Trends in Telephone Service

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Industry Analysis Division
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INTRODUCTION:

Trends in Telephone Service is published by the Industry Analysis Division of the Common Carrier Bureau of the Federal Communications Commission (FCC). We have designed this report to provide answers to some of the most frequently asked questions about the telephone industry -- questions asked by consumers, members of Congress, other government agencies, telecommunications carriers, and members of the business and academic communities. To this end, the report contains summary information about the size, growth, and development of the telephone industry, including data on market shares, minutes of calling, number of lines, and telephone subscribership. The report also provides information about access charges, consumer expenditures for service, infrastructure, international telephone traffic, long distance carriers, telephone rates and price changes, and universal service support.

Trends in Telephone Service summarizes a variety of information contained in other reports that are published periodically by the Industry Analysis Division. In most cases, these other reports give much more detailed information than that provided here. These reports can be accessed from our internet site, **FCC-State Link**, at <http://www.fcc.gov/ccb/stats>. In addition, to facilitate further information gathering by consumers and others, we have listed additional sources of information in the appendix; also we have provide information on contacting the authors of this report in the appendix.

1 ACCESS CHARGES:

Long distance companies rely on the loops, switches, and transport facilities of local telephone companies for access to their customers. As a result, local telephone companies recover a portion of their costs from long distance companies accessing their networks. Both the manner in which these access charges have been assessed and the proportion of the costs they have recovered have varied considerably over time.

In the early 1980s, AT&T provided about three-quarters of the nation's local telephone service and almost all interstate long distance service. Because revenue sharing was largely an internal process for AT&T, it was able to charge prices above cost for long distance calls and share the revenues with local telephone companies. These transfers, while reducing the pressures on the local companies to raise monthly rates, contributed to inefficiently high long distance rates. The high rates were responsible for suppressing demand for long distance calls and inducing large corporations to bypass the public switched network. Moreover, while such revenue sharing arrangements were sustainable in an industry where one firm monopolized both long distance and local service, they were not compatible with a competitive long distance industry.

In mid-1984 the FCC, in cooperation with a Federal-State Joint Board composed of both federal and state regulators, introduced sweeping changes to the way that local telephone companies charged for their services. The historic method of sharing revenues was replaced with a new system of access charges that provided a uniform method for local telephone companies to charge long distance carriers for the origination and termination of interstate traffic on their local networks. In addition, monthly subscriber line charges (SLCs) were introduced to recover a portion of the fixed costs of the local telephone companies loops directly from end users on a per-line basis.[1] Since local telephone companies were required to reduce their charges to long distance carriers -- dollar for dollar -- as SLCs were introduced, the pricing charges reduced the implicit subsidy from long distance use to local service. The rebalancing of prices between local service and interstate long distance calls during the 1980s had a fundamental impact on the telephone industry as the price of long distance service fell and the volume of long distance calling surged.

In mid-1997, as part of its implementation of the 1996 Telecommunications Act, the FCC introduced further interstate access charge reform. Prior to the 1997 reform, local carriers continued to recover part of their fixed costs in per-minute charges (from long distance carriers) and part from end users (in SLCs.) Presubscribed interexchange carrier charges (PICCs) were created in order to allow local carriers to recover the remaining portion of their fixed loop costs from long distance carriers on a per-line, instead of a per-minute, basis. Cost recovery on a per-line basis not only reduces the remaining inefficiency in the pricing of long distance access, but allows local companies to recover costs in a competitively neutral manner, consistent with the goals of the 1996 Act.

Average monthly SLCs and PICCs are shown in Table 1.1, and average per-minute rates charged to long distance carriers are shown in Table 1.2. Both tables report historical averages for all local exchange carriers (LECs) that file access tariffs subject to price-cap regulation and LECs in the National Exchange Carrier Association (NECA) pool. These LECs control over 98% of the industry's access lines. Current per-line charges and per-minute charges are reported for each of the carriers in Tables 1.3 and 1.4, respectively.

The data in Table 1.2 clearly illustrate the effectiveness of access reform in reducing the prices long distance carriers pay per-minute for access to the local telephone companies' networks. Per-minute access prices have continually decreased over time, a trend that continues with implementation of the 1997 reforms.

1 Under the Commission's nomenclature, SLCs are called access charges even though they are collected from customers (end users) rather than long distance carriers.

TABLE 1.1

INTERSTATE PER-LINE ACCESS CHARGES

(National Average per Month per Line) *

Rates in Effect		Charged to End Users ** (Subscriber Line Charges)			Charged to Long Distance Carriers *** (Presubscribed Interexchange Carrier Charges)			
From	To	Residential and Single-Line Business	Non-Primary Residential	Multiline Business and Centrex	Residential and Single-Line Business	Non-Primary Residential	Multiline Business	Centrex
05/26/84	05/31/85	$0.00		$4.99				
06/01/85	09/30/85	1.00		4.99				
10/01/85	05/31/86	1.00		4.97				
06/01/86	12/31/86	2.00		4.97				
01/01/87	06/30/87	2.00		5.12				
07/01/87	12/31/87	2.60		5.12				
01/01/88	11/30/88	2.60		5.01				
12/01/88	03/31/89	3.20		5.01				
04/01/89	12/31/89	3.50		4.94				
01/01/90	06/30/90	3.48		4.84				
07/01/90	12/31/90	3.48		4.83				
01/01/91	06/30/91	3.48		4.77				
07/01/91	11/27/91	3.49		4.74				
11/28/91	06/30/92	3.49		4.76				
07/01/92	06/30/93	3.49		4.68				
07/01/93	06/30/94	3.50		5.37				
07/01/94	06/30/95	3.50		5.45				
07/01/95	06/30/96	3.50		5.50				
07/01/96	06/30/97	3.50		5.53				
07/01/97	12/31/97	3.50		5.68				
01/01/98	06/30/98	3.50	$4.98	6.92	$0.49	$1.50	$2.52	$0.35
07/01/98	12/31/98	3.50	4.99	7.11	0.49	1.38	2.38	0.38
01/01/99	06/30/99	3.50	5.88	7.05	0.49	1.38	2.22	0.32
07/01/99	12/31/99	3.50	5.84	6.94	0.95	1.77	2.78	0.42
01/01/00	06/30/00	3.50	5.81	6.94	0.92	1.70	2.44	0.35

Source: Industry Analysis Division, *Monitoring Report* and access tariff filings.

* This table shows average rates (weighted by access lines) for all local exchange carriers (LECs) that file access tariffs subject to price-cap regulation and all LECs in the National Exchange Carrier Association (NECA) pool.

** Prior to 1/01/98 carriers did not charge separate subscriber line charge (SLC) rates for primary and non-primary residential lines. Therefore, the residential and single-line business average SLCs reported prior to 1/01/98 include all residential SLC charges. The average residential and single-line business SLC rate as of 1/01/98 excludes non-primary residential SLC charges. Non-primary SLC charges are now reported separately, except for the LECs in the NECA pool, which continue to charge a single residential SLC. Under price-cap regulation, as of July 1, 1999, the caps on SLCs for primary residential and single-line business, non-primary residential, and multiline business and Centrex lines equal $3.50, $6.07, and $9.20, respectively. For NECA pool companies, the residential SLC cap is $3.50, while the multiline business and Centrex SLC cap equals $6.00.

*** On 1/01/98 price-cap carriers began to charge presubscribed interexchange carrier charges (PICCs). The reported PICCs are averages per line including both price-cap and NECA pool lines. While carriers do not charge different rates for Centrex and multiline business SLCs, they do charge different PICC rates for these lines. Therefore, the average multiline business and Centrex PICC rates are reported separately. However, multiline business line counts, used to compute average PICC rates, include Centrex lines for LECs in the NECA pool, which do not charge PICCs or distinguish in access filings between the two line types. Under price-cap regulation, as of July 1, 1999, the caps on PICCs for primary residential and single-line business, non-primary residential, and multiline business lines equal $1.04, $2.53, and $4.31, respectively. Centrex PICC caps are determined by level of service.

TABLE 1.2

INTERSTATE PER-MINUTE ACCESS CHARGES

(National Average in Cents per Minute) *

Rates in Effect		Interstate Charges for Switched Access Service				
From	To	Carrier Common Line per Originating Access Minute*	Carrier Common Line per Terminating Access Minute*	Traffic Sensitive per Switched Minute	Non-Traffic Sensitive per Switched Minute**	Total Charge per Conversation Minute ***
05/26/84	01/14/85	5.24 ¢	5.24 ¢	3.10 ¢		17.26 ¢
01/15/85	05/31/85	5.43	5.43	3.10		17.66
06/01/85	09/30/85	4.71	4.71	3.10		16.17
10/01/85	05/31/86	4.33	4.33	3.10		15.38
06/01/86	12/31/86	3.04	4.33	3.10		14.00
01/01/87	06/30/87	1.55	4.33	3.10		12.41
07/01/87	12/31/87	0.69	4.33	3.10		11.49
01/01/88	11/30/88	0.00	4.14	3.10		10.56
12/01/88	02/14/89	0.00	3.39	3.00		9.60
02/15/89	03/31/89	0.00	3.25	3.00		9.46
04/01/89	12/31/89	1.00	1.83	3.00		9.11
01/01/90	06/30/90	1.00	1.53	2.50		7.78
07/01/90	12/31/90	1.00	1.23	2.50		7.48
01/01/91	06/30/91	1.00	1.14	2.40		7.18
07/01/91	06/30/92	0.88	1.06	2.40		6.97
07/01/92	06/30/93	0.79	0.95	2.40		6.76
07/01/93	06/30/94	0.88	1.16	2.20		6.66
07/01/94	06/30/95	0.84	1.08	2.10	0.28 ¢	6.89
07/01/95	06/30/96	0.74	0.89	1.96	0.21	6.16
07/01/96	06/30/97	0.72	0.89	1.95	0.17	6.04
07/01/97	12/31/97	0.64	0.84	1.63	0.14	5.18
01/01/98	06/30/98	0.68	0.23	1.29	0.21	4.04
07/01/98	12/31/98	0.91	0.20	0.99	0.30	3.82
01/01/99	06/30/99	0.82	0.16	0.98	0.32	3.71
07/01/99	12/31/99	0.37	0.10	0.86	0.28	2.82
01/01/00	06/30/00	0.32	0.10	0.86	0.31	2.85

Source: Industry Analysis Division, *Monitoring Report* and access tariff filings.

