

Wireless Services. The FCC completed the largest of its auctions of PCS spectrum in 1995, before the 1996 Act was signed into law.⁴¹ By November 1997, PCS providers had signed 157 interconnection agreements with incumbent wireline carriers.⁴² By all accounts, PCS providers are deploying their new networks much faster than anticipated only a year or two ago.⁴³ Since passage of the 1996 Act, they have launched commercial service in markets that serve half of the U.S. population.⁴⁴ Wireless prices are falling. And because wireless offers the great convenience of mobility, many analysts believe wireless will compete with wireline even at premium prices, in much the same way subscription cable competes with free broadcast television.⁴⁵ **Table 3.** AT&T has also announced ambitious plans to compete in local markets using some of its PCS spectrum for the provision of fixed-wireless loops.⁴⁶

⁴¹The A and B Block auctions, for 30 MHz MTA licenses, were completed in March 1995. The 30 MHz C Block auction was completed in May 1996, and the D, E, and F blocks were completed in January 1997. FCC, Wireless Bureau, <http://www.fcc.gov/wtb/auctions>.

⁴²USTA, Draft Competition Report, Nov. 1, 1997.

⁴³P. Millard, *PCS Networks Being Installed Faster than Expected*, Bus. Journal., Feb. 21, 1997, at 16.

⁴⁴L.J. Runyon, et al., Merrill Lynch Capital Markets, Ind. Rpt. No. 1938067, Telecommunications/Wireless, at Table 4 (Jul. 28, 1997) (showing that PCS service is available in 67 of the top 100 MSAs in the United States, accounting for 131,609,000 people).

⁴⁵Report and Order at ¶ 98, Amendment of Parts 1, 63, and 76 of the Commission's Rules to Implement the Provisions of The Cable Act of 1984, 1985 FCC Lexis 3475; Fitch Investors Service, Ind. Rpt. No. 1702551, Telecom's Wireless Battlefield, at 6 (Jan. 29, 1996) ("In their competition against landline operators, wireless operators will be aided in part by consumers' desire for the convenience of mobility and their current willingness to pay a premium for it."); J.L. Hines, et al., NatWest Securities Corporation, Ind. Rpt. No. 1824099, Year In Review & Thoughts For '97/Wireless, at 2 (Jan. 1, 1997) ("[W]ireless will replace wire").

⁴⁶J. Keller, *AT&T Unveils New Wireless System Linking Home Phone To Network*, Wall St. J., Feb. 26, 1997, at B2 (quoting AT&T Wireless Vice Chairman, Wayne Perry: "While everyone thought we were going to use these licenses for mobile phone services, we were getting them for the fixed wireless local phone system as well.").

Table 3. Wireless/PCS Competition: Predicted Growth

*"There are predictions that 40 percent of the population will be wireless users in ten years and that wireless will challenge the traditional wired network for basic phone service."*¹ (FCC Chairman Reed Hundt, 1995).

*"A small but growing number of consumers are . . . embracing an exclusively wireless telephonic experience."*² (Wall Street Journal, 1997)

*"By the year 2006, the number of wireless phone users is expected to grow from one in ten Americans to five in ten."*³ (Kansas City Star, 1997)

*"Eventually, the companies [PCS providers] expect, customers will start canceling their local telephone service and using wireless phones exclusively."*⁴ (Kansas City Star, 1997)

*"According to Yankee Group, 14 percent of the U.S. population used a PCS or cellular phone last year, but that is expected to swell to a quarter of the population, or 67 million subscribers, by 2000."*⁵ (Mark Lowenstein, Wireless Analyst, 1997)

*"Our analysis projects that over the next 5 to 8 years wireless prices will drop from the current 60¢ - 70¢/minute to 10¢ - 20¢/minute, and penetration will rise to the 30 percent - 40 percent range. Hence, wireless will become a very competitive domestic telephone service supplier."*⁶ (P. William Bane, Stephen Bradley and David Collis, 1995)

Sources: ¹Statement of Reed E. Hundt, Chairman, Federal Communications Commission, before the Telecommunications and Finance Subcommittee, June 19, 1995. ²S. Mehta, *Unfettered But In Touch*, Wall St. J., Aug. 20, 1997, at B1. ³T. Sickinger, *Familiar Sight?...Wait Till You See What These Guys Are Planning*, Kansas City Star, June 5, 1997, at A1. ⁴*Ibid.* ⁵D. Zeiger, *U S West Turns Attention to Wireless Launch*, Denver Business Journal, May 23, 1997 at 11A. ⁶P. Bane, S. Bradley and D. Collis, *Winners And Losers: Industry Structure In The Converging World Of Telecommunications, Computing And Entertainment*, http://www.hbs.edu/units/gm/mis/multimedia/link/p_winners_losers.html.

A Fast Transition. A study commissioned by AT&T and MCI before passage of the 1996 Act concluded that natural economic forces would prevent cable and wireless operators from having any significant competitive impact on local markets in the foreseeable future.⁴⁷ Competition, the study asserted, had taken 30 years to develop in long-distance markets, 16 years for customer premises equipment, 9 years and counting in markets for enhanced services, 6 years for competitive access services, and 4 years for 800 numbers.⁴⁸ Competitors in local markets would require "anywhere from 5 to 8 years to generate a positive cash flow," and their new businesses might never prove profitable at all.⁴⁹ Anyone who believed "entry will be quick and

⁴⁷Economics and Technology, Inc./Hatfield Associates, Inc., *The Enduring Local Bottleneck: Monopoly Power and the Local Exchange Carriers 151* (1994) ("[I]t will be a long hard climb for cable and wireless providers who plan to provide local telephone service in competition with the LECs").

⁴⁸*Id.* at 6-7.

⁴⁹*Id.* at 151.

easy” would face a “big surprise when they meet the hard, cold facts of the income statement and they must incur the costs of being in the local telephone business.”⁵⁰ Both the FCC and the Department of Justice were presenting comparably downbeat projections about the prospects for local competition.⁵¹

At the very least, then, it should come as no surprise that competition in local exchange markets is not fully mature 20 months after passage of the 1996 Act. Indeed, what is remarkable is how far local competition has advanced in such a short time. Judged against the historical record in other markets, the competitive record in local markets since 1996 is excellent. Twenty months after terminal equipment manufacturers and long-distance carriers were first offered interconnection, almost nothing at all had happened. By contrast, incumbent local carriers and new competitors launched interconnection negotiations within weeks after the 1996 Act was signed into law. Far more has happened in local markets, during twenty months of private interconnection negotiation, than happened in other markets during years of interconnection regulation minutely orchestrated by federal regulators.

But will competitors ever arrive to challenge local incumbents in the market for basic, residential, voice service? Few casual observers are prepared to believe that local markets are competitive when the populist consumer – the residential subscriber – can still buy the populist service – basic, local, voice – from only a single provider. When will there be a second?

⁵⁰*Ibid.*

⁵¹Reed Hundt, Chairman, FCC, Statement on S. 1822, the Communications Act of 1994 and Telecommunications Equipment Research and Manufacturing Competition Act of 1994, Before the Committee on Commerce, Science, and Transportation, United States Senate, Feb. 23, 1994 (“Of course, telecommunications markets that have been dominated by a single firm for many years do not mature into competitive markets overnight simply by the removal of entry barriers.”); Anne Bingaman, Assistant Attorney General, Antitrust Division, U.S. Department of Justice, Promoting Competition in Telecommunications, address before the National Press Club, Washington, D.C., Feb. 28, 1995 (“[I]mplementation issues mean that the growth of local competition may take time, even under the best of circumstances”).

2. COMPETITION AT THE HIGH END OF THE MARKET

That hundreds of competitors are signing local interconnection agreements and offering service is beyond dispute. Equally clear is that they are carefully picking where they compete, for which customers and which services, and on what timetable. As AT&T puts it, the company will build competitive local facilities only "where and when it makes economic sense."⁵²

But where does local competition make "economic sense"? The answer turns on both economic and regulatory factors.

Costs and Prices of Local Exchange Service. Local phone companies currently spend an average of between \$27 and \$37 per month to provide a local phone line and dial tone for normal levels of local calling. This is a national average for all lines, urban and rural, residential and business, and includes the average cost of supplying "interexchange access."⁵³

The average business subscriber pays a monthly fee for a basic line, dial tone, and subscriber line charge (SLC) that aligns fairly closely to that average cost – about \$27 per month, plus an average of about 1.7 cents per minute for local calls.⁵⁴ The average residential subscriber, by contrast, pays a basic fee of about \$17.⁵⁵ In addition, every major incumbent local

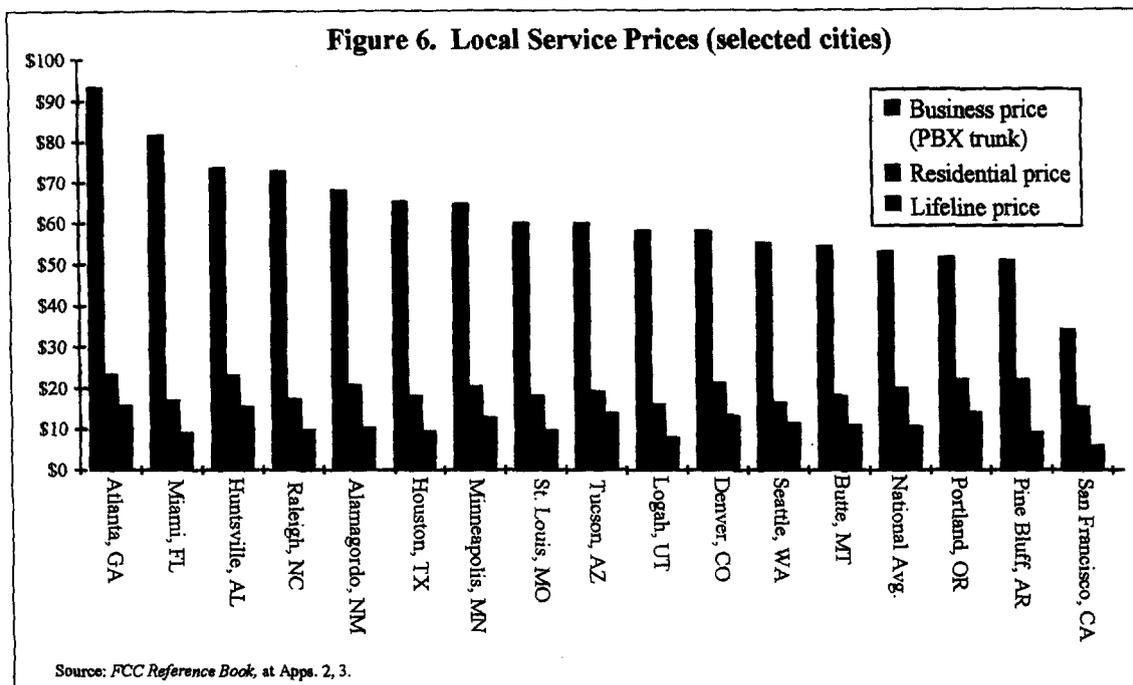
⁵²AT&T, 1996 Annual Report 3 (1997).

