvent regulations by actions taken in unregulated markets will become more difficult.

Moreover, the possibility, on occasion, of an "efficiency" rationale for strategies that have anticompetitive consequences provides the ILEC with ample opportunities plausibly to deny that a particular strategy is being employed for anticompetitive purposes. In the face of rapid technological progress, it may be impossible to reverse the damage caused by the strategy if regulators wait until the damage becomes evident. Even if the ILEC were enjoined from using the anticompetitive strategy in the future, the ILEC can refine its strategies and it has the first-mover advantage of being able to decide when and how to move.

Four classes of examples illustrate these strategies. First, because an entrant requires the ILEC's cooperation in order to arrange interconnection, purchase UNEs, and resell wholesale services, the ILEC can devote insufficient resources to the task of sustaining this cooperation. The promotion of competition will require active cooperation by the ILEC; its neglect or slow response time, therefore, can be quite effective at thwarting competition. As Professor Marius Schwartz has stressed, such anticompetitive conduct can be difficult to police, because "the great asymmetry of information between an ILEC and outsiders about what constitutes unreasonable delay in implementing new systems is likely to make enforcers leery of imposing heavy penalties for perceived foot-dragging."

Second, the ILEC may exploit its ability to discriminate selectively. Because the ILEC controls the timing, design, and scope of its facility upgrades and the services it offers, it can manipulate these activities strategically to affect rivals differentially. It will be quite difficult to prove that an ILEC delayed implementation of a feature required by an entrant because it wished to harm the entrant as opposed to its technical or other inability to respond sooner. Alternatively, an ILEC can choose the level of quality which it offers to all entrants in such a way as to harm particular entrants selectively. For example, the ILEC may argue that it is implementing a minimal-functionality, "lowest-common-denominator" systems interface in order to avoid discriminating against limited-capability entrants when the real motivation is to deny access to increased functionality to more threatening competitors.

Third, seemingly "nondiscriminatory" quality degradation can actually be discriminatory: Entrants to local exchange services must establish a reputation for quality in order to attract customers, and a reduction in overall quality that coincides with the onset of competition would increase the difficulty of acquiring such a reputation. Similarly, local service quality problems which can be assigned to the onset of competition will mislead consumers

regarding the benefits of competition and may make it more difficult for state commissions to implement the requirements of the Act. Finally, a reduction in quality could damage the investments of long distance carriers in their reputations for quality service, narrowing any consumer perceptions that long distance carriers offer better service than the ILEC.

Fourth, while the Act requires the ILEC to cooperate, the Act's provisions and requirements may not be fully understood by the ILEC's employees. The ILEC's employees are likely to associate the onset of competition with increased job insecurity and the language of healthy business competition often characterizes competitors as "the enemy." Therefore, by failing to devote adequate resources to supervising or educating employees of their obligations under the Act, FCC regulations and arbitrated decisions, an ILEC may be able to implement a decentralized, anticompetitive strategy or have it implemented on its behalf by its employees. This is especially difficult to protect against because it does not require centralized coordination; there does not need to be a smoking gun.

Whether the ILEC fails to supervise workers adequately, strategically chooses "nondiscriminatory" service standards so as to harm competitors, allows overall quality to degrade, mobilizes opposition to competition, or utilizes other anticompetitive strategies, the effect will be the same: *Progress toward effective competition will be slowed.*

It is the absence of effective local competition that affords the ILEC substantial market power that can be used to protect its position against entrants and to frustrate efforts to force it to comply with the pro-competitive requirements of the Act. For this reason, continued regulatory oversight remains important.

C. REGULATORY PROCESS AND THE ROLE OF THE FCC

Against this backdrop, the regulatory process is not working as well as it could to deliver effective competition. However, as we explained above, the Telecommunications Act of 1996 represented a bold paradigm for regulatory reform. Failure to implement the major provisions of the Act is a principal

impediment to realizing the Act's objectives (see again Exhibit 1). In addition, the continuation of retail price regulation and the related failure to reform universal service funding mechanisms slow the progress toward competition.

Does the failure of the regulatory process to work more smoothly and quickly imply advantages of a strategy to deregulate more rapidly? The answer is certainly "no." The Act recognized that introducing effective local competition while maintaining a commitment to universal service represents a significant challenge requiring oversight for many years. The salient problem remains the difficulty of enforcing cooperation by a participant lacking an economic incentive for cooperation. In this regard, the recent decision by the Eighth Circuit Court of Appeals to strike down part of the FCC's 1996 interconnection order is a major setback for progress toward competition because, by calling into question the authority of the national regulatory agency, that decision fosters hope for the ILECs that they may be able to delay or forestall compliance with the Act.

In passing the Telecommunications Act, Congress recognized that, for competition to be able to replace government regulation as the arbiter of industry performance, it is necessary to promote competition in local services. Local service competition, however, cannot emerge unless potential competitors can make use of the existing facilities of the incumbent local exchange carriers – it is too expensive and takes too long to replicate the local infrastructure of the incumbent carriers while trying to compete at the same time. In recognition of this fact, Congress enacted a set of "interconnection" and "unbundling" requirements intended to place the incumbent carrier and new competitors on an equivalent footing with respect to essential network facilities. Congress acted after a decade of state-by-state attempts at regulatory reform made clear the need for a national mandate to promote local competition. Responsibility for specifying the detailed rules for achieving this goal was assigned therefore to the FCC.

This assignment of responsibility was appropriate: National rules are necessary for timely implementation of the Act. In July, however, the Eighth Circuit Court of Appeals sided with the local carriers in

ruling that the FCC had overstepped its jurisdiction by attempting to establish national cost and pricing rules for unbundled network elements. On October 14, the Eighth Circuit sided again with the local carriers by striking down provisions in the FCC's order prohibiting ILECs from separating network elements that the ILEC already combines before provisioning such elements to CLECs. Adoption of this interpretation by the states is likely to increase significantly the costs to entrants of leasing network facilities from the local carriers, further diminishing prospects for the Act's successful implementation. Regardless of the legal merit (or lack of merit) of these decisions, there are compelling economic and public interest reasons for supporting the strong role the FCC has assumed.

First, national legislation requires national guidance. State-by-state differences are in this case not so much a consequence of technology and business requirements as an artifact of cumbersome regulatory oversight. While the need for continued oversight remains as long as the consumer's access lane to the information highway is under monopoly control, the ability of the competitors to challenge this control and offer viable alternatives is severely hindered when state-by-state proceedings are prolonged unnecessarily by the need to establish repeatedly the same cost and pricing principles. The basic economic principles suggested by the FCC are almost always affirmed in the state-level proceedings, but those proceedings are a time-consuming and expensive undertaking. The principal beneficiaries of this policy environment are the lawyers and consultants who are paid to repeat the same arguments in one state capital after another – and the incumbent local exchange companies who seek to gain by delaying what they lost in Congress.

Second, with each passing year, it has become clearer that telecommunications and information technology are engines for economic growth that do not respect traditional regulatory boundaries. In light of the growth of the Internet, satellite TV, wireless services, and global communications more generally, the regulatory distinction between local and long distance traffic, between intrastate and interstate services, is becoming less and less relevant both to technology and to businesses. Electronic communication eliminates geographic distance as a barrier to the formation of new sorts of regional, national, and global communities. The

facilities for which the FCC sought to establish pricing rules are used to provide both local and toll calling services.

Third, assigning national authority to establish pricing and interconnection rules for essential facilities that will be used by carriers to offer competing retail services is compatible with continued state authority over retail pricing. Telecommunication services are sold locally, and local services are indeed quite local – presently, customers can only choose among carriers who can provide services over the single wire into their homes – but the incumbent and new carriers who are seeking to compete to offer these services are global enterprises. Increased competition in local services and affordable pricing for retail services are reconcilable if access charges and universal service subsidy mechanisms are reformed as required by the Act.