* This table shows average rates (weighted by minutes of use) for all local exchange carriers (LECs) that file access tariffs subject to price-cap regulation and all LECs in the National Exchange Carrier Association (NECA) pool. These average rates are calculated differently from those published prior to the July 1998, *Trends in Telephone Service.* In the January 1998 version, the average rates included the average revenue per minute from primary interexchange carrier charges (PICCs). This table no longer includes the PICC charge. Instead, the PICC charge per line is reported in Table 1.1.

** Non-traffic sensitive charges include charges assessed on a per-month per-unit basis, but exclude primary interexchange carrier charges (PICCs). Prior to 07/01/94 these charges were included in the average traffic-sensitive rates.

*** The total charge per conversation minute consists of charges on the originating end of the call, which are adjusted for dialing and call setup time, plus charges on the terminating end. Originating charges per conversation minute equal the carrier common line charge per originating access minute plus the traffic-sensitive charge per switched minute, both multiplied by 1.07 to account for dialing and call setup time, plus the non-traffic-sensitive charge per switched minute. Terminating charges per conversation minute equal carrier common line charges per terminating access minute plus both traffic-sensitive and non-traffic-sensitive charges per switched minute.

TABLE 1.3

INTERSTATE PER-LINE ACCESS CHARGES BY CARRIER

(In Dollars per Month per Line)*

Company	Rates Effective From 01/01/00 To 06/30/00							1998 Average Monthly Access Lines**** (Thousands)			
	Subscriber Line Charges**			Presubscribed Interexchange Carrier Charges***							
	Residential and Single-Line Business	Non-Primary Residential	Multiline Business and Centrex	Residential and Single-Line Business	Non-Primary Residential	Multiline Business	Centrex	Residential and Single-Line Business	Non-Primary Residential	Multiline Business	Centrex
Bell Atlantic	3.50	5.98	7.07	1.04	2.53	3.48	0.46	22,742	4,100	7,888	4,175
BellSouth	3.50	6.07	7.85	1.04	2.53	4.31	0.47	14,567	2,179	5,248	1,396
SBC	3.50	5.49	5.88	0.96	0.48	0.58	0.11	30,852	6,387	13,107	5,493
U S WEST	3.50	6.07	7.85	1.04	2.53	3.42	0.38	10,232	1,539	4,014	888
RBOCs	3.50	5.78	6.79	1.01	1.61	2.36	0.30	78,393	14,205	30,257	11,952
Aliant (AllTel)	3.50	6.07	6.75	0.92	0.16	0.16	0.05	182	16	47	30
Cincinnati Bell	3.50	6.07	6.26	1.04	1.12	1.12	0.13	645	79	213	72
Citizens	3.50	5.98	9.09	1.04	2.37	4.21	1.02	727	42	123	56
Frontier	3.50	5.56	5.87	1.04	1.08	1.46	0.25	648	70	171	81
GTE	3.50	6.07	8.59	1.04	2.53	4.31	0.81	12,645	1,457	3,293	1,237
Sprint Local	3.50	5.82	7.37	0.99	2.03	3.72	0.52	5,018	618	1,238	451
Independent Price Caps	3.50	5.99	8.10	1.03	2.28	3.90	0.69	19,865	2,282	5,086	1,927
All Price Caps	3.50	5.81	6.98	1.01	1.70	2.58	0.35	98,258	16,487	35,342	13,879
NECA*****	3.50	N/A	6.00	0.00	N/A	0.00	N/A	9,287	N/A	2,104	N/A
All Price Caps And NECA	$3.50	$5.81	$6.94	$0.92	$1.70	$2.44	$0.35	107,545	16,487	37,446	13,879

Source: Access tariff filings.

* Rates are average rates (weighted by access lines) for all local exchange carriers (LECs) that file access tariffs subject to price-cap regulation and all LECs in the National Exchange Carrier Association (NECA) pool. Rates are composites of all regions and subsidiaries of each local exchange carrier. No information is available for those carriers that are not in the NECA pool, but are subject to rate-of-return regulation.

** On 01/01/98 carriers began charging separate subscriber line charge (SLC) rates for primary and non-primary residential lines. Therefore, the average residential and single-line business SLC rate now excludes non-primary residential SLC charges. Non-primary SLC charges are now reported separately, except for LECs in the NECA pool, which continue to charge a single residential SLC.

*** On 01/01/98 price-cap carriers began to charge presubscribed interexchange carrier charges (PICCs). While carriers do not charge different rates for Centrex and multiline business SLCs, they do charge different PICC rates for these lines. Therefore, the average multiline business and Centrex PICC rates are reported separately. However, multiline business counts, used to compute average PICC rates, include Centrex lines for LECs in the NECA pool, which do not charge PICCs or distinguish in access filings between the two line types.

**** Access line counts measure lines that companies report as qualified to receive subscriber line charges. ISDN-BRI lines, which are charged non-primary residential SLC and PICC rates, are included in the non-primary residential line counts. ISDN-PRI lines, which are charged rates equal to five times the multiline business SLC and PICC rates, are multiplied by five and added to multiline business counts.

***** NECA rates effective from 07/01/99.

TABLE 1.4

INTERSTATE PER-MINUTE ACCESS CHARGES BY CARRIER

(In Cents per Minute) *

Company	Rates Effective From 01/01/00 To 6/30/00				Total Charge per Conversation Minute***	1998 Minutes of Use (Millions)		
	Carrier Common Line per Originating Access Minute	Carrier Common Line per Terminating Access Minute	Switched Traffic Sensitive per Access Minute	Switched Non-Traffic Sensitive per Access Minute**		CCL Originating	CCL Terminating	Local Switching
Bell Atlantic	0.00	0.00	0.75	0.22	1.98	42,099	88,757	131,834
BellSouth	0.20	0.00	0.71	0.31	2.31	29,093	48,484	78,056
SBC	0.00	0.00	0.78	0.37	2.35	59,929	83,560	146,562
U S WEST	0.00	0.00	0.74	0.24	2.02	20,659	38,380	59,227
RBOCs	0.04	0.00	0.75	0.30	2.19	151,779	259,180	415,679
Aliant (AllTel)	0.00	0.00	1.39	0.35	3.58	248	512	764
Cincinnati Bell	0.00	0.00	0.73	0.17	1.85	1,077	2,031	3,110
Citizens	2.41	0.68	1.64	0.89	8.45	1,267	1,357	2,626
Frontier	1.01	0.00	1.10	0.48	4.32	757	1,723	2,483
GTE	1.75	0.35	0.87	0.24	4.50	19,333	32,376	51,982
Sprint Local	0.73	0.07	1.01	0.22	3.38	8,444	13,871	22,420
Independent Price Caps	1.41	0.26	0.94	0.26	4.23	31,126	51,869	83,385
All Price Caps	0.27	0.04	0.78	0.29	2.54	182,905	311,049	499,064
NECA****	1.00	1.33	3.66	0.17	10.31	12,885	14,715	14,782
All Price Caps And NECA	0.32	0.10	0.86	0.31	2.85	195,790	325,764	513,846

Source: Access tariff filings.

* Rates are average rates (weighted by minutes of use) for all local exchange carriers (LECs) that file access tariffs subject to price-cap regulation and all LECs in the National Exchange Carrier Association (NECA) pool. Rates are composites of all regions and subsidiaries of each local exchange carrier. No information is available for carriers that are not in the NECA pool, but are subject to rate-of-return regulation. These average rates are calculated differently from those published prior to the July 1998 *Trends in Telephone Service.* In the January 1998 version, average rates included the average revenue per minute from primary interexchange carrier charges (PICCs). This table no longer includes the PICC charge, instead the PICC charge per line is reported in Table 1.3.

** Non-traffic sensitive charges include charges assessed on a per-month per-unit basis, but exclude primary interexchange carrier charges (PICCs).

*** The total charge per conversation minute consists of charges on the originating end of the call, which are adjusted for dialing and call setup time, plus charges on the terminating end. Originating charges per conversation minute equal the carrier common line charge per originating access minute plus the traffic-sensitive charge per switched minute, both multiplied by 1.07 to account for dialing and call setup time, plus the non-traffic-sensitive charge per switched minute. Terminating charges per conversation minute equal carrier common line charges per terminating access minute plus both traffic-sensitive and non-traffic-sensitive charges per switched minute.