⁵³This assumes that the cost of providing local service is about \$27 per month, the median of estimates provided by the FTC and Hatfield Associates. The FTC has calculated that between 1983 and 1987 the average cost per line of providing basic local service (excluding interexchange access) fell from \$35.51 to \$33.15 per month. Comments of the Staff of the Bureau of Economics of the Federal Trade Commission at Table 2, Expanded Interconnection with Local Telephone Company Facilities, CC Dkt. No. 91-141 (F.C.C. filed Mar. 5, 1993) ("*FTC Comments*"). Assuming costs have continued to decline at that rate and adjusting for inflation, local service would cost around \$31 per month per line. Hatfield Associates' Hatfield Model version 3.1 (endorsed by AT&T and MCI) estimates the cost of providing local service by state and by carrier within each state. Weighting these costs by the number of lines for each carrier in each state yields a national average cost of around \$21 per line per month. Hatfield Associates, Hatfield Model Release 3.1 Model Description, CC Dkt. No. 96-45 (F.C.C. filed Feb. 28, 1997) ("*Hatfield Model Release 3.1*"). An additional \$6 of cost per line per month should be added to account for the non-traffic-sensitive costs of providing interexchange access. Third Report and Order, MTS and WATS Market Structure Phase I, 93 FCC 2d 241, 281-82 (1983) (indicating FCC desire to set SLC at \$6 per month to cover NTS costs).

⁵⁴FCC, Reference Book of Rates, Price Indices, and Household Expenditures for Telephone Service, at 24 (Mar. 1997) ("*FCC Reference Book*"). The \$27 per month includes measured service, SLC, and touch-tone. The business SLC is roughly \$6 per month per line, closely aligning with actual costs of NTS access.

⁵⁵*Id.* at 17. This rate is for unlimited local calls, SLC, and touch-tone service. The residential SLC was set at \$3.50 (under pressure from consumer advocacy groups, state regulators, Congress, and Judge Greene) to keep local telephone service affordable, but the FCC has noted that \$3.50 is not sufficient to cover the NTS costs of interexchange access. See, e.g., First Report and Order at ¶ 24, Access Charge Reform, CC Dkt. No. 96-262

carrier offers “lifeline” service of some sort, averaging around 50 percent lower than the basic rate, to subscribers who cannot afford more.⁵⁶ Figure 6.



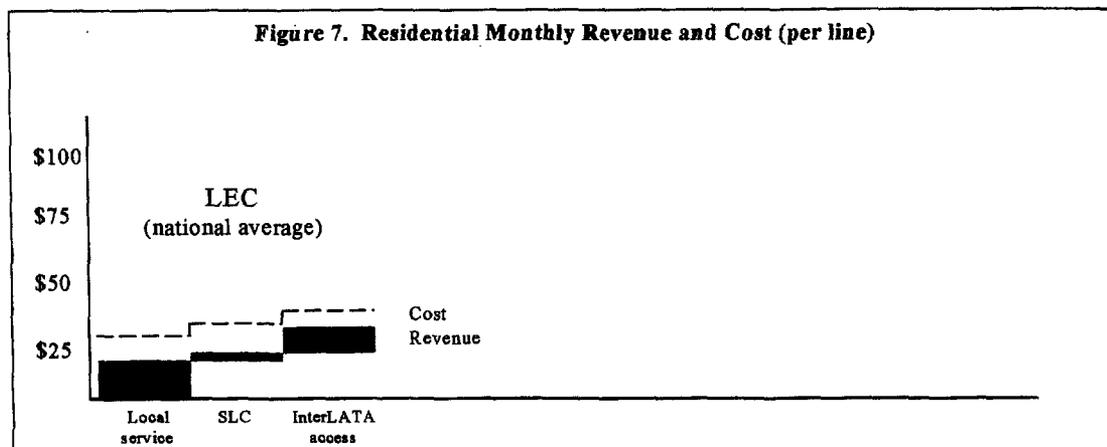
Incumbent local phone companies make up a net of \$4 to \$5 of the residential revenue shortfall on fees charged to provide interexchange access.⁵⁷ Figure 7. These are average numbers. For subscribers that make few if any interexchange calls, the cost of providing basic

(F.C.C. May 16, 1997) (“Access Charge Reform Order”) (noting that some of the “cost of the loop [is] not recovered from end users through the [SLC] flat charge”).

⁵⁶*Id.* at ¶ 27.

⁵⁷This is derived by multiplying the average number of interLATA minutes generated by a residential line by the average amount per minute that the LEC charges IXCs for interstate access and subtracting the cost of that access. According to FCC phone bill surveys, the average residential line made and received 249 minutes per month of interLATA calling. FCC, Long Distance Market Shares, First Quarter 1997 at Table 11 (July 1997) (“FCC Long Distance Market Shares”) (reporting 1996 surveys of 6,700 residential lines which generated 835,000 interLATA minutes of use). LECs charge IXCs an average of 3.5 cents a minute to deliver those calls. FCC, Statistics of Communications Common Carriers at Tables 2.6, 6.2 (1995/1996 ed. 1996) (“FCC Statistics of Common Carriers”) (in 1995, total access revenues, excluding SLCs and private line access were \$19.5 billion; total originating and terminating interLATA minutes were 548 billion). The average residential line therefore generated nearly \$9 per month in access revenue. Assuming that access costs are half of its price, interLATA access generates \$4 to \$5 profit per residential line per month. *FTC Comments* at Table 2.

loop and dial tone remains well above the price charged. Only the very heaviest interexchange callers pay off the whole subsidy through interexchange access charges alone.⁵⁸

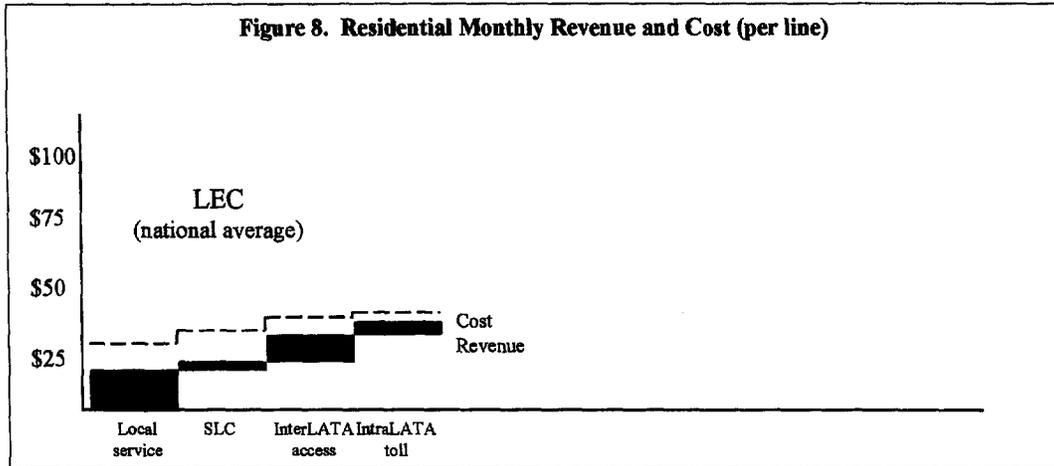


The average residential customer generates, in addition, about \$6 per month in local toll charges,⁵⁹ that is, on average, probably about twice the incremental cost of providing the service.⁶⁰ **Figure 8.** It is here that the revenue earned by the incumbent local phone company on the average residential line begins to catch up with cost.

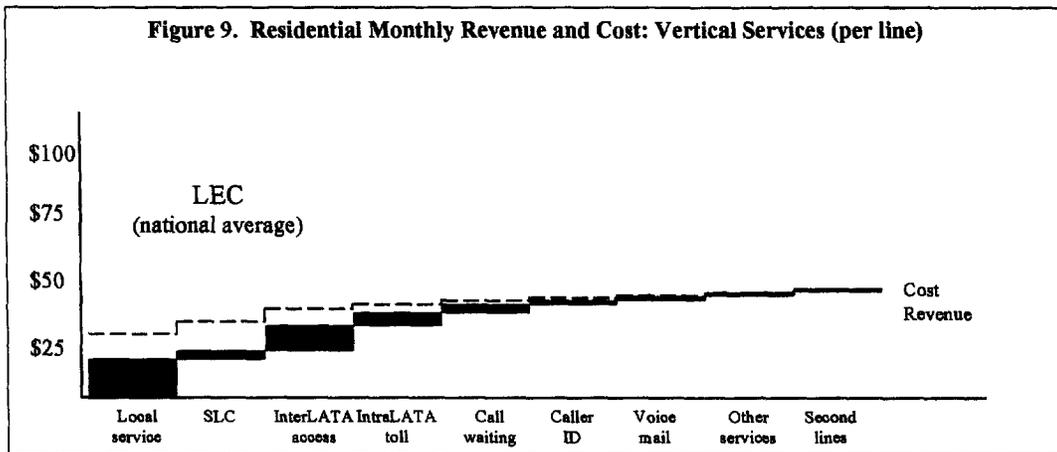
⁵⁸And only the largest business customers generate enough access revenue to make competition profitable.

⁵⁹This was calculated by multiplying the quotient of total LEC intraLATA toll revenue divided by the total number of intraLATA toll minutes by the average number of intraLATA toll minutes per month generated by each residential line; this yielded a result of \$5.80 per month in local toll revenue. *FCC Long Distance Market Shares* (LECs generated \$14 billion in local toll revenue in 1996); *FCC Statistics of Common Carriers* at Table 2.6 (22.8 billion total local toll calls in 1995). To derive the total average number of intraLATA toll minutes per month generated by each residential line, we assumed the following: (1) the average intraLATA toll call is the same length (3.5 minutes) as the average intrastate interLATA toll call, *ibid.* (20.1 billion intrastate interLATA calls made in 1995; 77 billion originating minutes – assuming that originating minutes are half of total); (2) that 52 percent of intraLATA toll minutes generated per month are from residential lines, *ibid.* (52 percent of all interLATA minutes per month are generated by residential lines), which means that there were 43 billion residential interLATA toll minutes in 1995, or 400 minutes per year (34 per month) per line.