The rationalization of these policies is threatened by the failure to adopt national rules for unbundled network elements. If states instead adopt piecemeal rules, prospects for future deregulation will be severely hampered by the need to contend with the result of inconsistent and incomplete subsidy schemes. Failure to develop nationwide cost and pricing rules increases the likelihood that the development of effective local competition will be postponed. Consumers and businesses stand to lose much from the delay.

To summarize, long distance markets are characterized by vigorous competition, while there is almost no effective competition in local exchange markets. Moreover, the pace of emerging competition in local markets is likely to be slow because of regulatory impediments. Because of retail price regulation, the absence of reformed mechanisms for funding universal service, and non-price barriers to entry created by the ILECs (*e.g.*, inefficient and cumbersome Operations Support Systems), strong incentives exist for greater competition for business customers than for residential customers. Serving residential customers will require the use of BOC facilities, at least over the intermediate term.

Therefore rapid implementation of the Act's unbundling and interconnection provisions offers the best option for delivering competition to all local market segments. The ILECs have powerful incentives to continue to delay implementation of these rules, while seeking regulatory relief that would allow them

unfettered opportunities to exploit their monopoly power over local markets. National rules promulgated by the FCC and adopted by the state Public Utility Commissions (PUCs) would reduce opportunities for the ILECs to resist implementation of the Act. However, the decisions by the Eighth Circuit have afforded the ILECs new opportunities to avoid or delay implementation of the FCC's rules. In light of these decisions, the Section 271 precondition against allowing the BOCs to compete in in-region interLATA services becomes even more important as an incentive to the BOCs to comply with the Act. Premature relaxation of these restrictions will increase both BOC incentives and opportunities to engage in anticompetitive behavior intended to deter the emergence of effective competition.

II. A DISSENTING VIEW: DESIRABILITY OF IMMEDIATE DEREGULATION

In a provocative recent study, Peter Huber offers the opposite view of the current competitive and regulatory situations. He argues that immediate deregulation is the most fruitful means of stimulating the benefits of competition for local residential subscribers. Huber disagrees with the unbundled network element and interconnection requirements mandated by the Act and especially with maintaining the restriction against BOC entry into in-region interLATA services. Indeed, Huber takes the opposite logical tack from that which we argued above: He maintains that allowing BOC entry into long distance -- so that BOCs can bundle local and long distance services and offer "one-stop shopping" -- will force interexchange carriers and other CLECs to be more aggressive in competing in local markets. Huber's analysis rests on the following explicit (and sometimes implicit) assumptions:

Entry into local markets is easy. There are no significant economic or operational entry barriers to local service. Indeed, the prevalence of new technologies and CLEC investment assures the ease of entry. In addition, competitive alternatives already exist.

Long distance markets are imperfectly competitive. Hence IXCs' desire to protect their market power by preventing BOC entry into long distance; this prevention occurs by IXCs' deliberately neglecting to compete in local markets.

Local residential service is subsidized by other BOC services so that overall the BOC breaks even owing to effective regulation. Joined with the preceding assumption, this assumption explains why BOCs would want to enter long distance markets, while IXCs would not want to compete for local residential customers.

There are significant welfare gains from allowing local entry into long distance. Citing experience from GTE, Southern New England Telephone (SNET) in Connecticut, and the

United Kingdom, Huber argues that increased value to consumers arises from one-stop shopping, lower long distance prices, and increased local competition.

BOC entry into long distance will accelerate backbone investment in the Internet. The growth of the Internet has been constrained because the IXCs are interested in protecting their excess profits from Internet competition and have failed to make adequate investments in Internet backbone infrastructure. The BOCs, freed to compete in interLATA services, would have the correct incentives to invest in correcting these capacity bottlenecks.

As we explain below, none of these assumptions is accurate. Indeed:

Entry into local competition is difficult. Huber's presentation of evidence is misleading. The alternative technologies he describes are not yet technically and economically ready for mainstream use, and his discussion of investment patterns actually underscores the challenges involved in local entry.

Interexchange carriers are eager to compete. IXCs' efforts to enter local markets have been substantial. As recognized by the FCC and many analysts, it is the steadfast opposition of incumbent local exchange carriers that has delayed the emergence of local competition.

There is no compelling evidence that, overall, local service just breaks even. As we show, BOCs are earning substantial monopoly profits that should attract (and are attracting) entry.

The most substantial available welfare gains are from increasing local competition. One-stop shopping is valuable to consumers if they can choose among competing providers. Allowing BOC entry into a long distance while preserving the lack of choice in local exchange market will strengthen BOCs' barriers to entry, leading to welfare losses from higher local and long distance prices. Consumers want "one-stop," not, "one-choice" shopping.

There is no evidence that BOC entry into long distance will increase the pace of investment in the Internet. The volume of Internet traffic has been growing extremely rapidly, and IXCs have played an important role in sustaining this growth. Current congestion problems are not due to insufficient backbone investment by IXCs, but rather to bottlenecks in local-access networks and to delays in the development of high-capacity backbone-routing technology. Premature BOC entry into long distance will harm prospects for the evolution of the Internet as a source of competitive local access infrastructure to that controlled by the ILECs.

In the remainder of this section, we respond to Huber's arguments in more detail.

A. LOCAL MARKET ENTRY IS DIFFICULT

We agree with Huber that there is no effective local exchange competition for residential customers. At the present time, competition from CLECs is extremely limited and focused on major metropolitan areas. Key factors delaying the emergence of effective competition include retail price regulation, incomplete access and universal service reform, and most importantly, the general failure by ILECs to implement the local service competition requirements of the Telecommunications Act of 1996 (see again Exhibit 1).

Huber errs, however, in implying that there is adequate competition for commercial customers, even though this is the market segment currently experiencing the most hopeful growth. In support of his arguments, Huber cites anecdotal evidence on infrastructure investments by actual and potential CLECs. This evidence includes counting the number of interconnection agreements signed, which he claims is indicative of the large number of firms that are seriously intent on competing in local services. However, the mere existence of interconnection agreements — without implementation — provides no evidence of actual competition. Implementation of complex interconnection arrangements can take months or, as experience has shown, even years, and requires the active cooperation of the ILEC whose market share will be reduced after implementation is completed. Thus, although the current state of local competition presents a potentially attractive opportunity, neither this opportunity nor the existence of multiple interconnection agreements is sufficient to assure that competition can be successful.

Huber also presents evidence on the significant pace of capital investment by potential local competitors, seeking to indicate that it is approaching or exceeding the level of investment by the BOCs. From this evidence, Huber concludes that there is already effective competition in local service markets for commercial customers and that economic and legal barriers to entry have been eliminated. This interpretation is incorrect and misleading for several reasons.

First, in contrast to Huber's description, capital investment by CLECs does not offer *prima facie* evidence of collapsing local entry barriers. Indeed, the investment behavior of CLECs demonstrates the challenges of, not the ease of, local entry. In the face of substantial economic barriers to entry, CLECs are pursuing a rational dynamic investment program, starting with high-volume nodes and then investing in lower-volume areas. Because the ILEC already has substantial installed network capacity, one would expect CLEC fixed investment to grow relative to that by the ILEC.

Second, Huber overstates the significance of the investment comparison between CLECs and the incumbent because he does not attempt to distinguish between investments to enter local services and other

types of investment by IXCs, wireless companies, and cable TV providers. As the data in Exhibits 2 and 4 demonstrate, while CLEC investment has been impressive in recent years, CLECs still have to invest much more before they can match the existing installed plant of the incumbents. For example, according to Huber, the CLECs installed over 770 new local switches since the start of 1996; the ILECs had 23,361 switches in 1995. BOC fiber investment is over ten times as large as fiber investment by the CAPs. Moreover, the CAP investment is concentrated in high-density areas, whereas the BOCs have infrastructure covering their entire serving area. Furthermore, each incumbent has multiple switches distributed across its service area, whereas the CLEC switches tend to be concentrated in major metropolitan areas and are distributed over many independent CLECs.