**** NECA rates effective from 07/01/99.

2 CELLULAR TELEPHONE SERVICE:

The Federal Communications Commission licenses cellular telephone companies but does not impose reporting requirements on the cellular telephone industry. The Cellular Telecommunications Industry Association (CTIA) periodically publishes summary information on the industry, a selection of which is shown in Tables 2.1 and 2.2. CTIA can be found on the internet at <http://www.wow-com.com>.

The cellular industry has grown dramatically. Table 2.1 shows that there were 92,000 subscribers in 1984, as compared with over 75 million subscribers as of June 1999. As seen in Table 2.2, the industry's annual revenues rose from less than $1 billion in 1984 to over $33 billion in 1998. The table also shows that the industry had nearly 142,000 employees as of June 1999, as compared to about 1,000 employees in 1984; and there was a significant drop in the average monthly bill from $96.83 at the end of 1987 to $40.24 as of June 1999.

TABLE 2.1

CELLULAR TELEPHONE SUBSCRIBERS

		Number of Systems	Subscribers
1984	December	32	91,600
1985	June	65	203,600
	December	102	340,213
1986	June	129	500,000
	December	166	681,825
1987	June	206	883,778
	December	312	1,230,855
1988	June	420	1,608,697
	December	517	2,069,441
1989	June	559	2,691,793
	December	584	3,508,944
1990	June	592	4,368,686
	December	751	5,283,055
1991	June	1,029	6,390,053
	December	1,252	7,557,148
1992	June	1,483	8,892,535
	December	1,506	11,032,753
1993	June	1,523	13,067,318
	December	1,529	16,009,461
1994	June	1,550	19,283,506
	December	1,581	24,134,421
1995	June	1,581	28,154,415
	December	1,627	33,785,661
1996	June	1,629	38,195,466
	December	1,740	44,042,992
1997	June	2,005	48,705,553
	December	2,228	55,312,293
1998	June	2,300	60,831,431
	December	3,073	69,209,321
1999	June	3,447	76,284,753

Source: Cellular Telecommunications Industry Association.

TABLE 2.2

CELLULAR TELEPHONE SERVICE: INDUSTRY SURVEY RESULTS

		Survey Results		Estimates for Total Industry		
		Number of Systems Responding	Percent of Industry Surveyed	Employees	Six-Month Revenues (Thousands)	Average Monthly Bill
1984	December	32	100.0 %	1,404	$178,085	
1985	June	65	100.0	1,697	176,231	
	December	101	100.0	2,727	306,197	
1986	June	122	96.0	3,556	360,585	
	December	160	95.3	4,334	462,467	
1987	June	192	88.0	5,656	479,514	
	December	297	97.2	7,147	672,005	$96.83
1988	June	409	99.9	9,154	886,075	95.00
	December	496	99.1	11,400	1,073,473	98.02
1989	June	513	99.1	13,719	1,406,463	85.52
	December	546	98.8	15,927	1,934,132	89.30
1990	June	554	98.8	18,973	2,126,362	83.94
	December	663	98.2	21,382	2,422,458	80.90
1991	June	905	96.4	25,545	2,653,505	74.56
	December	1,005	96.5	26,327	3,055,017	72.74
1992	June	1,129	96.3	30,595	3,633,285	68.51
	December	1,189	93.4	34,348	4,189,441	68.68
1993	June	1,110	92.2	36,501	4,819,259	67.31
	December	1,287	92.3	39,775	6,072,906	61.48
1994	June	1,242	92.7	45,606	6,519,030	58.65
	December	1,371	93.2	53,902	7,710,890	56.21
1995	June	1,330	93.9	60,624	8,740,352	52.42
	December	1,392	93.0	68,165	10,331,614	51.00
1996	June	1,346	92.2	73,365	11,194,247	48.84
	December	1,422	92.4	84,161	12,440,724	47.70
1997	June	1,785	94.9	97,039	13,134,551	43.86
	December	2,017	94.9	109,387	14,351,082	42.78
1998	June	2,026	94.7	113,111	15,286,660	39.88
	December	2,869	93.3	134,754	17,846,515	39.43
1999	June	3,175	95.6	141,929	19,368,304	40.24

Source: Cellular Telecommunications Industry Association.

3 COMPLAINTS:

Although American consumers make approximately 100 billion toll calls every year, the FCC receives about one telephone-related complaint for every two million toll calls that are made. In an effort to help consumers make informed decisions when choosing telephone companies, the FCC recently released *Common Carrier Scorecard: Reporting Period January 1, 1999 to June 30, 1999.* The Scorecard lists the companies served the most complaints and the number of complaints that are served on each of those companies. Because not all complaints are justified, and because a single complaint can be served on multiple companies, service of a complaint does not necessarily indicate wrongdoing by the company being served the complaint. Nevertheless, consumers should be cautious when dealing with companies with a large number of complaints relative to their size. During the first half of 1999, the FCC's Consumer Protection Branch processed nearly 24,000 written complaints. Table 3.1 summarizes the types of complaints filed over time.

Interexchange companies (IXCs) that were served 20 or more complaints in the first half of 1999 are shown in Table 3.2. For each long distance carrier listed, a complaint index is calculated by taking the number of complaints served on that carrier, and dividing it by a measure of that company’s long distance revenue. Table 3.3 shows complaint indices for local exchange carriers (LECs) served 20 or more complaints during the first half of 1999. For each LEC listed, a complaint index is calculated by taking the number of complaints served on that carrier, and dividing it by that company’s operating revenue.

Many telecommunications firms provide services to customers and then bill for those services through a company that acts as a billing and collection agent (often shortened to billing agent). Billing agents themselves generally do not provide telecommunications services. The billing and collection business is competitive and is not directly regulated by the Commission. Consumers do file complaints against billing agents, however, and those complaints are served on those billing agents. Table 3.4 lists the number of complaints served on billing agents with more than 20 complaints during the first half of 1999. Because billing agents do not file any revenue figures with the Commission, a complaint index for them cannot be calculated.

As can be seen in Table 3.1, slamming is the most frequent type of complaint that the Commission receives. Consumers are "slammed" when their local or long distance telephone company is changed without their consent. Table 3.5 includes data for the companies served 40 or more slamming complaints during the first half of 1999. A slamming complaint index was calculated for each carrier listed in Table 3.5, by taking the number of slamming complaints served on that company, and dividing it by a measure of that company’s revenue.

Another frequent type of complaint that the Commission receives is cramming. Cramming is the practice of placing non-toll-related charges onto a customer’s phone bill for services that have not been authorized by the consumer. Entities that engage in cramming appear to rely heavily on consumer confusion over telephone bills to mislead consumers into paying for services that were not authorized or received. Table 3.6 lists the companies served 20 or more cramming complaints during the first half of 1999. Because the Commission does not have revenue data for all the companies in Table 3.6, no complaint indices are calculated.

TABLE 3.1

WRITTEN COMPLAINTS PROCESSED

Complaint Types	1st Half 1998	2nd Half 1998	1st Half 1999
Slamming	9,597	10,557	12,478
Rates & Services	2,461	2,778	4,473
Cramming	2,302	2,256	1,214
End User Common Line[1]	0	1,854	1,072
Carrier Marketing	1,102	1,001	1,007
International (rates and other)	753	667	766
Access Charges	358	2,470	614
Operator Services	659	480	534
Telephone Consumer Protection Act	475	1,467	402
Referrals[2]	646	2,120	380
Information Services (pay per call)	810	953	325
Miscellaneous	1,266	1,465	720
Total Written Complaints Processed	20,429	28,068	23,985

Source: FCC, *Common Carrier Scorecard: Reporting Period January 1, 1999 to June 30, 1999.*

1/ These complaints involve a one-time dispute between payphone providers and local exchange carriers over end-user common line charges.

2/ The FCC did not have jurisdiction over these complaints. These complaints were forwarded to the entity with jurisdiction.

TABLE 3.2

COMPLAINT INDICES FOR IXCs SERVED 20 OR MORE COMPLAINTS

(January 1, 1999 Through June 30, 1999)