⁶⁰This is a conservative estimate: MCI has estimated its own local toll margins at 66 percent. K.M. Leon, Lehman Brothers, Inc., Co. Rpt. No. 1567651, MCI Communications, at 6 (Mar. 7, 1995); *see also* R. Klugman, PaineWebber Inc., Ind. Rpt. No. 1537197, RBOCs and GTE, at 33 (Dec. 13, 1994) (“*RBOCs and GTE Industry Report*”) (margins for local toll calls are “typically an astronomical 80-90 percent”).



Finally, local phone companies make up another part of the shortfall from basic services – another \$4 per average residential line per month – on vertical services like call waiting and Caller ID.⁶¹ **Figure 9.**



⁶¹This was calculated by weighting the prices of various vertical services with the penetration of such services and adjusting for costs. Adjusted for penetration, call waiting generates an average of \$2.55 per residential line per month; voice mail, \$0.83 per month; Caller ID, \$1.17; additional lines, \$1.50; and all other services combined, \$0.50 per month. The following assumptions were made: (1) Call waiting penetration nationwide is 51 percent at a cost of \$5 per month; voice mail penetration is 11 percent at a cost of \$7.50 per month; Caller ID penetration is 18 percent at a cost of \$6.50 per month; and second residential line penetration is 15 percent at a cost of \$10 per month. D. Reingold, et al., Merrill Lynch Capital Markets, Ind. Rpt. No. 1864842, Telecom Services: RBOCs & GTE, at Table 10a (Feb. 19, 1997) (penetration rates); SWBT tariffed rates in Houston, Texas (proxy for service prices); (2) All other vertical services – including speed dialing, three-way calling, and many others – have a combined penetration of around 10 percent and a total cost of \$5 per month; (3) vertical services are provided at 60 percent margins above cost. See, e.g., *RBOCs & GTE Industry Report* at Table 7.

In the aggregate, local phone service today is a solvent business. But only because some components are profitable enough to make up for others that are not. Overall, local phone companies lose a net of about \$19 billion a year – about \$15 per month, per line – providing basic local service to residential subscribers.⁶² The losses are offset by above-cost prices charged for local business service, interLATA access charges, local toll, and vertical services. Table 4.

Service	Revenue \$ billions	Cost \$ billions	Net profit/loss* \$ billions	Profit/loss as a percentage of cost national average
Residential local service	17	33	-15	-47
Single line business local service	5	4	1	26
Multiple line business local service	17	11	6	57
Residential NTS access	4	7	-3	-41
Single line business NTS access	0.5	1	-0.5	-40
Multiple line business NTS access	2	2	0	0
Residential TS access	11	5	5	100
Business TS access	10	5	5	100
Residential intraLATA toll	7	4	4	100
Business intraLATA toll	7	3	3	100
Vertical services	8	3	5	166
*Note: Numbers may not add up due to rounding.				

These numbers did not arise by accident; they reflect deliberate regulatory policy. The FCC and state utility commissions are charged with maintaining “affordable rates” for all

⁶²This assumes the median local service cost figure of \$27 per line per month. Using the FTC-based cost estimate of \$31 per line per month yields a deficit of over \$24 billion per year; using the Hatfield data yields a deficit of over \$12 billion per year.

subscribers.⁶³ To that end, regulators require incumbent phone companies to offer service at uniform rates to all residential subscribers in their service areas, however much it may actually cost to serve the most distant, difficult-to-reach customers, and however few additional, more profitable services beyond basic dial tone customers may use.⁶⁴ As the FCC itself has noted, low rates for basic residential service are maintained “through, among other things, a combination of: geographic rate averaging, high rates for business customers, high interstate access rates, high rates for intrastate toll service, and high rates for vertical features and services such as call waiting and call forwarding.”⁶⁵

In most markets, subsidies of any kind are inefficient. Whether they are in local telephony, however, is not entirely clear. The value of the telephone network is enhanced each time a customer is added to the network – every new connection creates what economists call a positive “network externality.” As the FCC recently explained, “[a]t the simplest level, increasing the number of people connected to the telecommunications network makes the network more valuable to all of its users by increasing its usefulness to them.”⁶⁶ And whether or not they promote global efficiency, subsidized rates for basic residential service do undoubtedly promote connection and social equity.

Equally clear is that they do profoundly affect the evolution of competition. Their initial impact, of course, is to divert all competitive effort toward the most profitable, subsidizing side of the market, and away from the least profitable, subsidized side. This is precisely what has happened so far, in the twenty months since the 1996 Telecom Act fully opened all local markets to competition.

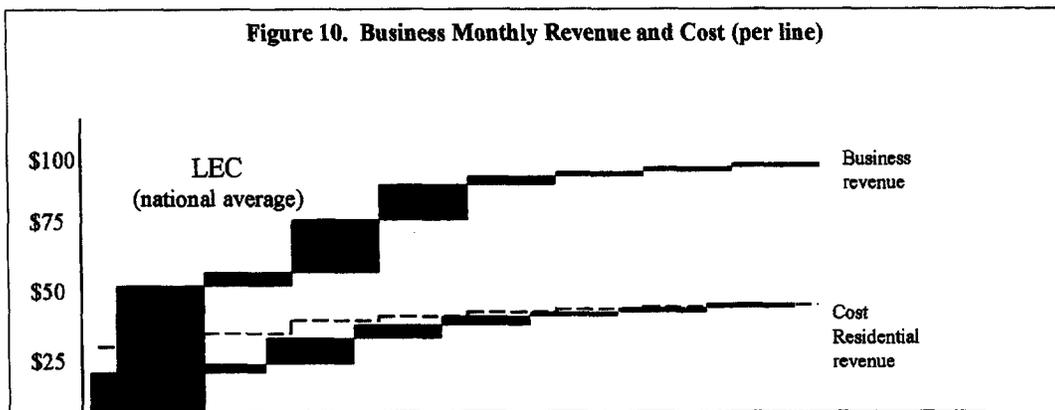
⁶³The Commission has recently held that the rates in effect before implementation of the Act were indeed “affordable.” Report and Order at ¶ 2, Federal-State Joint Board on Universal Service, CC Dkt. No. 96-45 (F.C.C. May 8, 1997) (“*Universal Service Order*”).

⁶⁴As the California Public Utilities Commission has noted, this requires each local phone company “to set a rate which reflect[s] an average of the higher cost exchanges with the more profitable exchanges.” Decision No. 96-10-066 at 24, Rulemaking on the Commission’s Own Motion into Universal Service and to Comply with the Mandates of Assembly Bill 3643, Rulemaking No. 95-01-20 (Cal. PUC Oct. 25, 1996).

⁶⁵*Access Charge Reform Order* at ¶ 11. See also California Decision No. 96-10-066 at 24, Rulemaking on the Commission’s Own Motion into Universal Service and to Comply with the Mandates of Assembly Bill 3643, Rulemaking No. 95-01-20 (Cal. PUC Oct. 25, 1996) (“The LECs were also able to price certain services above costs so as to subsidize basic local exchange service, which was generally priced below cost.”).

⁶⁶*Universal Service Order* at ¶ 8 (“Increasing subscribership also benefits society in ways unrelated to the value of the network per se. For example, all of us benefit from the widespread availability of basic public safety services, such as 911.”). See also Reed Hundt, Chairman, FCC, remarks before the Institute for International Economics, Washington, D.C. (Oct. 23, 1996) (“Economists teach us that the more people who use the network, the more valuable it becomes to each user. Within countries this provides a strong reason for promoting universal service.”).

Business Services. The most effective way for a competitive local carrier to red-line unprofitable customers out of its service territory is to shun residential customers completely, and serve only businesses. In serving business customers, competitors don't need to undercut below-cost service; business service rates are already close to cost. Additional revenues from measured local service,⁶⁷ interexchange access,⁶⁸ local toll,⁶⁹ and other vertical services add significantly to the overall profitability of providing business service. **Figure 10.**



Because they are also much heavier users of long-distance services, business customers tend to be more attractive to carriers than residential customers.⁷⁰ Competitors target their competition accordingly.⁷¹ As with residential local toll service, interexchange carriers are able

⁶⁷The average business line adds an additional \$17 in local charges per month, under the assumption that the average business line makes 200 five-minute business-day calls per month, at 1.7 cents per minute. This is the same assumption made by the FCC in preparing its national averages for business calls. *FCC Reference Book* at 24.

⁶⁸The average business line generates approximately \$9 per month in access revenue above cost, under the following assumptions: (1) there are 45 million business lines that account for 48 percent of total interLATA minutes, or 288 billion minutes total, *see note 59* (residential lines account for 52 percent of the total); (2) the LECs charge roughly 3.5 cents per minute for access, *see note 57*; and (3) the cost of providing access is roughly half of revenue, *see note 57*.

⁶⁹The average business line generates approximately \$12 per month in local toll profits, under the following assumptions: (1) the 45 million total business lines generate 39 billion minutes of intraLATA toll traffic per month, *see note 59* (residential lines generate 43 billion of 72 billion total); and (2) the average charge for an intraLATA toll call is 17 cents per minute, *see note 59*.

⁷⁰California Decision No. 96-10-066, Rulemaking on the Commission's Own Motion into Universal Service and to Comply with the Mandates of Assembly Bill 3643; California Investigation on the Commission's Own Motion into Universal Service and to Comply with the Mandates of Assembly Bill 3643, Rulemaking No. 95-01-020 at 145 (Cal. PUC Oct. 25, 1996) ("[B]usiness customers tend to be more attractive to carriers than residential customers because businesses tend to make more toll and long-distance calls.").

⁷¹Correspondingly, the FCC has recognized that "[b]usiness customers who spend more on telephone service will generally get the first benefit as new entrants market services for them. Residential customers . . . may wait longer to see results." FCC, Common Carrier Competition Report 1 (Fall 1995).

to carry business local toll minutes economically, and are moving to provide business local toll service, often in combination with their local or long distance offerings.⁷² “Competitive Access Providers” go directly after the profitable business of providing interstate access for larger business users.