Huber's emphasis on fiber investment by IXCs and other CLECs is also inappropriate because much of this investment is not to provide local service and does not offer a viable substitute to using the ILEC's local access facilities. While it is necessary for CLECs to install local backbone transport facilities, it remains quite costly to connect these facilities to individual subscribers. Exceptions include large office buildings in concentrated metropolitan areas; it is, therefore, not surprising that these are the markets where facilities-based competition is presently most vigorous.

According to Huber's own data, the extent of CLEC competition is trivial: He notes that competitors are serving 130,000 resold lines in BellSouth's territory and 330,000 resold lines in SBC territory. This represents less than one percent of either SBC's or BellSouth's access lines! Moreover, as Huber himself acknowledges, "resale alone has little market disciplining effect."

Third, Huber overstates the extent to which alternative access technologies offer a viable alternative to local facilities provided by the ILEC. For example, his inclusion of capital investments by wireless and cable TV providers in total estimates of CLEC investments is misleading because neither technology offers a generally accepted alternative to traditional fixed, wireline telephony services.

While PCS or some other wireless technology (*e.g.*, LMDS) may offer a viable alternative to wireline service from the ILEC in the future, these are not viable alternatives today. Current estimates of PCS penetration rates approximate 1.5 percent (by the end of 1997). Even this figure overstates the number of people who are using PCS as a substitute to wireless service. A recent survey by BellSouth, for example, indicates that, among the very small number of current PCS users, only three percent have replaced their residential wireless phones with PCS services.

Additional evidence that PCS is not generally viewed today as a substitute for wireless service is provided by the way in which PCS is marketed. AT&T, for example, no longer distinguishes between its PCS and mobile cellular offerings, referring to both offerings as “AT&T Wireless Services.” PCS providers are positioning the service as an alternative or extension to mobile wireless services, not fixed wireless or wireline services. Supporting mobile services that provide reliable connections to users driving at 55 miles per hour is technically different from, and more expensive than providing fixed wireless service. The underlying cost structure of current PCS architectures that are being deployed is neither intended nor likely to be compatible with major competition with wireless networks.

Because of the very limited competition thus far, the higher cost of providing high-speed mobility, and the higher value that cellular users place on mobility, cellular services have sold at a premium, which has restricted the use of such services to the high-value end of the telecommunications market. With increased competition, prices of wireless services have fallen. Prices cannot fall below costs of providing service, however.

PCS therefore does not currently offer effective competition for an ILEC’s dominant wireline business. While wireless technology offers one of the best hopes for effective future facilities-based competition for wireline carriers, it seems more likely that one of the new fixed-wireless technologies under development will provide the vehicle for this competition rather than wireless networks based on existing PCS architectures.

Similarly, much of the investment in facilities by cable carriers is intended to provide high-speed data services such as higher bandwidth Internet access, rather than to offer competitive telephone service. Thus Huber's reliance on this evidence is misleading in two ways. First, these facilities are still quite limited and do not offer a viable alternative for local telephone facilities provided by the ILEC. Second, the facilities provide evidence of incremental capacity for local Internet access, thereby contradicting Huber's arguments concerning growth of the Internet, which we discuss further below.

To summarize, economic entry barriers remain significant in local markets. No customers face effective competition; the capital investment pattern of CLECs reflects the difficulty of entry; and new technologies facilitating entry are not likely to be viable on a large scale for many years.

B. INTEREXCHANGE CARRIERS HAVE NO INCENTIVE TO REDLINE RESIDENTIAL CONSUMERS

Huber's premise that the IXC's are systematically redlining residential subscribers is false. Indeed, his premise rests on two incorrect arguments: first, that local residential service is not profitable at current retail rates, and second, that long distance services are not competitive and hence IXC's are refraining from competing aggressively in order to prevent the FCC from permitting the BOC's to compete in interLATA services. We examine the first argument in the next sub-section.

The second argument is incorrect because long distance markets are already effectively competitive, as we explained in section I. Barriers to competition are great in local service, not in long distance service. Hence interexchange carriers have no incentive to proceed slowly in entering local markets — where profits are currently high — to delay competition in long distance markets. Indeed, the incentives are reversed. It is the BOC's which have a strong economic incentive to delay local entry.

As both Huber's discussion of CLEC investments and our data in Exhibit 4 indicate, the IXC's have been making aggressive efforts to compete in local services. However, failure to implement the reforms called for by the Act have hampered progress by the IXC's and have accentuated their incentives to concentrate first on offering facilities-based competition for commercial customers in major metropolitan areas. This short-

term focus is partially motivated by pricing disparities induced by regulation. Retail price adjustments will follow reforms of universal service funding mandated by the Telecommunications Act of 1996. To the extent that CLECs' investment takes advantage of regulation-induced rate differences, CLECs are forcing a timely solution to problems induced by retail price regulation.

C. LOCAL MARKET ENTRY IS ATTRACTIVE TO INTEREXCHANGE CARRIERS

Huber's essential premise that local service breaks even only because of explicit subsidies is false. As we show below, Huber's own data reveal that incremental revenue from residential customers is at least as great as incremental costs; and, incremental revenue from business customers substantially exceeds incremental costs (see Exhibit 8). Hence local service generates incremental profits which would attract entry by IXC and other CLECs, including BOC out-of-region entry, absent the economic entry barriers erected by the ILEC.

Huber's analysis of the costs and prices of local exchange services includes a number of incorrect assumptions that lead to the false conclusion that the overall revenue for residential services breaks even. Huber makes a number of conceptual and data errors both with respect to his analysis of costs and revenues.

First, Huber estimates that the "cost of providing local service is about \$27 per month." He derives this estimate by taking the median of two estimates of the costs of providing basic local exchange service. The higher of these estimates is from an FTC study from 1993, and although he attempts to adjust this forward to account for continuing productivity improvements, the original estimate was based on average embedded cost data for 1983 through 1987, and hence does not reflect an accurate estimate of forward-looking average cost of providing basic local exchange service and should be disregarded.

That leaves the estimate of \$21 in the Hatfield Model as the average cost of providing basic local telephone service as the only reliable estimate of the *forward-looking, incremental, long-run economic costs* of providing service. Because this estimate includes all of the operating and equipment costs (including an allowance for overhead costs and a fair return on invested capital), it is not appropriate to increase this cost

further to account for unspecified non-traffic-sensitive costs. Moreover, these costs include almost all of the costs of providing interLATA access services (*i.e.*, all except for the usage-sensitive switch termination and transport charge of approximately \$0.0038 per minute) and for vertical switch features such as call-waiting (*i.e.* because these are included in the cost of the switch platform UNE). Therefore Huber's analysis understates the contribution margin from residential use of these services.

Huber also makes several errors when he computes the incremental revenue contributed by a residential subscriber. First, he asserts that the national average rate for flat-rate service (including touch tone dialing and the Subscriber Line Charge) is \$17, whereas the actual rate is \$18.49.

Second, Huber errs in computing the contribution from intraLATA toll service, interLATA access, and vertical services. Huber estimates that intraLATA toll service contributes an additional \$6 per month, that interLATA access contributes an additional \$9 per month, and that vertical services (including second lines) contribute an additional \$6.55 in revenue. Huber assumes that the margin on interLATA toll and access services is 50 percent and that for the vertical services is 60 percent, yielding an estimate of the net contribution of \$11.43. While his estimates of incremental revenues appear reasonable (even if his explanations are confused), his estimates of margins are understated because most of the costs of supporting these incremental services are already included in the estimates produced by the Hatfield Model. Assuming a margin of 85 percent (on all but the provision of second-line services), the incremental revenue contribution increases to \$17.79 per access line.

On balance, therefore, Huber estimates that the average basic residential line costs \$27.00 and earns total revenue of \$28.43, thereby approximately breaking even. With our more consistent estimates, *the basic residential line costs \$21 and earns total revenue of \$36.39 which reflects substantial excess profits*. This simple correction refutes Huber's central assertion that the IXCs and other CLECs have no incentive to serve residential customers.