Carrier	Complaints Served	Revenue Figure Used (millions)	Complaint Index	Revenue Source Code*
Business Discount Plan, Inc.	479	$2.0	239.50	3
America's Tele-Network	337	2.0	168.50	3
ACI Communications, Inc.	329	2.0	164.50	3
Least Cost Routing d/b/a Long Distance Charges	317	2.0	158.50	3
Accutel Communications	282	2.0	141.00	3
American Nortel Communications	232	2.0	116.00	3
Brittan Communications, Inc. (Filed for bankruptcy)	232	2.0	116.00	3
Corporate Services	148	2.0	74.00	3
Local Long Distance	281	5.0	56.20	2
USA Telecorp	111	2.0	55.50	3
Basic Long Distance	97	2.0	48.50	3
Telec, Inc.	96	2.0	48.00	3
The Furst Group	92	2.0	46.00	3
Network Access, Inc. (FL)	89	2.0	44.50	3
LDC Telecommunications	88	2.0	44.00	3
Long Distance Direct, Inc.	85	2.0	42.50	3
Combined Billing	76	2.0	38.00	3
All American Telephone	74	2.0	37.00	3
Advantage Telecommunications	65	2.0	32.50	3
Network Access, Inc. (NV)	64	2.0	32.00	3
Amer-I-Net Services	63	2.0	31.50	3
Switched Services Communications	63	2.0	31.50	3
Telecommunications Service Center, Inc.	59	2.0	29.50	3
Business Options, Inc.	57	2.0	28.50	3
ATN Communications, Inc.	56	2.0	28.00	3
OLS, Inc.	56	2.0	28.00	3
Crown Communications	54	2.0	27.00	3
Least Cost Routing, Inc. (FL)	54	2.0	27.00	3
The Phone Company	54	2.0	27.00	3
Discount Network Services	53	2.0	26.50	3
RCP Communications Group	53	2.0	26.50	3
Axces Telecommunications	116	5.0	23.20	2
American Business Alliance	46	2.0	23.00	3
Long Distance Saving	114	5.0	22.80	2
Preferred Billing	107	5.0	21.40	2
VIP Telephone Network	40	2.0	20.00	3
Pantel Communication	39	2.0	19.50	3
Coral Communications	34	2.0	17.00	3
Telco Partners	32	2.0	16.00	3
Atlas Communications	31	2.0	15.50	3
CGI Telecom	30	2.0	15.00	3
Starlink Communications	29	2.0	14.50	3
Group Long Distance, Inc.	70	5.0	14.00	2
Olympic Telecommunications	28	2.0	14.00	3
ATN/Advanced Telecommunications	27	2.0	13.50	3
Digital Network Services	27	2.0	13.50	3
Robo Tel, Inc.	27	2.0	13.50	3
Advantage Plus	26	2.0	13.00	3
US Telephone	26	2.0	13.00	3
Conquest Operator Services	25	2.0	12.50	3
Network Utilization	25	2.0	12.50	3
World Communications	24	2.0	12.00	3
Vista Group International	433	37.5	11.55	2
National Accounts Long Distance	23	2.0	11.50	3
Service One Communications	23	2.0	11.50	3
Colorado River Communications	22	2.0	11.00	3
HSJ Enterprises	22	2.0	11.00	3
Intercontinental Communications Long Distance	22	2.0	11.00	3
Long Distance Services	22	2.0	11.00	3
Network 1000	22	2.0	11.00	3
Network Communications	22	2.0	11.00	3
Operator Services Co.	22	2.0	11.00	3
TimeFax, Inc.	22	2.0	11.00	3
Pilgrim Telephone, Inc.	54	5.0	10.80	2
Winstar Gateway Network	54	5.0	10.80	2
Vision Telemedia, Inc.	20	2.0	10.00	3

TABLE 3.2

COMPLAINT INDICES FOR IXCs SERVED 20 OR MORE COMPLAINTS - CONTINUED

(January 1, 1999 Through June 30, 1999)

Carrier	Complaints Served	Revenue Figure Used (millions)	Complaint Index	Revenue Source Code*
US Republic Communications	349	$37.5	9.31	2
International Telecommunications Corp.	135	17.5	7.71	2
Telcam	36	5.0	7.20	2
Network Operator Services	114	17.5	6.51	2
L.D. Services, Inc.	205	37.5	5.47	2
Uni-Tel Communications	27	5.0	5.40	2
Operator Communications, Inc.	88	17.5	5.03	2
USN Communications	88	17.5	5.03	2
Coast International	23	5.0	4.60	2
North American Telephone Network	78	17.5	4.46	2
Consumer Access	65	17.5	3.71	2
QAI, Inc.	139	37.5	3.71	2
Minimum Rate Pricing	415	112.0	3.71	4
RSL COM USA, Inc.	498	183.6	2.71	1
Quest Communications	43	17.5	2.46	2
Equal Net Corporation	41	17.5	2.34	2
OPTICOM	171	81.0	2.11	2
Flat Rate Long Distance	70	37.5	1.87	2
American Network Exchange, Inc.	59	37.5	1.57	2
I-Link Communication	27	17.5	1.54	2
Long Distance International, Inc.	52	37.5	1.39	2
Matrix Telecom	33	37.5	0.88	2
Frontier Communications Services	427	538.8	0.79	1
ILD Teleservices Inc.	64	81.0	0.79	2
NOS Communications, Inc.	109	138.4	0.79	1
Cleartel Communications	27	37.5	0.72	2
Excel Communications	629	1,218.7	0.52	1
Qwest Communications	831	1,664.2	0.50	1
Lifeline	40	81.0	0.49	2
US Long Distance, Inc.	130	279.1	0.47	1
ASC Telecom, Inc.	31	81.0	0.38	2
Tel-Save, Inc.	127	425.9	0.30	1
Coastal Telephone Company	23	81.0	0.28	2
WorldxChange Communications	85	307.6	0.28	1
UniDial, Inc.	46	180.4	0.25	1
GTE Communications Co.	154	606.7	0.25	1
MCI WorldCom, Inc.	4,795	24,127.7	0.20	1
Cable & Wireless Communications, PLC	181	953.1	0.19	1
Working Assets Long Distance	22	131.3	0.17	1
Vartec Telecom, Inc.	110	723.7	0.15	1
Sprint Communication	1,412	9,910.9	0.14	1
IXC Communications Services, Inc.	52	723.7	0.07	1
Intermedia Communications	21	380.1	0.06	1
AT&T Corp.	2,172	40,551.0	0.05	1

Source: FCC, *Common Carrier Scorecard: Reporting Period January 1, 1999 to June 30, 1999.*

* Revenue Source Codes:

1/ This index is derived from publicly available revenue information.

2/ This carrier submitted confidential revenue data in its Universal Service Fund (USF) Worksheet filed with the National Exchange Carrier Administration (NECA). To preserve the confidentiality of the information, we placed each carrier into one of four revenue ranges. The ranges are: under $10 million; $10 -$25 million; $25 - $50 million; $50 - $112 million. We then used the revenue range midpoint as the carrier's revenue for purposes of calculating the complaint index.

3/ Carriers are generally required to make contributions into the USF. Carriers that would contribute less than $10,000 into the fund, however, are considered *de minimis*, and do not need to contribute to the fund, or to file a USF Worksheet (which enables NECA to determine how much a carrier is required to contribute to the fund). When this information was filed, the amount of a carrier's contribution into the USF was a function of its prior year's intrastate and interstate end-user revenues (contributions are now based on only interstate revenues). Although intrastate and interstate revenues factor differently into how much a carrier contributes into the fund, carriers with more than $2 million of end-user revenue most likely will have to contribute into the fund. Because this carrier either certified that it was *de minimis*, or did not file a USF Worksheet, its complaint ratio is based on $2 million. Because it is most likely that this carrier's revenue is less than $2 million, the reported complaint ratio for this carrier is likely to be understated.

4/ This company reported more than $112 million of end-user revenue on its Universal Service Fund Worksheet. Carriers that generate more than $112 million of end-user revenue are required to file publicly available revenue figures. We used the $112 million threshold to calculate the complaint index because this carrier did not publicly file its revenue figures.

TABLE 3.3

COMPLAINT INDICES FOR LOCAL EXCHANGE CARRIERS SERVED 20 OR MORE COMPLAINTS

(January 1, 1999 Through June 30, 1999)

Local Exchange Carrier	Complaints	Operating Revenue[1] (millions)	Complaint Index
Citizens	153	$732	0.209
U S WEST	1,947	10,669	0.182
Bell Atlantic	4,244	25,564	0.166
GTE	1,996	15,248	0.131
Ameritech	1,537	12,314	0.125
BellSouth	1,810	15,772	0.115
Sprint/United	538	4,713	0.114
SBC	2,344	21,716	0.108
Cincinnati Bell	52	712	0.073
Century Telephone	60	1,577	0.038

1/ Operating revenue data for most companies is from the *Statistics of Communications Common Carriers* , 1998/1999 Edition, Table 2.9. Operating revenue for Citizens, GTE and Century Telephone is from USTA's *Phone Facts 1999* .

TABLE 3.4

BILLING AGENTS SERVED MORE THAN 20 COMPLAINTS

(January 1, 1999 Through June 30, 1999)

Billing Agent	Complaints
Billing Concepts Corporation	3,536
OAN Services, Inc.	1,945
Integretel, Inc.	1,027
Hold Billing Service	912
USP&C	346
Telephone Billing Service	119
Federal Transtel, Inc.	59
Long Distance Billing	48

Source: FCC, *Common Carrier Scorecard* : *Reporting Period: January 1, 1999 to June 30, 1999.*

TABLE 3.5

SLAMMING COMPLAINTS: INDICES FOR IXCs SERVCED 40 OR MORE

(January 1, 1999 Through June 30, 1999)