Businesses typically cluster in downtown areas and business parks – the areas of highest daytime population. Accordingly, competitors have deployed their fiber networks to areas of high daytime population, while bypassing areas with low daytime population. **Maps 1-6.** In Atlanta, for example, MFS (WorldCom), TCG, and Intermedia Communications have meticulously threaded their networks through the business areas down Peachtree Street and Edgewood Avenue, past government buildings, banking headquarters, investment firms, law firms, and newspaper offices like the Atlanta Journal and Constitution.⁷³ In Denver, MCI’s, MFS’s, and TCG’s fiber networks run through the dense clusters of business high-rises in the heart of the downtown area, past First Interstate Bank and Arthur Andersen, then north and east to the industrial areas along the train tracks, and along the perimeter of, but not into, the low-income areas north and east of City Park.⁷⁴ In the San Francisco Bay area, the competitive fiber networks of TCG, MFS, and ICG run through the downtown business, financial, and shopping districts, then south to the hundreds of high-tech firms in Silicon Valley; they never touch the low-income Tenderloin district, nor even the high-income residential areas around Golden Gate Park.⁷⁵

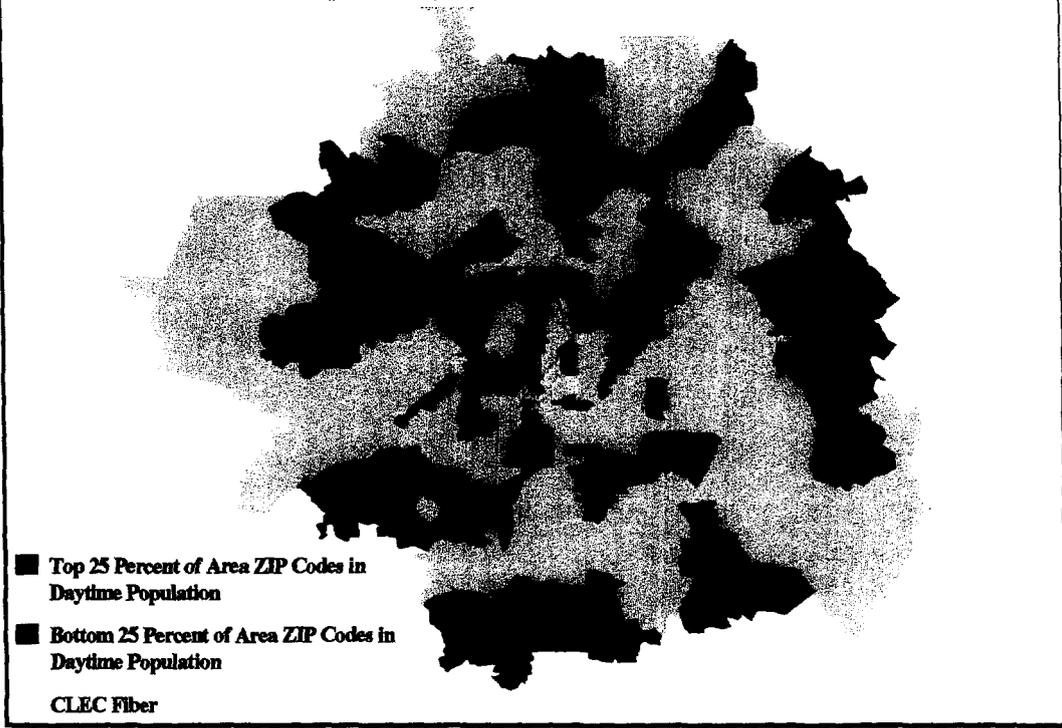
⁷²For example, “MCI One” is MCI’s bundled offering of toll (long distance, local toll, and toll-free), local, Internet access, and cellular services. MCI, MCI One for Your Business, <http://www.mci.com/aboutus/products/mcione/textbus2.shtml>. “ATT.ALL” is AT&T’s bundled offering of toll (long distance, local and 800 services), international, local, calling card, and cellular services. AT&T, AT&T.ALL, <http://www.att.com/attall/>.

⁷³The fiber then runs up Piedmont Avenue, passing upscale high-rise apartment buildings and shops, but avoids the low income areas south of I-20 and east of Moreland Avenue. Leaving downtown, the networks continue up Piedmont and Peachtree to another cluster of stores, high-rises, and financial offices, including Merrill Lynch, Prudential, and Alex Brown. In the suburban areas, the fiber runs to and through the business parks surrounding Perimeter Mall directly north of the city.

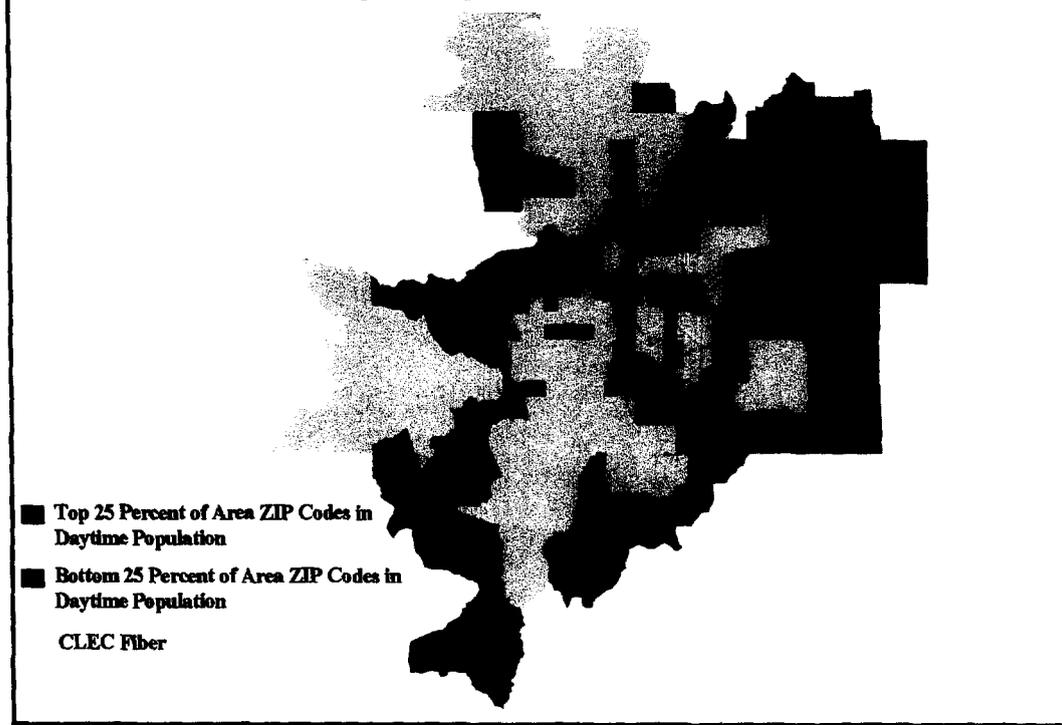
⁷⁴South of City Park, the fiber runs east through a high income residential area, passing, among other things, three hospitals, and out to the Colfax Corridor, a stretch of small businesses along Colfax Street heading to Aurora. The networks head south to the Denver Technology Center – a collection of high-technology office buildings, including Lucent and TCI – passing business parks, small businesses, clusters of apartment complexes, Denver University, and South High School along the way. The fiber continues south to pass companies in the electronics industry, but does not enter any of the residential areas west and north of the city.

⁷⁵The fiber passes the Bank of America headquarters, the Transamerica tower, and the Hyatt and St. Francis hotels around Union Square. It then heads south of the city, through industrial South San Francisco, to Silicon Valley, home to such firms as Intel, Apple Computer, Motorola, and Sun Microsystems. The fiber then runs north along the highways of the East Bay suburbs, but does not incorporate residential areas, ending up in downtown Oakland to meet, among other professional and industrial office buildings, Aetna, Pacific Gas & Electric, and Kaiser Permanente hospital.