Moreover, even using Huber's estimates, commercial traffic yields significant profits at current retail rates. This provides support for the view that competition can lower the rates for *all* classes of service, and that these reductions may be quite significant. Although competitive entry is attractive for both residential and commercial customers at current rates on average, the picture varies substantially across the ILEC's service area because service costs vary substantially with such local geographic factors as population density and differences in local factors. As a result, the profitability of serving subscribers in high-density areas is significantly higher on average, while there also may be customers in high-cost areas who are not profitable to serve at current rates. Explicit subsidies would be needed as part of the reformed universal service mechanism to assure that, while high-cost customers continue to be served, the overall attractiveness of competing in local markets is not affected.

D. WELFARE GAINS FROM ALLOWING LOCAL ENTRY INTO LONG DISTANCE ARE SMALL BUT GAINS FROM LOCAL COMPETITION ARE LARGE

Because long distance markets are already effectively competitive, additional entry into long distance services will not produce substantial benefits. In contrast, introducing competition to local services will result in significant benefits. To demonstrate this point, we will explain first why Huber overstates expected benefits from BOC entry into interLATA service. Second, we will provide a "back of the envelope" calculation to demonstrate the magnitude of the potential gains from introducing effective competition into local services.

DI. HUBER'S ESTIMATES OF GAINS FROM BOC ENTRY INTO INTERLATA ARE OVERSTATED

Huber's claim that there are substantial gains to be expected from BOC entry into interLATA services is based on two faulty premises. The first premise, adapted from arguments by Professor Jerry Hausman, is that BOC entry into long distance will reduce long distance prices significantly, yielding economic benefits to residential customers of \$6-7 billion each year. The second premise is that, if BOCs are permitted to enter long distance markets, then incentives for local entry are enhanced as both BOCs and IXC's will want to offer "one-stop shopping" to residential customers.

Huber follows Hausman in justifying the claim of lower long distance prices after BOC entry based on the experience of Southern New England Telephone (SNET) in Connecticut. The competitive impact of SNET on Connecticut telecommunications markets should not be overstated. The major IXC's already offer nationwide rates that are comparable to SNET's long distance prices. SNET's interexchange rates, which are billed in one-second increments range from 23 cents during the day to 13 cents at night (or a flat rate of 15 cents), and only provide small discounts for high volumes. In comparison, AT&T One Rate and Sprint's Sense Day Plan each offer flat rates of 15 cents per minute to all customers, at all times, regardless of calling volumes. Further, AT&T offers a 10 cent flat rate for a \$4.95 monthly fee. Sprint also offers a flat rate of 10 cents per minute for domestic calls between 7 PM and 7 AM, and 25 cents per minute for other domestic calls. It is also currently offering \$50.00 each month in free domestic calls on Monday evenings. MCI also offers a competitive flat rate: 12 cents per minute at all times for customers who spend more than \$15.00 on calls in a month. It further offers all residential customers a rate on Sundays of five cents per minute. Hence there is no obvious benefit to consumers as a result of SNET's entry into the long distance market.

SNET's ability to capture market share is also not attributable to any greater cost efficiencies. Instead, its success can be traced to its bundling of long distance offerings with its monopoly provision of local services and the advantage derived from being the established incumbent. Finally, through a recently announced corporate reorganization, SNET has attempted to rid itself from the requirement under the Telecommunications Act that it resell local services at a wholesale discount. Thus, in contrast to Huber's claims, the SNET experience actually illustrates the steps an incumbent firm will take to avoid opening its local market to competition.

While we agree with Huber that one-stop shopping is a desirable feature for residential customers, consumer choice in one-stop shopping is simply not possible until local markets become more competitive. Indeed, Huber appears to define the public interest intent of the Act narrowly by focusing solely on the effect of an ILEC's entry on long distance prices. As we argued earlier, a BOC's entry into interLATA

services before the emergence of effective local service competition is likely to harm the competitive process in both local and long distance markets. Indeed, the potential welfare losses from delaying the emergence of local competition are likely to be very large. This is true because the reduction in prices is likely to be very significant because local services are an effective monopoly today, because local access service is an essential input for long distance, and because the local market is much larger.

Huber's arguments fail to convince because they neglect to consider adequately the impact on the overall price that consumers will pay for one-stop shopping. Long distance services are only part of the bundle. If reduced prices for long distance services in the short run are paid for by delaying progress toward sustainable lower prices for local services, then consumers will be harmed and the public interest will not be served. Competition that allows consumers a choice among suppliers for their one-stop shopping services offers the surest mechanisms for guaranteeing that prices for both local and long distance services are as low as possible.

Huber essentially asserts that the benefits of lower prices for long distance services in the short run and the rapid delivery of a single one-stop shopping alternative to consumers outweigh any costs remaining from barriers to local entry. As we noted above, the welfare gains from enhanced local service competition are plausibly much larger than the speculative welfare gains from BOC entry into in-region, interLATA services.

Interexchange carriers have strong economic incentives to enter local services to offer one-stop shopping to residential customers and to take advantage of current retail rates that significantly exceed costs (as noted above). The Act recognized that entrants face formidable economic entry barriers in competing with the BOC in its home market, and hence the Act required network unbundling at cost-based rates so as to place the BOC and CLECs on an equivalent footing with respect to access to essential inputs. The CLECs do not require additional economic incentives to enter local services; what they need is the opportunity to avail themselves of the pro-competitive policies that are guaranteed under the Act. Permitting the BOCs to enter interLATA

services at this time will harm rather than help the prospects for carrying out the network unbundling provisions of the Act.

On balance, therefore, there are significant gains to be expected from opening local markets to competition. These gains are recognized by the CLECs which are investing heavily to enable them to compete with the ILECs. Progress toward increased local competition, however, is hampered by the failure to implement fully the pro-competitive policies required by the Act and by lack of cooperation from the ILECs. This lack of progress would be aggravated and local competition further delayed if the BOCs are prematurely allowed to integrate into in-region, interLATA services. We present below a “back-of-the-envelope” calculation of the potential welfare gains from increased local service competition to illustrate this point.

D2. EFFECTIVE LOCAL COMPETITION MAY RESULT IN WELFARE BENEFITS IN EXCESS OF \$19 BILLION PER YEAR

We estimated earlier that the BOC’s earn \$39.87 per residential access line and that the incremental cost of generating this revenue is \$24.58, resulting in an average contribution margin for residential service of \$15.29 per month. The margin earned on commercial services is significantly higher. Therefore, even allowing for common costs and other variable retail costs of 20 percent, it should be possible to reduce the average revenue per access line by *at least* \$10 per month. A permanent reduction in local service rates of this magnitude would result in direct benefits to consumers of *more than \$19 billion a year*. In addition to these direct benefits in the form of lower prices, local competition is likely to result in improvements in the selection and quality of services available to consumers. Moreover, because telecommunications services are an important input to every sector of the economy, lower telecommunications prices will stimulate growth across the economy.

E. BOC ENTRY INTO LONG DISTANCE OFFERS NO OBVIOUS BENEFIT FOR INTERNET GROWTH

Huber’s argument that BOC entry into interLATA services is needed to promote new investment in broadband services is both misleading and incorrect. Huber notes that the Internet is experiencing congestion

problems, but he is incorrect in attributing these problems to an unwillingness of current backbone providers and IXCs to commit adequate levels of investment to expanding backbone Internet capacity. Huber bases this assertion on several surveys of Internet congestion that report that “on average users cannot download across the backbone networks faster than about 40 kilobits per second.” Because this speed is less than the speed of a new 56Kbps modem that can operate on most copper voice grade lines, Huber concludes that local access capacity constraints are not at fault. He argues that “the supply of Internet bandwidth is lagging seriously, especially for residential subscribers.” Moreover, he maintains that congestion problems are 20 percent worse than in the summer of 1997!