Carrier	Slamming Complaints	Revenue Figure Used (millions)	Slamming Complaint Index	Revenue Source Code*
Business Discount Plan	448	$2.0	224.00	3
ACI Communications, Inc.	314	2.0	157.00	3
Least Cost Routing d/b/a Long Distance Charges	294	2.0	147.00	3
America's Tele-Network (ATN)	262	2.0	131.00	3
Accutel Communications	233	2.0	116.50	3
Brittan Communications (BCI) (Filed for bankruptcy)	215	2.0	107.50	3
American Nortel Communications	213	2.0	106.50	3
Corporate Services Telecom	134	2.0	67.00	3
Local Long Distance	266	5.0	53.20	2
USA Telecorp	102	2.0	51.00	3
Telec, Inc.	94	2.0	47.00	3
Basic Long Distance	93	2.0	46.50	3
LDC Telecommunications	75	2.0	37.50	3
Combined Billing	72	2.0	36.00	3
The Furst Group	71	2.0	35.50	3
Long Distance Direct, Inc.	67	2.0	33.50	3
Long Distance Billing	62	2.0	31.00	3
Switched Services Communications	62	2.0	31.00	3
Advantage Telecommunications	59	2.0	29.50	3
All American Telephone	58	2.0	29.00	3
Amer-I-Net Services	57	2.0	28.50	3
Business Options, Inc.	55	2.0	27.50	3
Least Cost Routing, Inc. (FL)	52	2.0	26.00	3
The Phone Company	52	2.0	26.00	3
Discount Network Services	49	2.0	24.50	3
OLS, Inc.	44	2.0	22.00	3
Long Distance Saving	109	5.0	21.80	2
American Business Alliance	40	2.0	20.00	3
Axces Telecommunications	100	5.0	20.00	2
Preferred Billing	98	5.0	19.60	2
Atlas Communications	28	2.0	14.00	3
Telecommunications Service Center, Inc.	26	2.0	13.00	3
Robo Tel, Inc.	25	2.0	12.50	3
Advantage Plus	24	2.0	12.00	3
World Communications	24	2.0	12.00	3
Group Long Distance, Inc.	60	5.0	12.00	2
Network Utilization	23	2.0	11.50	3
ATN/Advanced Telecom Network	22	2.0	11.00	3
Long Distance Services	22	2.0	11.00	3
Vista Group International	400	37.5	10.67	2
National Accounts Long Distance	20	2.0	10.00	3
US Republic Communications	256	37.5	6.83	3
Telcam	33	5.0	6.60	2
International Telecommunications Corp.	108	17.5	6.17	2
Winstar Gateway Network	29	5.0	5.80	2
Uni-Tel Communications	26	5.0	5.20	2
L.D. Services, Inc.	180	37.5	4.80	2

TABLE 3.5

SLAMMING COMPLAINTS: INDICES FOR IXCs SERVED 40 OR MORE - CONTINUED

(January 1, 1999 Through June 30, 1999)

Carrier	Slamming Complaints	Revenue Figure Used (millions)	Slamming Complaint Index	Revenue Source Code*
USN Communications	65	$17.5	3.71	2
North American Telephone	58	17.5	3.31	2
Minimum Rate Pricing	344	112.0	3.07	4
RSL COM USA, Inc.	444	183.6	2.42	1
Quest Communications	34	17.5	1.94	2
Equal Net Corporation	31	17.5	1.77	2
Flat Rate Long Distance	65	37.5	1.73	2
Consumer Access	29	17.5	1.66	2
QAI, Inc.	56	37.5	1.49	2
I-Link Communication	22	17.5	1.26	2
Long Distance International, Inc.	38	37.5	1.01	2
Frontier Communications Services	346	538.8	0.64	1
Matrix Telecom	20	37.5	0.53	2
Qwest Communications	648	1,664.2	0.39	1
Lifeline	30	81.0	0.37	2
US Long Distance, Inc.	95	279.1	0.34	1
Excel Communications	336	1,218.7	0.28	1
Tel-Save, Inc.	107	425.9	0.25	1
GTE Communications	138	606.7	0.23	1
NOS Communications, Inc.	30	138.4	0.22	1
Cable & Wireless	162	953.1	0.17	1
UniDial	30	180.4	0.17	1
MCI WorldCom, Inc.	2,465	24,127.7	0.10	1
Sprint	878	9,910.9	0.09	1
Vartec Telecom, Inc.	50	723.7	0.07	1
IXC Communications Services, Inc.	42	723.7	0.06	1
AT&T Corp.	764	40,551.0	0.02	1

Source: FCC, *Common Carrier Scorecard: Reporting Period January 1, 1999 to June 30, 1999* .

* Revenue Source Codes:

1/ This index is derived from publicly available revenue information.

2/ This carrier submitted confidential revenue data in its Universal Service Fund (USF) Worksheet filed with the National Exchange Carrier Administration (NECA). To preserve the confidentiality of the information, we placed each carrier into one of four revenue ranges. The ranges are: under $10 million; $10 -$25 million; $25 - $50 million; $50 - $112 million. We then used the revenue range midpoint as the carrier's revenue for purposes of calculating the complaint index.

3/ Carriers are generally required to make contributions into the USF. Carriers that would contribute less than $10,000 into the fund, however, are considered *de minimis* , and do not need to contribute to the fund, or to file a USF Worksheet (which enables NECA to determine how much a carrier is required to contribute to the fund). When this information was filed, the amount of a carrier's contribution into the USF was a function of its prior year's intrastate and interstate end-user revenues (contributions are now based on only interstate revenues). Although intrastate and interstate revenues factor differently into how much a carrier contributes into the fund, carriers with more than $2 million of end-user revenue most likely will have to contribute into the fund. Because this carrier either certified that it was *de minimis* , or did not file a USF Worksheet, its complaint ratio is based on $2 million. Because it is most likely that this carrier's revenue is less than $2 million, the reported complaint ratio for this carrier is likely to be understated.

4/ This company reported more than $112 million of end-user revenue on its Universal Service Fund Worksheet. Carriers that generate more than $112 million of end-user revenue are required to file publicly available revenue figures. We used the $112 million threshold to calculate the complaint index because this carrier did not publicly file its revenue figures.

TABLE 3.6

COMPANIES SERVED 20 OR MORE CRAMMING COMPLAINTS

(January 1, 1999 Through June 30, 1999)

Company Name	Cramming Complaints
USP&C	249
US Republic Communications	72
RCP Communications Group	41
Accutel Communications	31
AT&T Corporation	30
Consumer Access	26
MCI WorldCom, Inc.	25
Telecommunications Service Center	25
VIP Telephone Network	23
CGI Telecom	22
Coral Communications	21
Pantel Communications	20

Source: FCC, *Common Carrier Scorecard: Reporting Period January 1, 1999 to June 30, 1999* .

4 CONSUMER EXPENDITURES:

The Bureau of Labor Statistics conducts surveys of consumer expenditures, in part, to develop weights for CPI indices. Table 4.1 shows expenditures for telephone service for all consumer units.

About 2% of all consumer expenditures are devoted to telephone service. This percentage has remained virtually unchanged over the past 15 years, despite major changes in the telephone industry and in telephone usage. Average annual expenditures on telephone service increased from $325 per household in 1980 to $830 in 1998.

Bill harvesting data collected by PNR and Associates, Inc provide information on the telecommunications expenditures of households. Expenditures can be classified by the type of carrier providing the service. Table 4.2 presents annual household expenditures by type of provider for 1995 through 1998. Further information on PNR and Associates and the bill harvesting data can be found in Section 16.

TABLE 4.1

HOUSEHOLD EXPENDITURES FOR TELEPHONE SERVICE

Year	Annual Expenditures for All Households		Telephone Expenditures as a Percent of All Expenditures
	All Expenditures	Telephone Expenditures	
1980	$16,723	$325	1.9 %
1981	17,558	360	2.1
1982	18,071	375	2.1
1983	19,692	415	2.1
1984	21,975	435	2.0
1985	23,490	455	1.9
1986	23,866	471	2.0
1987	24,414	499	2.0
1988	25,892	537	2.1
1989	27,810	567	2.0
1990	28,381	592	2.1
1991	29,614	618	2.1
1992	29,846	623	2.1
1993	30,692	658	2.1
1994	31,731	690	2.2
1995	32,264	708	2.2
1996	33,797	772	2.3
1997	34,819	809	2.3
1998	35,535	830	2.3

Source: Consumer Expenditure Survey, Bureau of Labor Statistics.

CHART 4.1

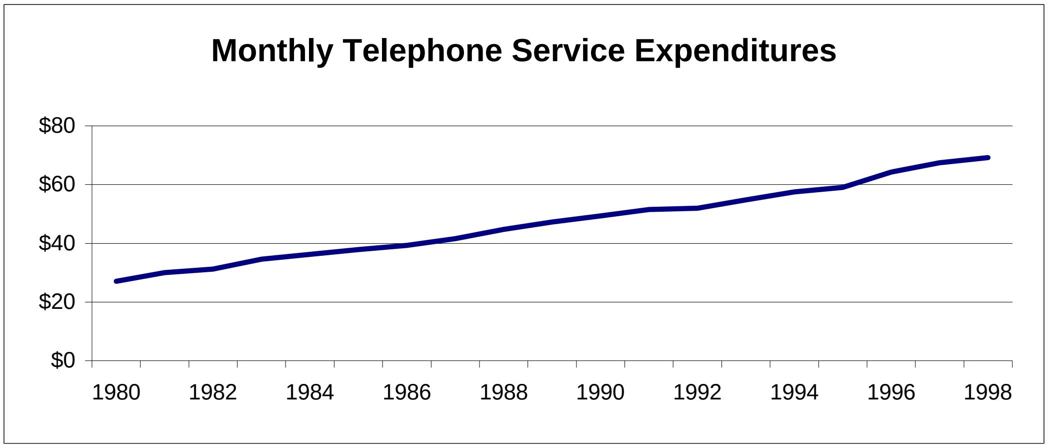


TABLE 4.2

HOUSEHOLD TELECOMMUNICATIONS EXPENDITURES BY TYPE OF PROVIDER

	Local Exchange Carriers		Long Distance Carriers		Wireless Carriers		Total Expenditures	
	Average	Median	Average	Median	Average	Median	Average	Median
1995	$358	$305	$250	$136	$62	$0	$670	$515
1996	359	309	250	132	83	0	692	531
1997	379	323	305	183	100	0	784	610
1998	398	336	270	150	119	0	787	616

Source: Calculated by IAD staff with data provided by PNR and Associates Inc., *TLC MarketShare Monitor.*

Annual expenditures are based on monthly household bills for those households with wireline telephone service.