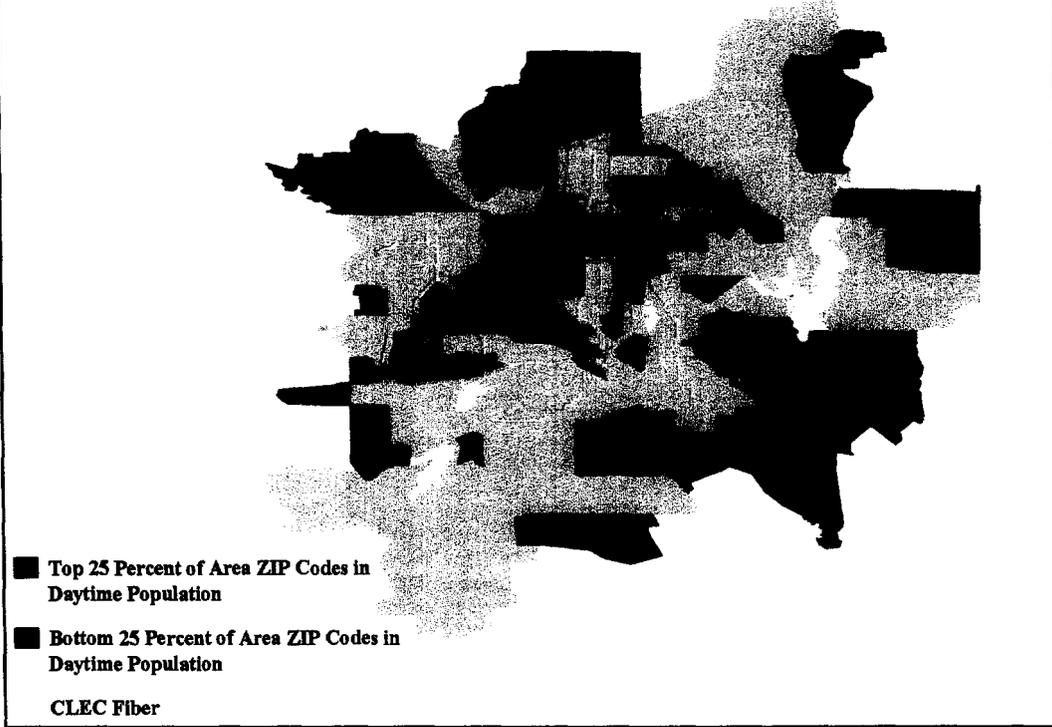
Map 1. Competitive Networks In Atlanta



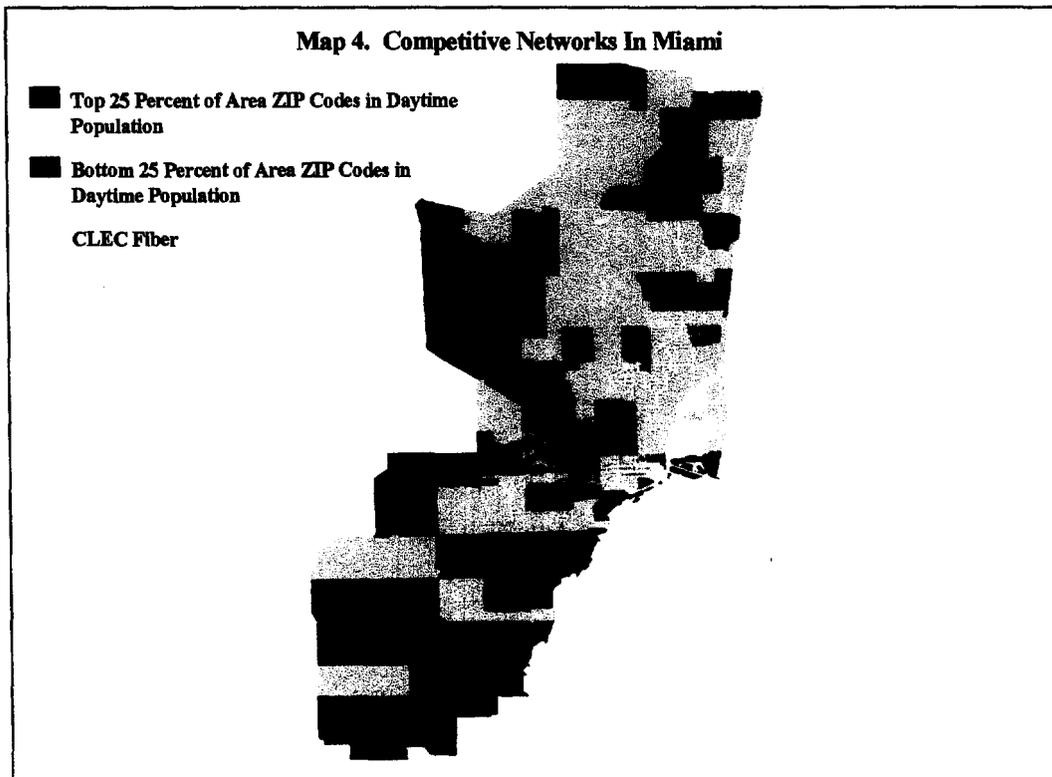
Map 2. Competitive Networks In Denver



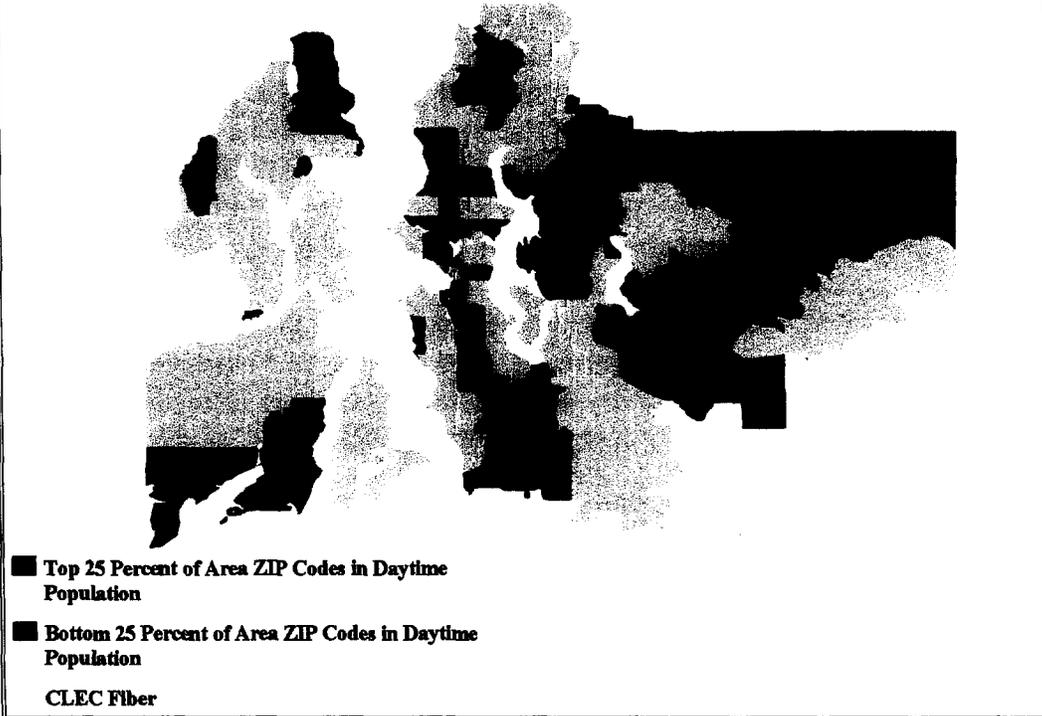
Map 3. Competitive Networks In Dallas



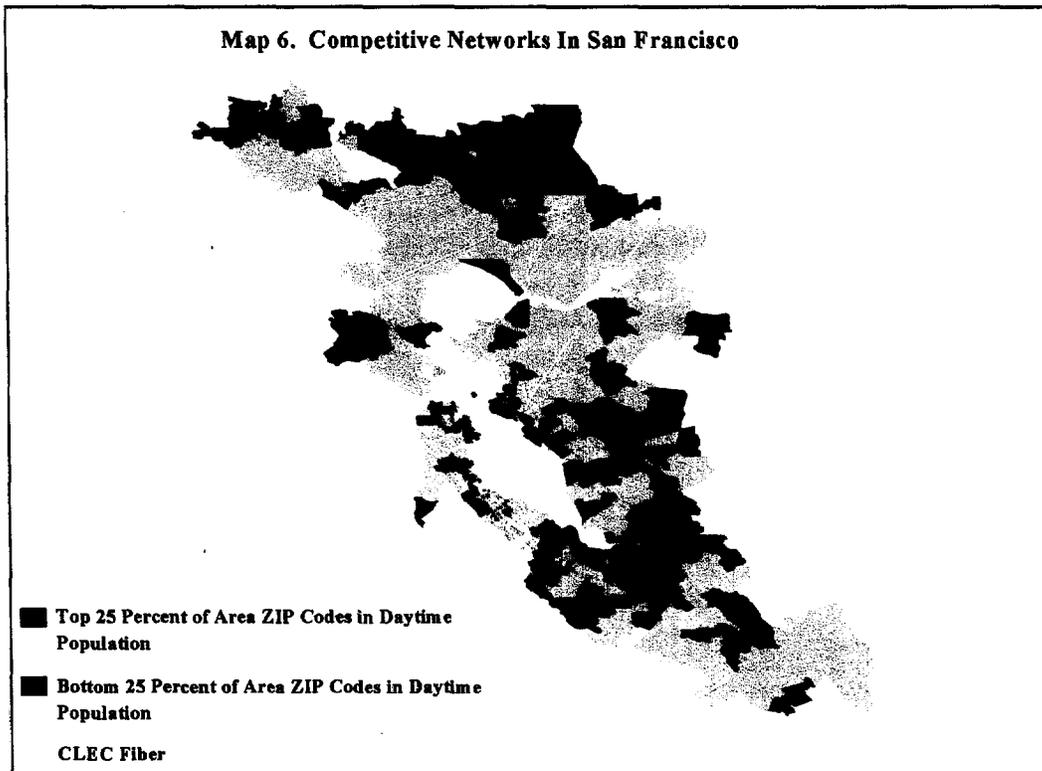
Map 4. Competitive Networks In Miami



Map 5. Competitive Networks In Seattle



Map 6. Competitive Networks In San Francisco



WorldCom, which announced an unsolicited \$30 billion stock bid for MCI on October 1, 1997,⁷⁶ has focused its competitive efforts almost exclusively on the business side of the market. The company's local arm, MFS, has constructed 52 fiber networks to serve businesses in major markets, and has plans to purchase fiber networks in 40 other markets as part of its Brooks Fiber and MCI acquisitions.⁷⁷ WorldCom/MFS has a "[b]usiness customer focus," and a "focus on major U.S. and international cities."⁷⁸ Counting both the MCI and Brooks Fiber assets that WorldCom proposes to acquire,⁷⁹ the new WorldCom would own local fiber networks in 92 cities.⁸⁰ But WorldCom is equally committed to staying out of residential markets. "Our strategy is not in the consumer business," the company flatly declares. "It's very difficult for us to find a way to make economic sense out of the advertising budgets, the customer service budgets, etc., required to be in the consumer business."⁸¹ According to Chairman and CEO Bernard Ebbers, "[N]ot AT&T, not MFS or anyone else, is going to build local telephone facilities to residential customers. Nobody ever will, in my opinion."⁸²

Even WorldCom's long-distance business is overwhelmingly focused on business customers. Only 5 percent of WorldCom's revenues come directly from residential end users.⁸³ WorldCom and MCI combined would serve some 27 million presubscribed long-distance lines

⁷⁶*Brooks Fiber Acquired: WorldCom Makes Unsolicited \$29-Billion Stock Bid for MCI, Topping BT Offer*, Communications Daily, Oct. 2, 1997.

⁷⁷WorldCom Press Release, *WorldCom and Brooks Fiber Announce Merger; Expands WorldCom's Local Presence from 52 Metropolitan Areas to 86; Adds Significant Local Access Expertise, Local Fiber Networks and Switching Capacity*, PR Newswire, Oct. 1, 1997.

⁷⁸S. Comfort, et al., Morgan Stanley, Dean Witter, Co. Rpt. No. 2556537, WorldCom Inc., at 15 (June 3, 1997).

⁷⁹*WorldCom to Acquire Brooks Fiber; Makes Offer for MCI Comm.*, Standard & Poor's, Oct. 1, 1997; *Brooks Fiber Acquired: WorldCom Makes Unsolicited \$29-Billion Stock Bid for MCI, Topping BT Offer*, Communications Daily, Oct. 2, 1997.

⁸⁰WorldCom serves 52 cities, Brooks Fiber serves 34 cities that WorldCom does not already serve, and MCImetro serves another 8 cities that neither of the other two companies serve. *WorldCom Brooks Fiber*, Reuters, Oct. 1, 1997.