There are a number of problems with Huber’s analysis of Internet congestion. First, determining where congestion occurs in the Internet backbone is quite difficult because there are no generally accepted metrics for measuring congestion. As a result, Huber greatly overstates the confidence of his estimates (especially insofar as he attempts to detect a measurably worsening trend in effective bandwidth since last summer).

Second, delays in the speed of downloading across the Internet depend on congestion along the complete end-to-end transmission path. In many cases, delays in downloading are due to congestion at either the user’s Internet access server or at the server from which the user is attempting to download content. A user who has a high-speed access connection may still experience congestion if the content server is congested, even in the absence of backbone congestion.

Third, Internet backbone providers have been aware of problems with congestion and have been investing rapidly to try to keep up with the explosion in demand. It takes time to install additional capacity, and the pace of Internet growth has outstripped the network’s ability to add capacity sufficiently rapidly. Part of the problem reflects the need for ever-faster routers and switches to handle higher-speed bandwidth connections. For example, in response to Internet traffic growing at 30 percent per month, MCI and UUNet quadrupled their backbone capacity in 1997; and the major backbone providers have plans to quadruple capacity again. These

increases in backbone capacity have been straining current high-speed router technology. The backbone providers have been expanding capacity as fast as available technology and their ability to manage the network have allowed. The congestion problem is not a problem of inadequate incentives to invest by existing providers but rather a problem associated with rapid growth.

Fourth, Huber is incorrect when he asserts that there is adequate bandwidth in the local loop. The ILECs have not aggressively deployed high-bandwidth access options such as xDSL and ISDN. Where ISDN is available, it is often priced in such a way as to make it unattractive to many Internet users (*i.e.*, there are usage-sensitive charges that significantly exceed the costs of usage). Alternative technologies such as xDSL have not been aggressively deployed. The ILECs have not invested aggressively to offer high bandwidth access to the Internet.

Today's problem with backbone congestion is temporary, and expanding capacity for backbone transport is much easier than for local transport because the former is less sensitive to its geographic location. Just as in long distance telephony, cross-country routes between different cities may be substitutes, but the loop to an individual subscriber needs to go to a specific house. In contrast, the need to expand local access facilities is a much more significant impediment to the Internet's growth.

We have seen dramatic innovation in the Internet without the participation of the BOCs, and our best hope for seeing significant innovation in local access facilities is to promote competition for the BOCs. Huber argues that the BOCs have little incentive to invest in enhancing local access services because "if local phone companies introduce these services successfully, competitors will be able to buy them piece by piece, at sharp discounts, and capture the profits." He argues that "the FCC has directed that competitors may buy the existing network below cost" because the prices set for UNEs are to be based on economic costs, excluding historical costs. Huber's analysis is flawed. Economic costs include a fair return on invested capital, and a fair return implies adequate compensation for risk. If network elements are priced above their economic costs than the ILEC will earn monopoly profits and competitive entry will be deterred.

F. CAN COMPETITION SUCCEED?

Huber clearly disagrees with the spirit of the Telecommunications Act of 1996 and is not interested in seeing it implemented. In essence, Huber is arguing that the best way to promote network innovation is to maintain the local monopoly and extend it by allowing the BOCs to enter long distance services prematurely. We disagree. Competitive markets offer the best hope for delivering advanced network services. To promote competition, we need to implement the Act.

III. CONCLUSIONS

The provision of local telecommunications services remain a monopoly, thereby reducing consumers' well-being and hindering the evolution of our national information infrastructure. The Telecommunications Act of 1996 offered a bold paradigm for introducing effective local competition through provisions intended to eliminate economic and regulatory entry barriers. The Act requires the incumbents to allow competitors to utilize essential network facilities at cost-based rates, thereby mimicking the outcome that would prevail if local competition already existed. These provisions and strong regulatory oversight of the incumbent carriers are needed to facilitate the transition to effective local competition. The emergence of such competition will make the continuation of these regulations unnecessary.

To realize the benefits of local competition, we must complete implementation of the Act. This means successfully carrying out the unbundling and interconnection provisions of Section 251, reforming access charges and universal service, and rationalizing state retail price regulations to be consistent with sound estimates of economic costs and reformed universal subsidy mechanisms. This means eliminating implicit subsidies.

Premature relaxation of regulatory oversight of the incumbent carriers will damage prospects for competition in local telephone service and related markets. The Act recognized that the incumbent carriers will oppose the reduction in their market power due to the emergence of effective competition, and hence, would not willingly cooperate in the implementation of the Act. Allowing the BOCs to compete in interLATA services

before the Act is implemented and the success of local competition is assured will harm prospects for competition in all telecommunications markets (both local and long distance).

¹ Columbia University. Financial support for the project from AT&T is acknowledged.

¹ TELECOMMUNICATIONS ACT OF 1996, PUB. L. NO. 104-104, 110 STAT. 56 (1996).

² We discuss the Act's unbundling and resale provisions in the following subsection.

³ In regulatory proceedings in New Zealand, for example, BellSouth, a Bell Operating Company, commented on an incumbent's ability to delay progress towards competition as follows:

"[T]he dominant incumbent, if it fails to accept the benefits which flow from a competitive market, can and will rationally use interconnection negotiations to delay and restrict the benefits of competition....A dominant incumbent can limit both the scale and scope of its competitors, raising their costs and restricting their product offerings. In addition, it can divert or delay competition and innovation to protect its current revenues..."³

(See *Regulation of Access to Vertically-Integrated Natural Monopolies*, discussion paper, BellSouth New Zealand, September 1995, page 2.) Later the same report argues that it is rational for the incumbent:

"to exploit the regulatory regime to the greatest possible extent without exposing itself to the threat of intervention or adverse changes to the regime. In fact, the directors of the dominant incumbent have a fiduciary duty to seek to extract the highest rents available to it as a result of its business position (as does any other profit-maximizing firm)....It has very powerful incentives to include monopoly rents in the price of complementary network services in order to perpetuate and increase its monopoly profits. It similarly has powerful incentives to reduce the ability of its competitors to claim market share." (*Id.*, page 10.)

The economic cost includes a fair return on invested capital, so that the ILEC is adequately compensated for the CLEC's use of its facilities.

We examine the question of whether residential services currently recover their costs in Section II.

For example, if UNE prices are appropriately set at geographically deaveraged rates that reflect the true economic costs of providing service in high-cost areas, if retail rates are set below this cost, and if there is no off-setting explicit universal service subsidy to make up the difference, a CLEC may be biased in favor of providing service to the customer via total service resale, even if this is not the economically efficient entry approach in that market. In this case, the lack of universal service reform would reduce the extent of CLEC competition, thereby preserving the ILEC's market power. A properly determined total service resale discount does not affect the implicit universal service subsidies currently flowing to the ILEC.

The FCC's Order notes that "[a]n incumbent LEC ... has the ability to act on its incentive to discourage entry and robust competition by not interconnecting its network with the new entrant's network or by insisting on supracompetitive prices or other unreasonable conditions" (see paragraph 10 of the *First Report and Order*, In the Matter of Implementation of Local Competition Provisions in the Telecommunications Act of 1996, CC Docket No. 96-98, Released August 8, 1996, hereafter referred to as *First Report and Order*). Moreover, the FCC recognized that the BOCs possess superior bargaining power and that a new entrant "comes to the table with little or nothing the incumbent LEC needs or wants" (see *First Report and Order*, paragraph 15).

Furthermore, in noting the incentive and ability of BOCs to delay competition by refusing to cooperate, Professor Marius Schwartz noted that:

"BOCs repeatedly and successfully delayed the introduction of dialing parity, long after it was determined to be in the public interest. In Minnesota, the delay caused by repeated legal and administrative challenges was close to a decade."

See *Supplemental Affidavit of Marius Schwartz on Behalf of the U.S. Department of Justice*, in the Matter of Application of BellSouth Corporation to Provide In-Region, InterLATA Services in South Carolina, CC Docket No. 97-208, Before the Federal Communications Commission, November 1997, page 15.