The sample does not include households from Alaska and Hawaii.

5 EMPLOYMENT AND LABOR PRODUCTIVITY:

The Bureau of Labor Statistics (BLS) publishes monthly data regarding the total number of employed workers in the communications industry. Specifically, BLS compiles employment statistics for the entire telephone communications industry (Standard Industrial Classification (SIC) 481) and for a subset of this industry, telephone communications minus radiotelephone (SIC 4813). The difference between these two figures yields the number of employees in the radiotelephone industry (SIC 4812).

SIC 4813 includes establishments primarily engaged in furnishing telephone voice and data communications, except radiotelephone and telephone answering services. SIC 4812 includes establishments primarily engaged in providing two-way radiotelephone communication services, such as cellular telephone service. It also includes telephone paging and beeper services. Neither of these categories includes employees from establishments primarily engaged in furnishing telephone answering services, manufacturing equipment, or engineering and research services.

Table 5.1 and the associated graph show the annual average employment figures in the telephone communications industry separately for SIC 4812 and SIC 4813 from 1951 to 1999. Since 1990, employment in the telephone communications industry has grown modestly. Most of the growth in employment over this period is the result of substantial increases in the radiotelephone industry, which grew at an annual average growth rate of approximately 20%.

BLS also calculates an annual telecommunications industry labor productivity index. The BLS index of labor productivity relates output to the employee hours expended in producing that output. This index, presented in Table 5.2, rose an average 6.0% per year from 1951-1997, with 1997 being the most recent data available. This average labor productivity factor is higher than the average in other industries (typically somewhere around 3 to 4%). This higher than average annual growth rate may be the result of telephone companies utilizing more efficient, advanced technology and increases in human capital. Table 5.2 and the associated graph illustrate the rising trend in telecommunications labor productivity since 1951.

TABLE 5.1

ANNUAL AVERAGE NUMBER OF EMPLOYEES IN THE TELEPHONE COMMUNICATIONS INDUSTRY

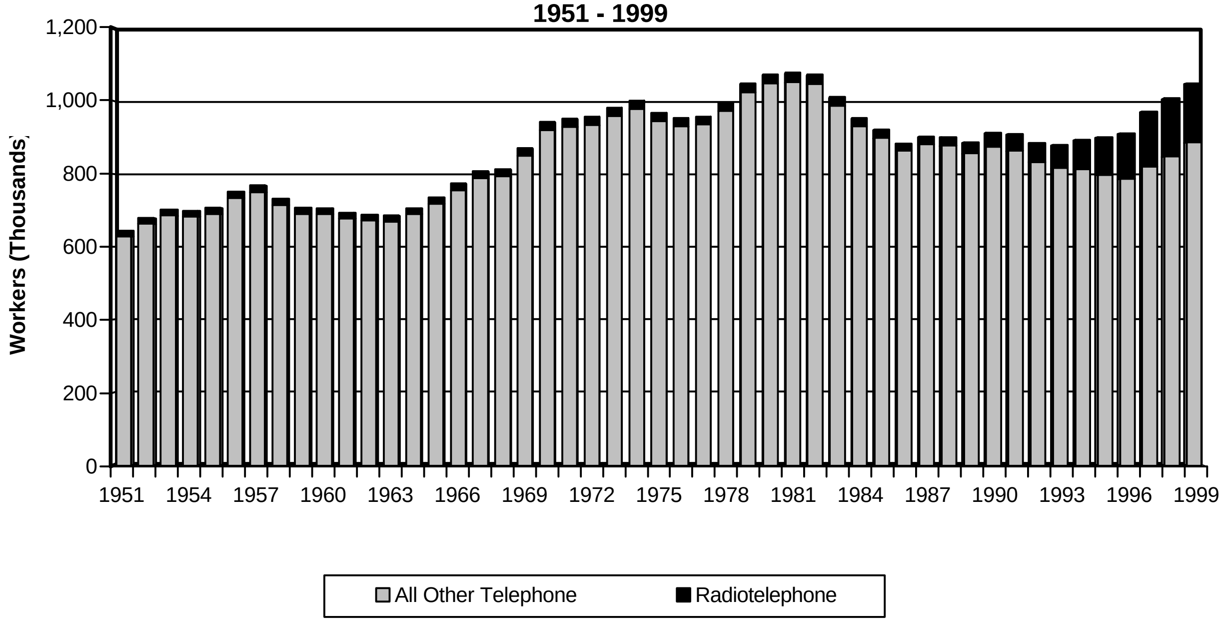
(In Thousands)

Year	Radiotelephone	All Other Telephone	Year	Radiotelephone	All Other Telephone	Year	Radiotelephone	All Other Telephone
1951	15.2	628.8	1968	19.2	793.2	1985	21.6	899.1
1952	16.0	662.4	1969	20.5	849.5	1986 *	20.7	862.7
1953	16.6	685.6	1970	22.2	919.9	1987	21.1	880.8
1954	16.5	682.3	1971	22.4	929.2	1988	23.2	877.9
1955	16.6	690.1	1972	22.5	933.6	1989 *	29.9	856.0
1956	17.7	733.5	1973	23.2	958.0	1990	38.2	874.8
1957	18.1	750.1	1974	23.6	977.2	1991	45.6	863.6
1958	17.2	714.9	1975	22.8	943.8	1992	53.1	832.1
1959	16.7	690.4	1976	22.5	930.7	1993	63.1	815.9
1960	16.6	689.4	1977	22.6	934.7	1994	81.0	812.4
1961	16.3	677.0	1978	23.4	971.4	1995	102.5	797.2
1962	16.2	671.3	1979	24.8	1023.4	1996	125.3	786.1
1963	16.2	669.3	1980	25.3	1046.9	1997	150.6	820.3
1964	16.6	689.5	1981	25.3	1052.0	1998	159.5	847.3
1965	17.3	717.9	1982	25.3	1046.5	1999 **	161.4	886.0
1966	18.3	755.1	1983 *	23.8	986.5			
1967	19.0	787.5	1984	22.4	931.0			

* Due to Bell operating company employee strikes in 1983, 1986, and 1989, which lasted one month each, the reported annual average number of workers for those particular years is an average of the eleven months in which workers did not strike.

** The 1999 figures are preliminary figures.

CHART 5.1
ANNUAL AVERAGE NUMBER OF EMPLOYEES IN THE TELEPHONE COMMUNICATIONS INDUSTRY
1951 - 1999



Source: Bureau of Labor Statistics.

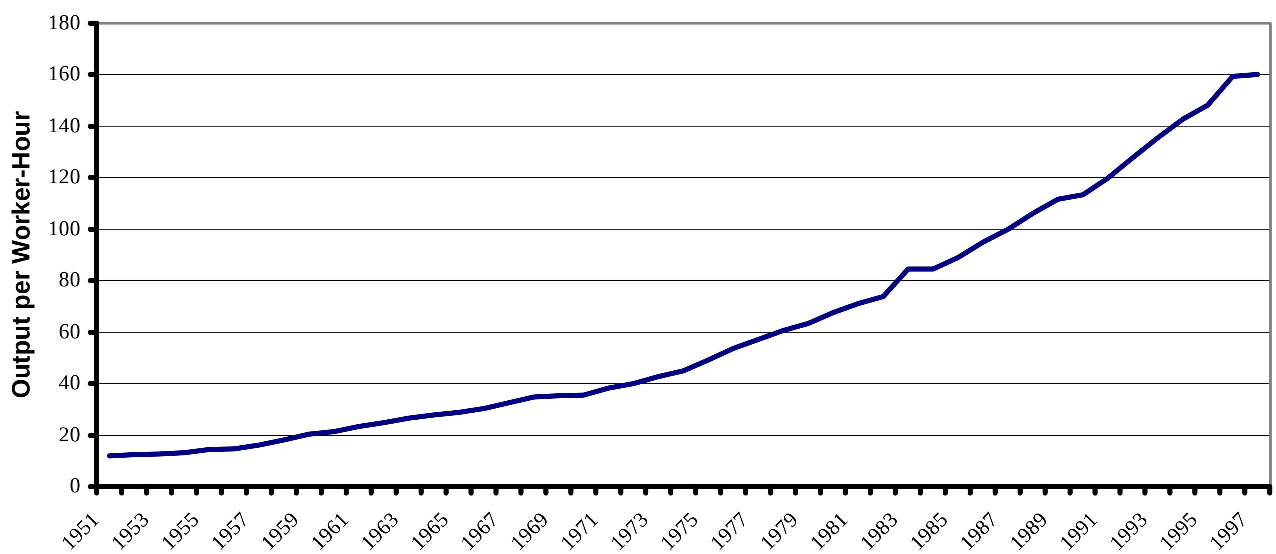
TABLE 5.2

LABOR PRODUCTIVITY INDEX FOR THE TELEPHONE COMMUNICATIONS INDUSTRY MEASURED IN OUTPUT PER HOUR (OPH)

(Base Year 1987=100)

Year	OPH Index	Year	OPH Index	Year	OPH Index
1951	12.0	1967	32.6	1983	84.6
1952	12.4	1968	34.7	1984	84.5
1953	12.6	1969	35.3	1985	88.9
1954	13.2	1970	35.6	1986	95.0
1955	14.3	1971	38.3	1987	100.0
1956	14.6	1972	40.1	1988	106.2
1957	16.1	1973	42.7	1989	111.6
1958	18.2	1974	45.0	1990	113.3
1959	20.3	1975	49.3	1991	119.8
1960	21.4	1976	53.6	1992	127.7
1961	23.3	1977	57.3	1993	135.5
1962	24.8	1978	60.6	1994	142.2
1963	26.6	1979	63.5	1995	148.1
1964	27.8	1980	67.6	1996	159.4
1965	28.9	1981	71.1	1997	160.2
1966	30.3	1982	73.8		

CHART 5.2
TELEPHONE COMMUNICATIONS INDUSTRY
(SIC 481) LABOR PRODUCTIVITY INDEX



Source: Bureau of Labor Statistics.