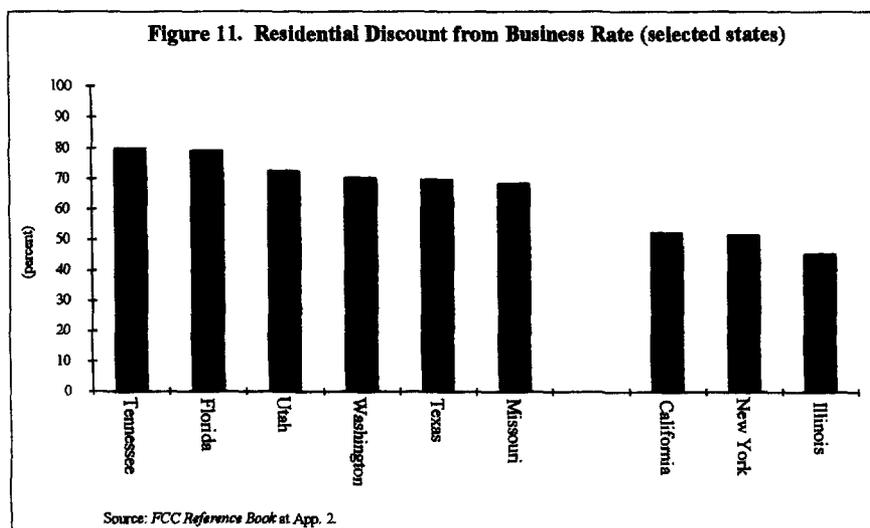
⁸¹M. Mills, *WorldCom Would Shift MCI's Focus*, Washington Post, Oct. 3, 1997, at A1 (quoting John Sidgmore, WorldCom Vice Chairman); G.W. Woodlief, et al., Prudential Securities Inc., Co. Rpt. No. 2539124, WorldCom Inc., at 1 (Mar. 10, 1997). See also K. Russell, *Ebbers: WorldCom, Mississippi Paired for the Future*, Mississippi Business Journal, May 12, 1997, at 13 (quoting Bernard Ebbers: "[O]ur focus is primarily on business customers."); T. J. Mullaney, *Competition Calling: Anyone There?*, Baltimore Sun, Apr. 6, 1997, at 1D (quoting Ron Vidal, WorldCom vice president for new ventures, "We don't play in residential.").

⁸²M. Mills, *Hanging Up on Competition?*, Washington Post, June 1, 1997, at H1.

⁸³T.K. Horan, et al., Smith Barney, Co. Rpt. No. 1826935, WorldCom Inc., at Table 4 (Jan. 7, 1997). The company earns 20 percent of its revenues from residential customers, but only indirectly, by selling network capacity wholesale to resellers like Excel Communications. S. Comfort, et al., Morgan Stanley, Dean Witter, Co. Rpt. No. 2556537, WorldCom Inc., at 9 (June 3, 1997).

(about 17 percent) and earn about \$20 billion in long-distance revenues (a roughly 25 percent market share).⁸⁴ Soon after the proposed acquisition of MCI was announced, one WorldCom official candidly remarked that WorldCom's "religious focus is on the business customer . . . [i]t is a jihad . . . [t]his other market is something new," and suggested that the company "would consider" turning MCI's 20 million residential customers over to other long-distance companies when the merger was completed.⁸⁵ WorldCom plans to compete aggressively for business customers, however, offering them bundles of local, long-distance, and Internet service.⁸⁶

Until competition has permeated every last corner of the business market – a process that will surely take some years – no other competitive strategy would make sense. Residential rates are pegged some 50 to 80 percent lower than business rates everywhere in the country.⁸⁷ Figure 11. But the actual cost of providing service to businesses is almost always much lower, because businesses congregate in more urban areas, and because many businesses use multiple lines. For new entrants, the price-to-cost ratios are at least twice as attractive, and more typically 4 or 6 times as attractive, in business markets than they are in residential ones. For multi-line businesses, the ratios rise higher still.



⁸⁴FCC Long Distance Market Shares at Tables 2, 3, and 5.

⁸⁵M. Mills, *WorldCom Clarifies MCI Plans*, Washington Post, Oct. 4, 1997, at D1 (quoting Vice Chairman John Sidgmore).

⁸⁶According to one analyst, WorldCom "envisions turning its \$600 per month long-distance customer into an estimated \$1,500 combined local (\$300 per month), long-distance, and Internet (\$600 monthly) customer." G.W. Woodlief, et al., Prudential Securities Inc., Co. Rpt. No. 2539124, WorldCom Inc., at 2 (Mar. 10, 1997).

⁸⁷Virginia and Tennessee have the highest residential discount, at 80 percent; Illinois the lowest, at 45 percent. FCC Reference Book at App. 2. Statewide figures are averages of the rates for the cities surveyed in each state.

Local Toll Service. For business and residential subscribers alike, the highest profits, and lowest costs, are certainly centered in the market for local toll services. In states that have ordered local toll dialing parity⁸⁸ – including the two most populous states, California and New York – competitors are already aggressively bundling resold local service with their own local toll services.⁸⁹ In California, for example, MCI bundles resold Pacific Bell service with its own local toll service to offer unlimited local and local toll calling for \$24.95.⁹⁰ For most residential subscribers, this is almost certainly less than the cost PacBell alone incurs to provide the local service that MCI resells. But PacBell provides that service for resale at 17 percent off its retail rates,⁹¹ or about \$11, which allows MCI, in effect, to charge \$15 a month for unlimited local toll calling over MCI's network.

MCI, AT&T, and other interexchange carriers offer local toll services in many markets at steep discounts below incumbent carrier rates.⁹² In June, MCI announced it would offer flat-rate local toll calling plans to residential customers in 40 states.⁹³ As of May 1997, AT&T claimed more than five million customers had signed up for AT&T local toll service.⁹⁴ LCI announced in July that it is offering local toll service through presubscription in 23 states.⁹⁵ Hundreds of other companies compete in the local toll market using 10-XXX "dial-around" access codes.⁹⁶

Figure 12.

⁸⁸In the 40 states that have thus far ordered dialing parity, the orders are contingent upon fulfillment of the Act's requirements. 47 U.S.C. § 251(b)(3) (requiring all LECs to provide dialing parity to competing providers). *But see* California v. FCC, No. 96-3519 (8th Cir. Aug. 22, 1997) (vacating FCC's dialing parity rules); 47 U.S.C. § 271(e)(2)(B) (exempting the Bell Companies from providing intraLATA toll parity in any state that had not ordered it as of December 19, 1995 until (1) the Bell Company obtains authority to provide long-distance service in that state, or (2) 3 years from enactment, whichever is sooner).

⁸⁹AT&T, MCI, and Sprint are not, however, permitted to bundle a resold local service obtained from a Bell Company with their own long-distance service in any state, until the Bell Company in that state receives in-region interexchange authority, or three years from enactment, whichever is sooner. 47 U.S.C. § 271(e)(1).

⁹⁰J. Angwin, *Why It Pays for Consumers to Shop Phone Company*, S. F. Chron., Apr. 1, 1997, at D6.

⁹¹Rulemaking on the Commission's Own Motion Into Competition for Local Exchange Service at App. B, Decision No. 96-03-020 (Cal. PUC Mar. 13, 1996).

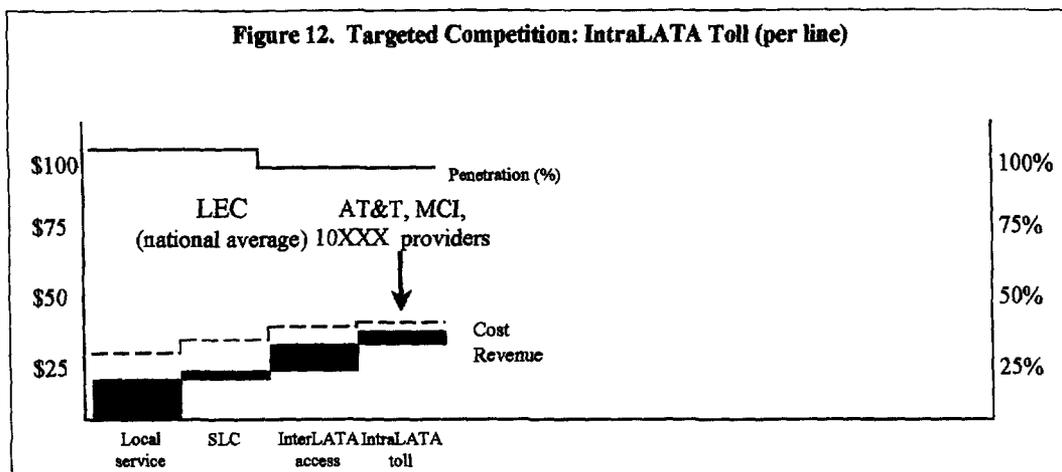
⁹²MCI's rates are up to 44 percent lower than the average LEC rate – 12 cents per minute in most regions, down to as low as 4 cents per minute in PacBell's serving areas. MCI Press Release, *Local Toll Revolution: MCI Offers Millions of Dollars in Savings to Consumers in 40 States*, June 2, 1997.

⁹³*Ibid.*

⁹⁴AT&T, Now AT&T Puts Even More Within Your Reach, <http://www.att.com/localtoll/consumer>.

⁹⁵LCI Press Release, *LCI International Offers Savings on Local Toll Service*, PR Newswire, July 9, 1997.

⁹⁶The demand for such access codes has been so high that the industry has been forced to transition from 3-digit to 4-digit Carrier Identification Codes. Order, Administration of the North American Numbering Plan Carrier Identification Codes, CC Dkt. No. 92-237 (F.C.C. July 18, 1997).



BellSouth estimates it has lost 1 million local toll customers in Florida alone, or 20 percent of its base in that state, during the past 20 months to competitors such as AT&T.⁹⁷ Nationwide, analysts estimate that competitive carriers have already captured 15 percent of all local toll traffic, and predict 50 percent capture within three years.⁹⁸

Vertical Services. Wherever it is technically feasible to do so, local competitors compete to offer residential customers the vertical services alone, or a bundle of basic and vertical, but not just basic. Manufacturers of answering machines and electronic databases provide some competition through sales of stand-alone equipment. AT&T bundles call waiting into its basic local service in some cities in Illinois.⁹⁹ MCI openly admits that its “focus is on high-value customers who use multiple services,”¹⁰⁰ and that it intends to “continue to transition away from low-value Mass Market customers who respond only to price promotions.”¹⁰¹ Providers of

⁹⁷S. Rosenbush, *Competition Bringing Cheaper Local Toll Calls*, USA Today, Aug. 5, 1997, at 1B.