These include a public interest test, a requirement that there exist a facilities-based local exchange competitor, and a competitive checklist. (See Section 271 of the TELECOMMUNICATIONS ACT of 1996, note 1ÐÉÿù°ÎÉ, ^aK©_Ref406744109, *supra*.)

In 1994, four RBOCs -- Bell Atlantic, BellSouth, SBC, and NYNEX -- filed a motion to vacate the MFJ. Before the hearing on the RBOCs' motion was held, the issues addressed by the motion were resolved by the Telecommunications Act of 1996.

Civ. Action No. 7:97-CV-163-X, slip op. (N.D. Tex. Dec. 31, 1997) ("SBC v. FCC").

In the Matter of Application of Ameritech Michigan Pursuant to Section 271 of the Communications Act of 1934, as amended, to Provide In-Region InterLATA Services in Michigan, CC Docket No. 97-137, Memorandum Opinion and Order, Federal Communications Commission 97-298 (released August 19, 1997); *In the Matter of Application by SBC Communications Inc. Pursuant to Section 271 of the Communications Act of 1934, as amended, to Provide In-Region InterLATA Services in Oklahoma*, CC Docket No. 97-121, Memorandum Opinion and Order, Federal Communications Commission 97-228 (released June 26, 1997); *In the Matter of Application of BellSouth Corporation, et. al. Pursuant to Section 271 of the Communications Act of 1934, as amended, to Provide In-Region InterLATA Services in South Carolina*, CC Docket No. 97-208, Memorandum Opinion and Order, Federal Communications Commission 97-418 (released December 24, 1997); *In the Matter of Application by BellSouth Corporation, et al. Pursuant to Section 271 of the Communications Act of 1934, as amended, to Provide In-Region, InterLATA Services in Louisiana*, CC Docket No. 97-231, Memorandum Opinion and Order, Federal Communications Commission 98-17 (released February 4, 1998).

In its access charge reform decision, the FCC declined to set access charges at a level corresponding to economic costs immediately, adopting instead a transitional approach that will move access to costs over a longer period (see *Second Report and Order*, In the Matter of Access Charge Reform, Before the Federal Communications Commission, CC Docket No. 96-262, May 21, 1997 -- hereafter, referred to as the "FCC Access Charge order").

According to FCC Chairman William Kennard, "in local markets, most consumers -- and especially residential consumers -- have no real choice. Incumbent telephone companies -- the historic monopolies -- still have over 98% of this market" (see *Remarks by William Kennard, Chairman, Federal Communications Commission to Practicing Law Institute*, Washington, DC, December 11, 1997).

A recent industry study by the Yankee Group concludes that "while most consumers would be happy to have a choice when it comes to local phone service . . . less than half of 1% of U.S. households have yet to experience the benefits of telecom reform." See "Yankee Group Study Finds Residential Local Phone Competition - Still on Hold," press release (May 22, 1997).

According to the FCC's Fiber report, the Competitive Access Providers (CAPs) had 2.9 million fiber miles compared to 10.8 million fiber miles by the Bell Operating Companies. In 1996, there were only 22,898 buildings on CAP networks nationwide (see *Fiber Deployment Update: End of Year 1996*, Jonathan Krausharr, Industry Analysis Division, Federal Communications Commission, December 1997).

The data in Exhibit 3A and 3B show that the Consumer Price Index (CPI) and the Producer Price Index (PPI) for local service have increased (even relative to the CPI for all goods and services), while the indices for long distance toll services have actually declined. Moreover, this relative disparity is understated because the CPI and PPI inadequately account for discount programs, which are much more important for long distance services than for local services.

Because the PPI was revised in June 1995, it is not possible to compare the new indices with the data in Exhibit 2; however, as of April 1997, the new PPI indices for residential local and business services have not declined since June 1995 (see Table 5.7 of the *Monitoring Report*, prepared by the Federal-State Joint Board, CC Docket No. 87-339, May 1997).

See B. Douglas Bernheim and Robert D. Willig, note *DEËyù°ÎE, aK©* Ref41014781924, *supra*, Chapter 2, page 67. The estimated churn rate of 19 percent is based on the share of AT&T's long distance revenues associated with customers who left AT&T for another carrier or who left another carrier for AT&T.

This estimate was provided to the authors by AT&T.

It is quite possible that BOCs may find it attractive to force long distance prices below long-run costs in the short term as a means of raising their rivals' costs, thereby strengthening their market power over integrated services. See further discussion of how an ILEC may abuse its market power to harm the competitive process below.

InterLATA relief should mean that the BOCs will have implemented their duty to make UNEs available at economic cost. This will allow IXCs to offer competitive local as well as interLATA services. In addition, the large IXCs who currently resell local service under Section 251(c)(4) of the Act are precluded also from jointly marketing "one-stop" shopping bundles in the BOC's territory under Section 271(e)(1) of the Act. According to Section 271(e)(1):

"Until a Bell operating company is authorized pursuant to subsection (d) to provide interLATA services in an in-region State, or until 36 months have passed since the date of enactment of the Telecommunications Act of 1996, whichever is earlier, a telecommunications carrier that serves greater than 5 percent of the Nation's presubscribed access lines may not jointly market in such State telephone exchange service obtained from such company pursuant to section 251(c)(4) with interLATA services offered by that telecommunications carrier."

Realization of these scale and scope economies is most important with respect to retail-level and corporate overhead expenses, and does not depend on the entry of BOCs into long distance services. With full implementation of the Act's unbundling provisions, resellers and CLECs can take advantage of these economies. If the emergence of effective local competition occurs, the need to restrict BOCs from offering integrated services will disappear.

Long distance competition was emerging even before the divestiture of AT&T in 1984. However, one should remember that AT&T was subject to significant regulatory oversight for many years. The FCC only reclassified AT&T as a non-dominant carrier in 1995, after AT&T had lost almost 50 percent of its market to competitors.

See *Statistics of Communications Common Carriers 1995/1996*, Common Carrier Bureau, Federal Communications Commission, November 27, 1996. Local exchange plant in service was \$278.946 billion at the end of 1995 (Table 2.7) and there were 152.601 million subscriber lines (Table 2.3); AT&T's total plant in service was \$25.894 billion (AT&T financial data maintained in conformance with regulatory requirements) and there were 101.357 million subscriber lines (Table 8.12).

The costs of providing service vary with geography but flat-rate residential service is priced at a uniform level. In high-cost areas, these rates might be below the incremental economic cost of providing service; however, in other areas (e.g., high-density urban areas), current prices exceed incremental costs. Moreover, there are additional revenue streams such as fees for vertical features, access services, and intraLATA toll usage that contribute to recovering the costs of residential service. Therefore, as we discuss below, it is likely that residential services - on average - more than recover their costs even if cost recovery is incomplete for certain classes of subscribers. These high-cost subscribers will require universal service subsidies if they are to be served at prices that do not recover economic costs.

Economists have recently suggested that there can be efficiency-based motivations for tying and that the circumstances under which this is the preferred mechanism for extending monopoly power are limited. However, tying is likely to be attractive as a mechanism for avoiding rate regulation (e.g., if the essential input is subject to a price ceiling that limits the ILEC's ability to extract profits from its sale).

An upstream monopolist (i.e., the BOC which controls local exchange access) generally will have an incentive to discriminate against downstream rivals (i.e., interLATA competitors) as explained in recent papers by Nicholas Economides (see Nicholas Economides, "The Incentive for Non-Price Discrimination by an Input Monopolist," Mimeograph, Stern School of Business, New York University, January 1997) and by Randolph

Beard, David Kaserman and John Mayo (see Randolph Beard, David Kaserman and John Mayo, "Regulation, Vertical Integration and Sabotage," Mimeograph, University of Tennessee, January 1997).