6 EQUAL ACCESS:

Equal access refers to a class of service whereby all long distance service providers receive equivalent connections to the local exchange carrier's network. Where a local exchange carrier serves customers using equal access switches, those customers can utilize their preferred long distance provider by dialing "1" plus the ten-digit telephone number they want to reach.

For equal access to take place, the local exchange carrier had to convert their lines to equal access. The conversion of lines by local exchange carriers to equal access started in 1984. By the end of 1996, over 99% of the nation's lines had been converted to equal access. A table tracing this process though time can be found in the equal access section in the *Trends* report released July 1998.

Despite the fact that more than 99% of the nation's customers are now provided with equal access, there still are many central offices where equal access is not yet available. Because the non-equal access offices tend to be smaller offices, the percentage of converted offices is significantly smaller than the percentage of converted lines. Table 6.1 shows the number of central office wire centers in each state that had been converted to equal access as of February 1, 2000. The table is derived from NECA's Tariff 4 database, which is updated by local exchange carriers. In some cases, there is a lag between an office converting to equal access and that change being reflected in the database. Thus, in some cases, the data continue to show some offices not yet converted to equal access even in states where equal access is reported to be available to all customers.

TABLE 6.1
CENTRAL OFFICES CONVERTED TO EQUAL ACCESS
(As of February 1, 2000)

	Bell Company Central Offices			Other Central Offices			Bell & Other Central Offices	
	Equal Access	Non-Equal Access	% Equal Access	Equal Access	Non-Equal Access	% Equal Access	Total Offices	% Equal Access
Alabama	147	0	100.0 %	212	5	97.7 %	364	98.6 %
Alaska	0	0	N.A.	40	215	15.7	255	15.7
Arizona	140	0	100.0	100	10	90.9	250	96.0
Arkansas	135	0	100.0	271	2	99.3	408	99.5
California	616	0	100.0	381	11	97.2	1,008	98.9
Colorado	165	1	99.4	113	8	93.4	287	96.9
Connecticut	126	0	100.0	6	0	100.0	132	100.0
Delaware	33	0	100.0	1	1	50.0	35	97.1
District of Columbia	19	0	100.0	5	0	100.0	24	100.0
Florida	199	0	100.0	323	2	99.4	524	99.6
Georgia	180	0	100.0	236	10	95.9	426	97.7
Guam	0	0	N.A.	17	0	100.0	17	100.0
Hawaii	0	0	N.A.	92	0	100.0	92	100.0
Idaho	69	0	100.0	103	15	87.3	187	92.0
Illinois	277	10	96.5	727	15	98.0	1,029	97.6
Indiana	167	0	100.0	411	2	99.5	580	99.7
Iowa	135	0	100.0	675	5	99.3	815	99.4
Kansas	171	0	100.0	392	8	98.0	571	98.6
Kentucky	193	0	100.0	182	18	91.0	393	95.4
Louisiana	228	0	100.0	97	5	95.1	330	98.5
Maine	143	1	99.3	108	9	92.3	261	96.2
Maryland	212	0	100.0	8	0	100.0	220	100.0
Massachusetts	273	2	99.3	5	1	83.3	281	98.9
Michigan	336	1	99.7	363	15	96.0	715	97.8
Minnesota	159	0	100.0	567	4	99.3	730	99.5
Mississippi	206	0	100.0	52	11	82.5	269	95.9
Missouri	214	0	100.0	444	46	90.6	704	93.5
Montana	75	0	100.0	199	5	97.5	279	98.2
Nebraska	69	0	100.0	391	4	99.0	464	99.1
Nevada	45	0	100.0	56	21	72.7	122	82.8
New Hampshire	125	1	99.2	30	1	96.8	157	98.7
New Jersey	206	0	100.0	35	2	94.6	243	99.2
New Mexico	65	0	100.0	83	39	68.0	187	79.1
New York	524	1	99.8	310	15	95.4	850	98.1
North Carolina	140	0	100.0	356	12	96.7	508	97.6
North Dakota	36	0	100.0	236	20	92.2	292	93.2
Ohio	278	15	94.9	544	24	95.8	861	95.5
Oklahoma	209	0	100.0	282	33	89.5	524	93.7
Oregon	78	0	100.0	204	5	97.6	287	98.3
Pennsylvania	387	0	100.0	429	33	92.9	849	96.1
Puerto Rico	0	0	N.A.	86	0	100.0	86	100.0
Rhode Island	30	0	100.0	3	0	100.0	33	100.0
South Carolina	117	0	100.0	159	2	98.8	278	99.3
South Dakota	43	0	100.0	202	9	95.7	254	96.5
Tennessee	195	0	100.0	161	9	94.7	365	97.5
Texas	527	0	100.0	966	15	98.5	1,508	99.0
Utah	75	0	100.0	71	18	79.8	164	89.0
Vermont	90	2	97.8	42	0	100.0	134	98.5
Virgin Islands	0	0	N.A.	5	0	100.0	5	100.0
Virginia	218	0	100.0	250	7	97.3	475	98.5
Washington	112	0	100.0	253	8	96.9	373	97.9
West Virginia	145	0	100.0	80	9	89.9	234	96.2
Wisconsin	108	1	99.1	529	0	100.0	638	99.8
Wyoming	26	0	100.0	36	22	62.1	84	73.8
Total United States	8,466	35	99.6 %	11,929	731	94.2 %	21,161	96.4 %

Source: NECA FCC Tariff No. 4 database. Includes both ILEC and CLEC switches.

* Some companies do not report information on their remote switches in Tariff No. 4. As a result, central office counts may be lower than reported in other sources.

7 INTERNATIONAL TELEPHONE SERVICE:

International telecommunications has become an increasingly important segment of the telecommunications market. International telephone calling -- propelled by technological innovation, increased international trade and travel, and stable or declining international telephone rates -- has skyrocketed. The number of calls made from the United States to other countries increased from 200 million in 1980 to 4.5 billion in 1998. In 1998, Americans spent about $14 billion on international calls. On average, carriers billed $0.59 per minute for international calls in 1998, a decline of more than 50% since 1980. International private line revenues have also increased since 1980, but telex and telegraph services declined substantially over the same period. These trends are shown in Table 7.1.

U.S. and foreign carriers compensate each other when one carries traffic that the other bills. The number of calls billed in the United States increased at a faster pace than calls billed in foreign countries, contributing to rapid increases in net settlement payments to foreign carriers. These net payments from the United States to other countries were $4.8 billion in 1998. Trends in settlement payments are shown in Table 7.2.

International traffic data are available on a country-by-country basis. Table 7.3 summarizes traffic by region of the world. Five markets -- Canada, Mexico, the United Kingdom, Germany, and Japan -- currently account for about 42% of the international calls billed in the United States.

Since 1985, when MCI first entered the market in competition with AT&T, numerous carriers have begun to provide international service. Fifty-three carriers provided international telecommunications service in 1998 by using their own facilities or lines leased from other carriers. These carriers billed $15 billion for international services, of which $14 billion was for telephone service. Table 7.4 shows the U.S.-billed revenues for each of the 53 carriers. Together, AT&T, MCI WorldCom, and Sprint, account for 93% of the international service billed in the United States.

In addition to the 53 carriers that owned or leased facilities, about 350 carriers reported the resale of international message telephone service. These carriers reported $4.8 billion of resale revenue in 1998. The revenues of the fifty largest resellers are shown in Table 7.5.

The data compiled in Tables 7.1 - 7.5 are filed pursuant to Section 43.61 of the Commission's rules. Preliminary data are filed July 31st of each year and final data are filed October 31st. The 1999 international traffic data will be published in the fall. Additional information can be found in a number of international reports on the **FCC-State Link** web page.