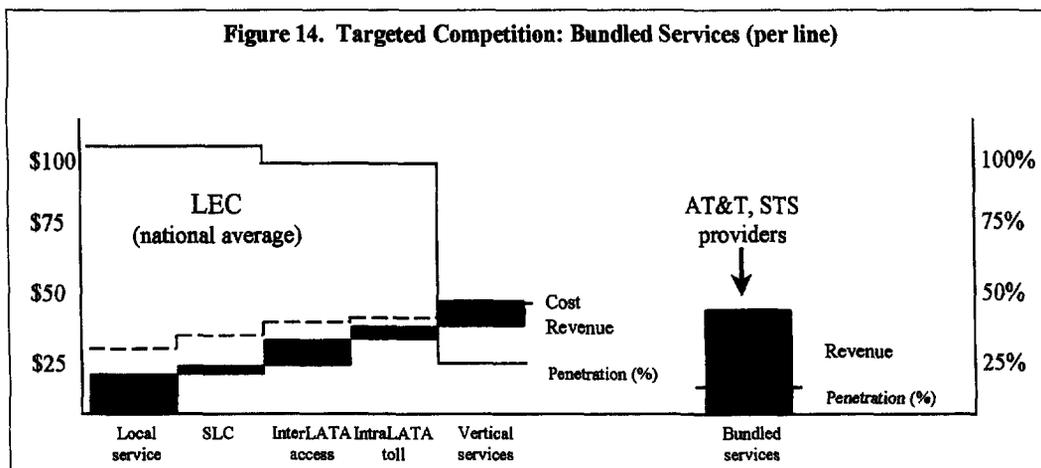
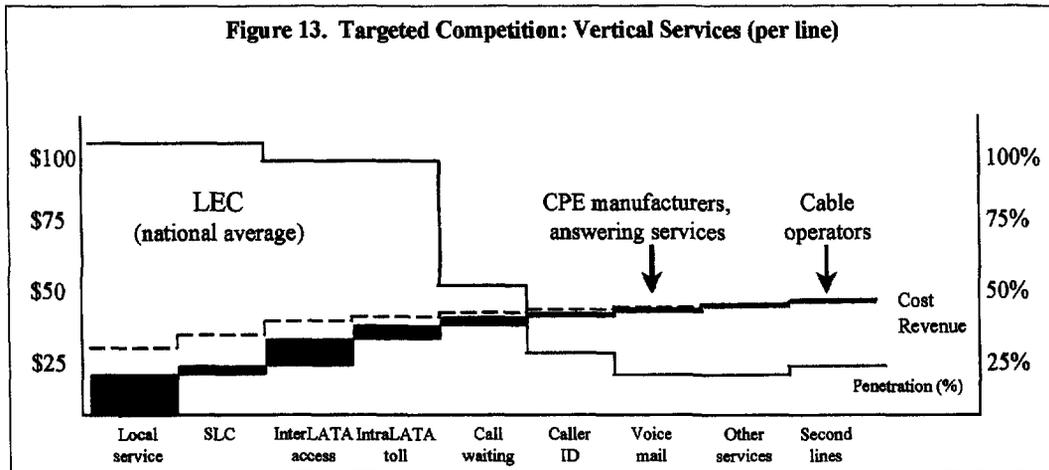
⁹⁸See, e.g., *ibid.*; T. Kontzer, *Pacific Bell's Hard Sell: Looming Competition Sparks Lavish Ad Push*, Business Journal – San Jose, Oct. 31, 1994 (“Companies . . . could lose as much as 40 percent of their [local toll] customer base.”).

⁹⁹J. Kirk, *AT&T Moves in on Ameritech's Market*, Chicago Sun-Times, Apr. 16, 1997, at 72.

¹⁰⁰MCI, First Quarter 1997 Investor Bulletin, http://investor.mci.com/investor_pubs/quarterlies/qr_1997/qr_1997-1.html.

¹⁰¹*Ibid.*; see also *LD Firms Reject Local Service Price War*, Telecommunications Alert, Apr. 11, 1997 (citing AT&T, Sprint, and MCI representatives saying that they will not start a price war with the Bell Companies as they move into the local service market, and that they will focus on the quality and range of services, rather than price).

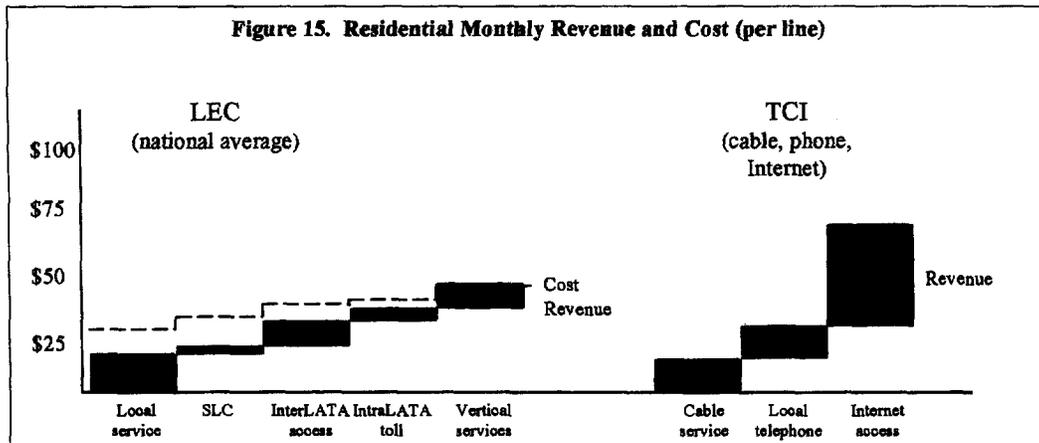
shared tenant services have had great success in offering vertical service packages to their subscribers.¹⁰² Figures 13 and 14.



Bundling likewise defines the residential competition provided by cable. Cable companies have already begun to offer high speed Internet access to their existing cable subscribers, using their existing networks. These offerings will in time make cable a formidable competitive threat as Internet services expand to encompass all others. The very last thing they

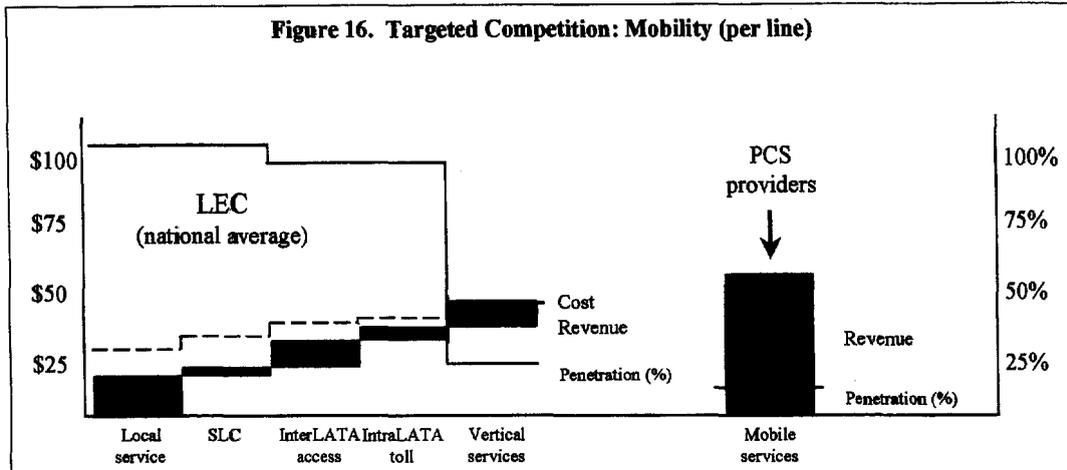
¹⁰²For example, Jones Communications in Alexandria, Virginia reports that 61 percent of its customers purchase a vertical service package in addition to basic service. K. Gibbons, *Jones Primes the Pump for Advanced Calling Buys*, Multichannel News, July 15, 1996, at 30A.

will add, if they add it at all, will be conventional voice service, at conventional phone company prices. For example, TCI in Hartford offers cable and basic local services for a total of \$24.07 per month, vertical services for between \$5.95 and \$14.95 per month, and Internet access for \$39.95 per month.¹⁰³ **Figure 15.**



Mobility (wireless) itself is another “vertical” add-on of sorts. Wireless service remains more expensive than wireline, but less so than meets the eye. PCS providers routinely bundle in Caller ID, voice mail, and paging. On a bundled basis, these services are already priced at levels directly comparable to those charged for similar bundles of wireline residential alternatives – \$40 to \$50 per month. The one thing no PCS provider is much interested in offering is, once again, basic voice service, at the basic phone company price. **Figure 16.**

¹⁰³Warren Publishing, *Television and Cable Factbook* at D-237, (1996); conversation with TCI PeopleLink customer service personnel (Aug. 26, 1997); Cable Datacom News, *Cable Modem Commercial Launches and Trials in North America*, Sept. 12, 1997, <http://cabledatacomnews.com/cm7.htm>.



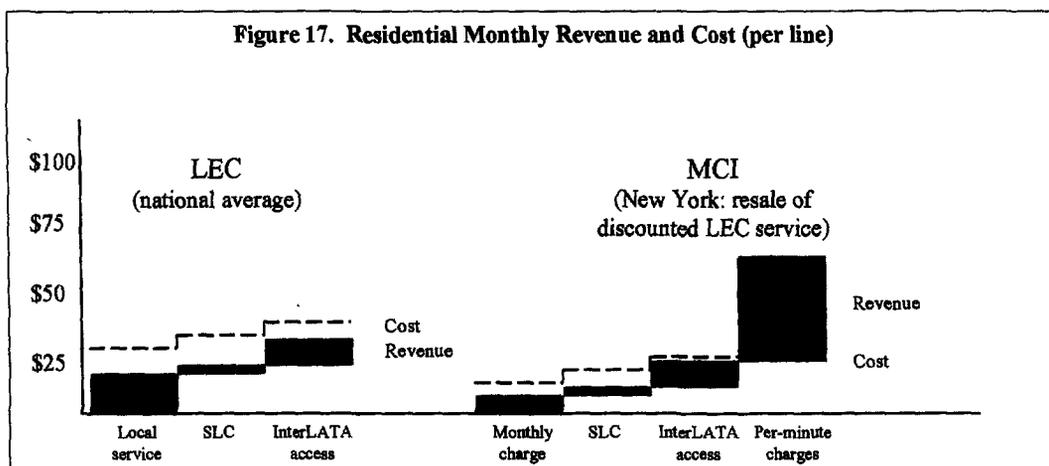
Measured Service. A final strategy recently adopted by some resellers is to offer residential service under pricing plans radically different from those prescribed by regulators for incumbent local phone companies. MCI, for example, has begun reselling Bell Atlantic's (formerly NYNEX's) local residential service in New York. MCI charges a modest \$9.80 a month for the resold line and dial tone. But on top of that, MCI charges 10.6 cents per minute for local calls.¹⁰⁴ MCI also bundles in local toll calls at 10 cents per minute. For a customer able to subscribe to a dime-a-minute long-distance service, it will therefore be cheaper to place a toll call of any kind, 30 miles or 3,000, than it is to call across town. In effect, MCI is offering to install the equivalent of a payphone on private premises, reselling Bell Atlantic's below-cost service at a price even further below cost, while hoping to make a profit on measured services priced well above cost. Bell Atlantic itself – which is actually providing both the switching and transport for the cross-town call – receives only a discounted share of the per-minute charges that are needed to make MCI's re-packaging of the service economically viable.