For example, Ameritech attempted to frustrate the Michigan Public Service Commission's June 26, 1996 order to implement intraLATA toll dialing parity within thirty days. The BOC was required to grant a 55 percent discount on access charges in central offices where it failed to provide such parity. Ameritech actually chose to reduce access charges by 55 percent rather than to expand dialing parity beyond the 10 percent of access lines for which it had already implemented dialing parity. (See Ameritech News Release, "Ameritech to Cut Access Rates to Long Distance Companies," July 26, 1996; and *Ameritech Michigan v. Michigan Public Services Commission, MCI Telecommunications Corporation, and AT&T Telecommunications of Michigan, Inc.*, Court of Appeals Case No. 198706, Appellant Ameritech Michigan's Brief on the Merits at 12 ("Ameritech Complied With the Commission's June 26, 1996 Order By Implementing the 55% Access Charge Discount")(January 2, 1997).

See also the more extensive discussion in B. Douglas Bernheim and Robert D. Willig, note [DEËyù°ÎE, aK©](#)

[_Ref41014781924](#), *supra*, Chapter 4.

Supplemental Affidavit of Marius Schwartz, note [DEËyù°ÎE, aK©](#)

[_Ref4071724557](#), *supra*, paragraph 38.

Iowa Utilities Board v. Federal Communications Commission, 120 F.3d 753 (8th Cir. 1997), *cert. granted*, 66 USLW 3387 (Jan. 26, 1998).

Peter Huber, *Local Exchange Competition Under the 1996 Telecom Act: Red-Lining the Local Residential Customer*, New York: Manhattan Institute, November 4, 1997.

According to Huber, "as of November 1997, the number of agreements signed exceeded 1,500" (see Peter Huber, note [DEËyù°ÎE, aK©](#)

[_Ref40639131241](#), *supra*, page 4).

See Peter Huber, note [DEËyù°ÎE, aK©](#)

[_Ref40639131241](#), *supra*, pages 6-9.

See Peter Huber, note [DEËyù°ÎE, aK©](#)

[_Ref40639131241](#), *supra*, page 7.

See Table 2.4 in *Statistics of Communications Common Carriers 1996/1997*, note [DEËyù°ÎE, aK©](#)

[_Ref40675276916](#), *supra*.

See Table 4.

In December 1996, SBC (including Pacific Telesis Group) had 31,382 thousand customer lines and BellSouth had 22,135 thousand customer lines. See Table 1.1 in *Statistics of Communications Common Carriers 1996/1997*, note [DEËyù°ÎE, aK©](#)

[_Ref40675276916](#), *supra*.

See Peter Huber, note [DEËyù°ÎE, aK©](#)

[_Ref40639131241](#), *supra*, page 55.

"LMDS" stands for Local Multipoint Distribution Service. The FCC is planning to auction additional spectrum soon. According to one industry expert and strong believer in the future competitive potential of wireless services: "It's going to be a few years before we really see any wireless local loop on a grand scale." (See Wilson Dizard, "Wireless Profits Seen Flowing Despite Price Pressures," *TR Wireless News*, October 30, 1997.)

See Angela Littwin, "The Great PCS Buildout: A Status Report," *Telecommunications* 31 (August 1997). According to Ms. Littwin: "The realities of implementation have set in - rollouts have been slowed; roaming capabilities are being added gradually; coverage is far from complete. Carriers are struggling with huge start-up costs, potential over-competition, and antenna-siting problems."

See *Affidavit of William C. Denk on Behalf of BellSouth, In the Matter of Application of BellSouth Corporation, BellSouth Telecommunications, Inc., and BellSouth Long Distance, Inc., for Provision of In-Region, InterLATA Services in Louisiana*, Before the Federal Communications Commission, November 1997.

According to TCI's president Leo Hindery Jr., TCI's new \$1 billion capital expenditure plan for upgrading its network "intentionally delay(s) costly, and risky, POTS (Plain Old Telephone Service)" (see Tom Kerver, "Tele-Communications Inc plotting its digital upgrade strategy," *CableVision*, April 28, 1997). The majority of cable system revenues are from providing multichannel video program distribution, and cable television providers are facing new competition from direct broadcast satellites (see George Avalos, "Cable Giant Loses 70,000 Customers In One Quarter," *Contra Costa Times*, October 25,

1996), and from ILECs that are investing in expanding their local facilities to offer enhanced multimedia services (e.g., ADSL services, see Jon Van, "Phone Companies Set to Announce High-Speed Internet Access," *Chicago Tribune*, January 21, 1998).

BOCs are not restricted from entering interLATA services or competing as a CLEC in other regions. Their willingness to invest in foreign ventures demonstrates that this is not due to an unwillingness or inability to invest outside their home region. Rather, the lack of out-of-region interLATA entry attests to the competitiveness of these markets, while their lack of local entry attests to the significant local entry barriers.

See Peter Huber, note 53, *supra*, [Ref40639131241](#), *supra*, page 13-18.

See Peter Huber, note 53, *supra*, [Ref40639131241](#), *supra*, page 13, footnote 53.

Huber's derivation of the \$27 median cost estimate is confused. The median of the adjusted FTC estimate of \$31 and the Hatfield estimate of \$21 is \$26, not \$27. Furthermore, if these estimates are increased by adding \$6 to each, then the new estimate is \$32. Moreover, in the text, he suggests that the local companies "currently spend an average of between \$27 and \$37 per month" to provide service (page 13) - but this is likely to significantly exceed economic costs because the ILECs are currently monopolists and presumptively less efficient than competitive suppliers. If Huber derives this range by adding \$6 (i.e., the subscriber line charge) to the Hatfield and FTC estimates, then this is incorrect as we explain below.

Because the embedded cost data is for monopoly carriers, it includes excess profits and cost inefficiencies typical of monopolistic industries.

The Hatfield Model has been developed by HAI (formerly Hatfield Associates, Inc.) of Boulder, Colorado, at the request of AT&T and MCI for the purposes of estimating the forward-looking economic costs of unbundled network elements, basic local telephone service, and carrier access or interconnection. The model produces "bottom-up" estimates of the Total Element Long Run Incremental Cost (TELRIC) capable of reflecting local cost differences (e.g., because of population density, local geography, etc.). For additional information see *Hatfield Model Release 3.1 Model Description*, submitted to FCC in CC Docket Number 96-45, February 28, 1997.

Huber argues that "an additional \$6 of cost per line per month should be added to account for the non-traffic-sensitive costs of providing interexchange access" (see footnote 53, Peter Huber, note 53, *supra*, [Ref40639131241](#), *supra*).

Such an addition would result in double counting because these costs are already included in the Hatfield Model cost estimate.

AT&T estimated that the average forward-looking cost of providing interexchange access services to an IXC is \$0.0038 per minute. This includes local switching and signaling, local transport, and the entrance facility (see *Comments of AT&T Corporation in the matter of Access Charge Reform*, Before the Federal Communications Commission, CC Docket No. 96-262, March 24, 1997).

Huber assumes that interLATA access is marked up only 50 percent above cost (page 15) and that the margin on vertical services is 60 percent (see Peter Huber, note 53, *supra*, [Ref40639131241](#), *supra*, footnote 61).

In 1996, the average monthly residential rate was \$18.49 computed as the sum of the

\$13.70 flat rate + \$3.54 Subscriber Line Charge (SLC) + \$0.86 for the one-time installation charge + \$0.39 for touch-tone service (see Table 8.4, *Statistics of Communications Common Carriers 1996/1997*, note 53, *supra*, [Ref40675276918](#), *supra*).

The contribution from the one-time installation charge is obtained by converting the minimum connection charge of \$41.08 into a monthly revenue stream by amortizing \$41.08 at 10 percent over five years. It is appropriate to include the revenue from installation charges because the Hatfield estimates include the one-time costs of installation. This calculation is conservative because customers may pay more for installation and because the incremental revenue calculations exclude installation services for enhanced services. The \$0.39 for touch-tone service in 1996 is based on an average price for touch-tone service of \$0.49 in October 1995, deflated at the average growth rate in the rate for touch-tone service since 1990 (see Table 2, *Reference Book of Rates, Price Indices, and Household Expenditures for Telephone Service*, Industry Analysis

Division, Federal Communications Commission, March 1997). (For the Huber estimate of \$17, see Huber, note $\text{\textcircled{D}}\text{\textcircled{E}}\text{\textcircled{y}}\text{\textcircled{u}}\text{\textcircled{I}}\text{\textcircled{E}}$, ^aK $\text{\textcircled{C}}$ _Ref40639131241, *supra*, page 13.)