The average residential customer subscribing to MCI's service would pay MCI about \$10 per month in fixed charges and nearly \$44 in local per-minute charges – with the service itself being supplied to MCI at discounted rates.¹⁰⁵ **Figure 17.** But of course, the service isn't aimed

¹⁰⁴This is the daytime rate. MCI charges 8.7 cents per minute in the evening and 3.7 cents at night or on weekends. MCI, MCI Home Phone Service - New York, <http://www.mci.com/aboutus/products/local/NY2.shtml>.

¹⁰⁵The average residential customer originates 619 local calling minutes per month. NECA, Statistics on Network Usage by Carrier 1995 (1996) (in 1995 LECs reported over 2.2 trillion local dial equipment minutes); FCC Statistics of Common Carriers at Table 2.5 (166 million total access lines, 63 percent of which are residential). For the purposes of this calculation two assumptions were made: (1) the average residential line originates the same number of local minutes per month as the average business line; and (2) the number of originating and terminating minutes on all access lines are equal. The calculation for local per minute charges assumes that the 619 minutes per month break down as follows: 20 percent daytime, 40 percent evening, and 40 percent weekends.

at average customers; it is aimed at customers who make few local calls but many toll calls. MCI plainly has no interest in reselling basic local residential service alone; even the 19.1 percent discount it gets from Bell Atlantic¹⁰⁶ probably would never cover MCI's costs of marketing and overhead. And it is inconceivable that MCI would ever build any facilities of its own simply to offer residential basic service at prices comparable to Bell Atlantic's undiscounted rates. There is no profit to be made undercutting incumbent prices that already sharply undercut economic reality.



The FCC itself has reached precisely that conclusion in the analogous context of payphones. Users of residential phones pay \$17 a month and 0 cents per minute; users of payphones have, in the past, typically paid \$0 a month and 10-25 cents per three-minute call. Competitive payphone providers resell local service much as MCI attempted to do in New York, but they resell it in drugstores and supermarkets rather than in homes or apartments.

With open entry and a right to interconnect,¹⁰⁷ only price regulation remains as a possible obstacle to competition.¹⁰⁸ States that set prices too far below cost, the FCC recently concluded,

¹⁰⁶Opinion and Order Determining Wholesale Discount, Joint Complaint of AT&T Communications of New York, Inc., et al., Against New York Telephone Company Concerning Wholesale Provisioning of Local Exchange Service, Case 95-C-0657 (N.Y. PSC Nov. 27, 1996).

¹⁰⁷Payphone operators were granted the right to interconnect with local exchange networks in 1984. Memorandum Opinion and Order, Registration of Coin Operated Telephones, 49 Fed. Reg. 27763 (1984).

¹⁰⁸Report and Order, Implementation of the Pay Telephone Reclassification and Compensation Provisions of the Telecommunications Act of 1996, 11 FCC Rcd 20541, 20548 (1996). The Commission also noted some impediments to competition that might arise from inadequate consumer information, or from market power that

“prevent the market from operating efficiently to deploy payphone facilities.”¹⁰⁹ Competition rises as price regulation falls. Several states have in fact deregulated, and the overall state of competition is excellent.¹¹⁰ Competitors that won’t resell residential service resell business service instead – often to “residential” consumers – through payphones located in convenience stores and gas stations. The indigent user too poor to pay even for highly subsidized residential service is served instead by payphone operators who compete aggressively for the business.

derives from control of real estate. *Id.* at 20549-20550. But these locations, the FCC determined, were likely to be the exception rather than the rule. For the most part, payphones “are likely to face a sufficient level of competition from payphones at nearby locations to ensure that prices are at the competitive level.” *Id.* at 20549.

¹⁰⁹*Id.* at 20548.

¹¹⁰*Id.* at 20547 (“Entry into the payphone business appears to be easy.”).

3. COMPETITIVE OPPORTUNITIES AND REGULATORY IMPEDIMENTS

That some elements of basic, residential, local service are priced below cost complicates the competitive picture, but it does not, standing alone, preclude competition altogether. At current prices, incumbent local carriers themselves could not provide just basic residential service and nothing more, but they don't have to. Neither do their competitors. The typical customer buys enough additional local toll and vertical services to remain an economically attractive competitive target, absent other obstacles to entry. And the typical customer strongly prefers to buy the entire bundle from a single vendor, if (s)he can.

Customer Demand. That customers much prefer to buy a bundled package of telecom services is widely recognized in the industry. Local phone companies retain significant shares of local toll markets even where competitors undercut their prices quite significantly in states that have fully opened those markets to competition. A 1996 survey of over 800 U.S. households found that nearly 80 percent would prefer to subscribe to bundles of local and long-distance, wireless, data, and video services supplied through a single vendor.¹¹¹ From the supply side, vendors recognize that bundling lowers their marketing costs, raises customer loyalty, reduces churn levels, and increases overall usage¹¹² – in business and residential markets alike. MCI and AT&T have already begun to bundle long-distance and local toll services.¹¹³ Sprint is moving to “a common Sprint identity for all our products and services, including local telephone service, complex data systems, everything.”¹¹⁴ WorldCom is striving to define itself as “the single point-

¹¹¹*Consumers Would Prefer Bundled Branded Service*, Radio Comm. Report, Sept. 9, 1996, at 42. As AT&T has pointed out, “Customers have always liked bundles.” Joseph P. Nacchio, Executive Vice President, Consumer and Small Business Division, AT&T, Keeping the Customers Satisfied, speech before the Morgan Stanley Conference, New York, NY, Feb. 13, 1996.

¹¹²Brian Brewer, MCI, Business Markets Presentation at Slide 9, http://investor.mci.com/investor_pubs/presentations/brewer/sld009.htm. See also Remarks of Robert E. Allen, Former Chairman and CEO, AT&T, AT&T: Creating New Value in a “Fast-Forward” Industry, June 11, 1996, at 4 (“AT&T’s customers will be much less likely to switch if they’re connected to us with a bundle of services tailored to their needs.”).

¹¹³See note 89 in Section 2.

¹¹⁴Gary D. Forsee, President and COO, Sprint Long Distance Division, The Power of Brand Image, remarks at the Forbes-Amex Innovative Strategies Conference, May 16, 1996.

of-contact for . . . telecommunications needs.”¹¹⁵ GTE and Southern New England Telephone are already allowed to add bundled long-distance service to their residential offerings, and have been notably successful in doing so. Customers will buy bundles, rather than bits and pieces of service, if they can.¹¹⁶

In light of these strong consumer preferences, it seems clear that as soon as one vendor begins offering fully bundled local and long-distance service in any major market, other vendors will have to follow. They will have no choice.

Supply-Side Incentives. On the supply side of the market, providers have equally good economic reasons to bundle, too. Long-distance carriers can provide local services on the Class 4 switches already widely deployed in their networks.¹¹⁷ Cable companies have already deployed their wires, and loaded their costs, on video services; they can now offer high-speed data services at the margin. Electric companies may have similar opportunities to use their customer base to sell competitive local services.¹¹⁸ PCS will likewise forge ahead regardless, because for them the marginal costs of serving residential subscribers are quite low.¹¹⁹

¹¹⁵MFS Press Release, *MFS Now Offering Local Telephone Services Over Its Own Fiber Networks in Hartford and Stamford*, July 29, 1996. See also MFS Prospectus, Registration No. 333-4395, July 4, 1996, (WorldCom believes it is “uniquely positioned to take advantage of technical, regulatory and market changes which promote demand for an integrated set of communications services.”).

¹¹⁶D. Reingold, et al., Merrill Lynch Capital Markets, Ind. Rpt. No. 1705201, *Telecom Services: Long Distance*, at 23 (Feb. 15, 1996) (the players achieving the full bundle soonest and at lowest investment cost are likely to be able to offer more attractive cross-discounts to customers). See also B. Bath, et al., Lehman Brothers, Inc., Ind. Rpt. No. 1892197, *Telecom Services: RBOCs & GTE*, at 14 (July 9, 1997) (“Without [the ability to offer bundles] the RBOCs face significant degradation of their business customer base, as the IXCs and CLECs will be offering a bundled package of services to attract the most profitable customers.”).

¹¹⁷AT&T already offers local service to 2,500 of its dedicated access customers in 45 states using its existing 4ESS switches, through a service called Digital Link. Digital Link provides AT&T with “the ability to take the existing network configurations of our large customers, add local traffic and route it accordingly.” J. Dix and D. Rohde, *AT&T Plots Invasion of Baby Bell Turf*, *Network World*, July 8, 1996, at 1 (quoting Harry Bennett, vice president and general manager of AT&T’s local services division); see also L. Turmelle, *AT&T Takes First Step to Local Service*, *Bridgewater (NJ) Courier-News*, Jan. 28, 1997, at A2.

¹¹⁸Restrictions that barred utility companies from providing telecommunications services were removed by § 103 of the 1996 Act. See, e.g., D. Pauly, *Electric Utility Will Add Telephone Service to Offerings*, *Rocky Mountain News*, Jan. 19, 1997, at 4f (Central & South West Corporation announced it would provide service in conjunction with ICG); A. Salpukas, *Texas Utilities Buys Texan Phone Company*, *Austin American-Statesman*, Aug. 26, 1997, at D1 (Texas Utilities recently purchased Lufkin-Conroe Communications, the fourth-largest local telephone company in Texas).

¹¹⁹Moreover, the potential profits from innovative new service outweigh any competitive losses stemming from unleashing the Bells – the regulatory issue discussed later in this section. And there may be no losses at all if regulators can be persuaded that cable data services and wireless services don’t actually offer true local competition.