Huber's method for computing this estimate is confusing (see Peter Huber, note $\text{\textcircled{D}}\text{\textcircled{E}}\text{\textcircled{y}}\text{\textcircled{u}}\text{\textcircled{I}}\text{\textcircled{E}}$, ^aK $\text{\textcircled{C}}$ _Ref40639131241, *supra*, footnote 59). It appears to be based on the following assumptions: (1) residential subscribers make an average of only 34 minutes of intraLATA toll calls per month; intraLATA toll revenue of \$14 billion in 1996; total intraLATA calls of 22.8 billion in 1995; and an average length for intraLATA calls of 3.5 minutes for total intraLATA. This would suggest an estimate of average revenue of $\$5.96 = (\$14 / (22.8 * 3.5)) * 34$, which rounds to \$6.00 but is different from the \$5.80 he reports. Moreover, FCC data report total toll revenue for local exchange carriers for 1996 at between \$11.2 billion (*Long Distance Market Second Quarter 1997*, Industry Analysis Division, Federal Communications Commission, October 1997, Table 5) and \$12 billion (see *Telecommunications Industry Revenue: TRS Fund Worksheet Data*, Industry Analysis Division, Federal Communications Commission, November 1997, Table 14). Because the former estimate -- which is cited as the source of Huber's estimate -- includes toll revenues for non-BOC carriers such as GTE, it appears that Huber overstated intraLATA toll revenue. Offsetting this error, however, is the possibility that he understates the average number of toll minutes per residential access line, which is estimated to be 180 minutes per month for all access lines (see *Monitoring Report*, prepared by the Federal-State Joint Board, CC Docket No. 87-339, May 1997). Because this estimate includes business access lines, it is not directly comparable to Huber's estimate.

An alternative calculation may be obtained by dividing the total intraLATA toll revenue of \$12 billion by the total number of presubscribed access lines of 159 million (see Table 1.8, *Statistics of Communications Common Carriers 1996/1997*, note 16, *supra*), yielding an estimate of intraLATA revenue per line per month of \$6.30. This estimate is a blended rate for commercial and residential access lines and so may overstate intraLATA toll revenues for residential service by itself.

Huber's method for computing this estimate is confusing (see Peter Huber, note $\text{\textcircled{D}}\text{\textcircled{E}}\text{\textcircled{y}}\text{\textcircled{u}}\text{\textcircled{I}}\text{\textcircled{E}}$, ^aK $\text{\textcircled{C}}$ _Ref40639131241, *supra*, footnote 57). He appears to derive his estimate as follows:

$(\$19.5 \text{ billion in access revenues}) / (548 \text{ billion access minutes}) * 249$
access minutes per line per month = \$8.86 per access line per month.

That is, $\$17.79 = (\$8.86 \text{ toll} + \$5.96 \text{ access} + \$5.05 \text{ vertical services, excluding second lines}) * 0.85 \text{ margin} + (\$1.50 \text{ second lines} * 0.6 \text{ margin})$. The incremental toll and access revenue are not rounded up, as in Huber. This estimate of the incremental contribution is conservative because it excludes one-time charges and assumes conservatively low margins (*i.e.*, because most of the incremental costs of providing these services are already included in the Hatfield Model cost estimates).

Huber does not perform this calculation explicitly. Instead, he includes Figure 9 (see Peter Huber, note $\text{\textcircled{D}}\text{\textcircled{E}}\text{\textcircled{y}}\text{\textcircled{u}}\text{\textcircled{I}}\text{\textcircled{E}}$, ^aK $\text{\textcircled{C}}$ _Ref40639131241, *supra*, page 16) that obscures the fact that revenue actually exceeds costs by \$1.43. (Huber chooses a maximum of \$100 on the vertical scale, whereas with a maximum of \$50, it would be clear that total revenues exceed costs even for residential service.)

See Figure 10 in Peter Huber, note $\text{\textcircled{D}}\text{\textcircled{E}}\text{\textcircled{y}}\text{\textcircled{u}}\text{\textcircled{I}}\text{\textcircled{E}}$, ^aK $\text{\textcircled{C}}$ _Ref40639131241, *supra*, page 19, which demonstrates the significant subsidies for ILECs generated by pricing business services so much above incremental costs.

See Peter Huber, note $\text{\textcircled{D}}\text{\textcircled{E}}\text{\textcircled{y}}\text{\textcircled{u}}\text{\textcircled{I}}\text{\textcircled{E}}$, ^aK $\text{\textcircled{C}}$ _Ref40639131241, *supra*, page 56; and *Affidavit of Jerry A. Hausman on Behalf of BellSouth, in the Matter of Application of BellSouth Corporation, BellSouth Telecommunications, Inc., and Bell South Long Distance, Inc., for Provision of In-Region, InterLATA Services in South Carolina*, Before the Federal Communications Commission, September 26, 1997.

See *AT&T v. Commissioners of the Connecticut Department of Public Utilities Control*, Civil Action No. 397CV01601, Complaint for Injunctive Relief and Declaratory Judgement, filed August 8, 1997, paragraph 9.

Increased competition for local services which reduces the costs of local exchange services will reduce the cost of providing long distance service. These benefits will flow through to consumers in the form of lower prices for toll services.

According to a recent study by Consumer Federation of America, allowing the BOCs to enter interLATA services prematurely could cause consumers to lose as much as \$10 billion per year in savings from lower local telephone service bills (see "Long Distance Entry Will Cost Consumers \$10 Billion," *Telecom AM*, January 16, 1998).

The Hatfield Model already includes most of the costs that are typically regarded as "common costs" (i.e., as indirect variable overheads) and a generous allowance for retail related costs was subsumed in our conservative assumptions about adjusted margins. We are adding an additional 20 percent to be extra conservative.

This is computed as follows: \$19.1 Billion = \$10 reduction in revenue per access line * 159 million presubscribed access lines (see Table 1.8 in *Statistics of Communication Common Carriers 1996/1997*, note 16¹⁶,¹⁶)

¹⁶Ref406752769, *supra*.) * 12 months. This is a conservative estimate because it assumes, counterfactually, that the access and usage demand are perfectly inelastic. In reality, a price reduction of this magnitude would stimulate increased usage.

See Peter Huber, note 16¹⁶,¹⁶
¹⁶Ref40639131241, *supra*, page 60.

Recent moves by the BOCs to invest in expanded local access facilities demonstrates recognition both that current facilities are inadequate and that utilization of expanded local access facilities is not precluded by inadequate backbone capacity. See, for example, Jon Van, note 52, *supra*.

See Peter Huber, note 16¹⁶,¹⁶
¹⁶Ref40639131241, *supra*, page 60.

WebWeek, reporting on a Zona Research study, indicates that there was \$20.4 billion worth of spending during 1996 on the Internet infrastructure. About 86% of that (i.e., \$17.6 billion) was devoted to bandwidth, with AT&T reportedly spending \$4.7 billion, BT \$2.6 billion, and MCI \$2.2 billion on bandwidth. Total spending is expected to climb to \$62.9 billion by the year 2000 (see WebWeek, "Spending on Infrastructure Exceeded \$20B in 1996," Michelle V. Rafter, June 23 1997).

The next step is to expand backbone links to OC48 (2.4 gigabits per second (GBps)).

See Peter Huber, note 16¹⁶,¹⁶
¹⁶Ref40639131241, *supra*, page 69.

See Peter Huber, note 16¹⁶,¹⁶
¹⁶Ref40639131241, *supra*, page 69.