TABLE 7.1

INTERNATIONAL SERVICE FROM THE UNITED STATES TO FOREIGN POINTS
(Minute, Message, and Revenue Amounts Shown in Millions)

	Telephone Service					Other Services			
			Billed Revenue			Billed Revenue			
	Minutes	Messages	Total	Per minute	Per call	Telex	Telegraph	Private Line	Misc.
1980	1,569	199	$2,097	$1.34	$10.53	$325	$63	$115	
1981	1,857	233	2,239	1.21	9.61	350	62	126	
1982	2,187	274	2,382	1.09	8.70	363	56	138	
1983	2,650	322	2,876	1.09	8.92	379	54	154	
1984	3,037	367	3,197	1.05	8.71	394	46	158	
1985	3,350	411	3,435	1.03	8.37	415	45	172	
1986	3,917	482	3,891	0.99	8.07	390	42	175	
1987	4,480	570	4,559	1.02	8.00	360	35	191	
1988	5,190	687	5,507	1.06	8.02	310	30	194	
1989	6,109	835	6,517	1.07	7.80	243	27	208	
1990	7,215	984	7,626	1.06	7.75	196	24	201	
1991	8,986	1,371	9,096	1.01	6.63	200	15	303	$23
1992	10,156	1,643	10,179	1.00	6.20	155	16	313	24
1993	11,393	1,926	11,353	1.00	5.89	135	12	365	23
1994	13,393	2,313	12,255	0.92	5.30	123	12	432	55
1995	15,837	2,821	13,990	0.88	4.96	119	6	432	55
1996	19,119	3,485	14,079	0.74	4.04	119	5	649	26
1997	22,611	4,233	15,135	0.67	3.58	110	4	840	36
1998	24,369	4,547	14,320	0.59	3.15	64	2	936	21

Source: Industry Analysis Division, *Trends in the International Telecommunications Industry; Section 43.61 International Telecommunications Data.*

Note: Data represents traffic and circuits from domestic U.S. points to foreign points.

* Billed revenue per minute for international service differs in Table 14.5 and Table 7.1. Data in Table 14.5 are based on traffic to foreign points for all U.S. carriers serving all U.S. points. Data for Table 7.1 are based on traffic for domestic U.S. points only. The domestic U.S. includes Puerto Rico but excludes American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands.

TABLE 7.2

INTERNATIONAL TELEPHONE SERVICE SETTLEMENTS
(Revenue Amounts Shown in Millions)

	Billed Revenue	Owed to Foreign Carriers	Retained Revenue	Due from Foreign Carriers	Net Settlements	Net Revenue	Average per Minute: Settlement Owed for U.S. Billed Calls	Average per Minute: Settlement Due for Foreign Billed Calls	Average per Minute: Net Revenue All Traffic
1980	$2,097	$1,063	$1,034	$716	($347)	$1,750	$0.68	$0.62	$0.64
1981	2,239	1,330	910	799	(531)	1,708	0.72	0.56	0.52
1982	2,382	1,674	708	961	(712)	1,670	0.77	0.60	0.44
1983	2,876	2,036	841	1,086	(950)	1,926	0.77	0.60	0.43
1984	3,197	2,269	928	1,066	(1,203)	1,994	0.75	0.54	0.40
1985	3,435	2,369	1,066	1,239	(1,130)	2,305	0.71	0.55	0.41
1986	3,891	2,802	1,089	1,387	(1,414)	2,476	0.72	0.56	0.39
1987	4,559	3,309	1,250	1,634	(1,675)	2,884	0.74	0.61	0.39
1988	5,507	3,868	1,640	1,840	(2,028)	3,480	0.75	0.62	0.41
1989	6,517	4,513	2,004	2,115	(2,398)	4,119	0.74	0.61	0.42
1990	7,626	5,079	2,547	2,317	(2,762)	4,863	0.70	0.60	0.42
1991	9,096	5,792	3,304	2,493 *	(3,298)	5,798	0.64	0.47	0.42
1992	10,179	5,945	4,234	2,601 *	(3,344)	6,835	0.59	0.43	0.43
1993	11,353	6,327	5,027	2,678 *	(3,649)	7,704	0.56	0.39	0.44
1994	12,255	6,947	5,308	2,658 *	(4,289)	7,966	0.52	0.35	0.39
1995	13,990	7,559	6,432	2,623 *	(4,936)	9,054	0.48	0.29	0.39
1996	14,079	8,206	5,873	2,560 *	(5,645)	8,434	0.43	0.27	0.30
1997	15,135	8,016	7,119	2,572 *	(5,444)	9,691	0.35	0.24	0.30
1998	14,320	7,176	7,144	2,418 *	(4,758)	9,562	0.29	0.20	0.27

Source: Industry Analysis Division, *Trends in the International Telecommunications Industry; Section 43.61 International Telecommunications Data.*

Note: Data are for traffic between domestic U.S. points and foreign points.

* Includes transiting traffic.

TABLE 7.3

INTERNATIONAL MESSAGE TELEPHONE SERVICE FOR 1998

(Figures Rounded to the Nearest Million)

International Point	Traffic Billed in the United States					Traffic Billed in Foreign Countries				Total U.S. Carrier
						Originating or Terminating in the United States			TRANSITING	
	Number of Messages	Number of Minutes	U.S. Carrier Revenue	Owed to Foreign Carriers	Retained Revenue	Number of Messages	Number of Minutes	Due from Foreign Carriers	Retained Revenue	Retained Revenue
Africa	175	862	$684	$462	$222	30	121	$67	$21	$311
Asia	887	4,921	3,450	2,138	1,311	287	1,297	522	29	1,862
Caribbean	276	1,660	1,087	711	376	93	363	125	8	510
Eastern Europe	124	743	509	238	270	33	148	49	8	328
Middle East	126	705	633	423	211	57	301	165	18	393
North and Central America	1,373	7,674	3,612	1,646	1,966	925	4,572	673	13	2,652
Oceania	158	654	324	149	175	57	374	93	13	281
South America	362	1,868	1,327	753	574	110	490	216	13	804
Western Europe	1,099	5,472	2,745	666	2,079	510	2,434	322	67	2,468
Other Regions	3	17	28	20	7	*	*	*	1	9
Total for Foreign Points	4,557	24,424	14,367	7,195	7,172	2,096	10,051	2,230	191	9,593
Total for U.S. Points	29	169	46	18	28	9	63	8	1	36
Total for all International Points	4,585	24,593	$14,412	$7,213	$7,200	2,105	10,114	$2,238	$191	$9,629

Source: Industry Analysis Division, *Section 43.61 International Telecommunications Data.*

* Denotes values that are less than half a million.

Note: The region totals include all traffic reported by carriers serving Alaska, Hawaii, Puerto Rico, and the conterminous United States, and include traffic between these points and offshore U.S. points such as Guam and the U.S. Virgin Islands. This traffic is shown separately as the total for U.S. points, and also is included in the total for all international points.

CHART 7.1

U.S. BILLED MINUTES BY COUNTRY

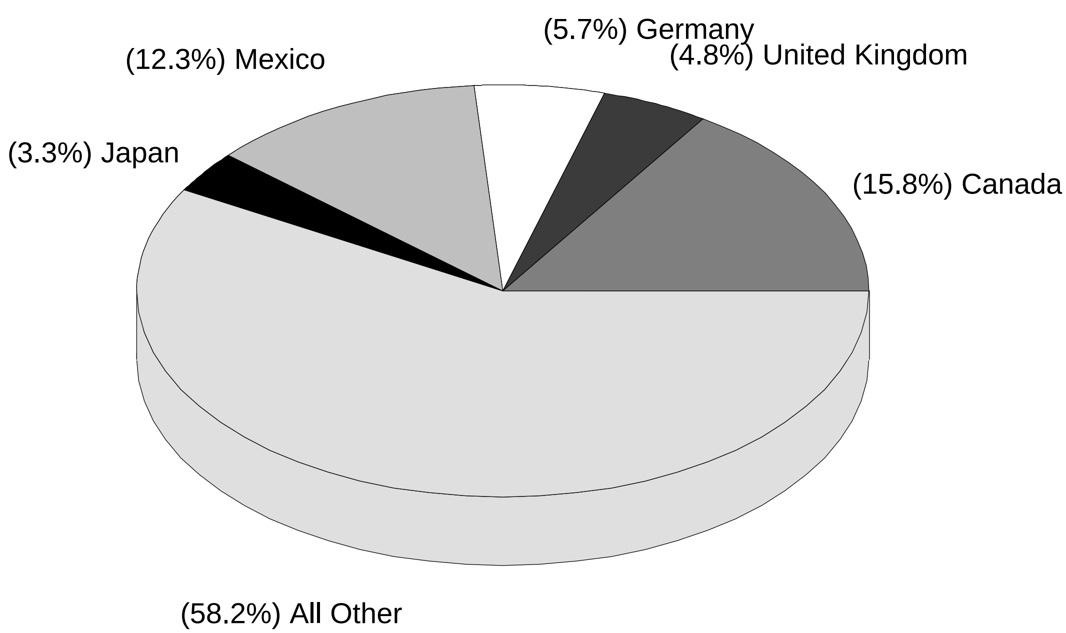


TABLE 7.4

U.S. BILLED REVENUES OF FACILITIES-BASED AND FACILITIES-RESALE CARRIERS IN 1998 *
(Revenue Amounts Shown in Millions)

	International Service			Total International Billed Revenue
	Telephone	Private Line	Telex, Telegraph and Other Miscellaneous	
ABS-CBN Telecom, North America, Inc.	**			**
AM Telecom, LLC				
American Samoa Telecomm. Authority	2			2
Ameritech Corporation	1			1
Andrew Telecom, Inc.	1	1		2
AT&T Corp.	7,700	270	41	8,012
BT North America Inc.		1	**	1
Cable & Wireless, Inc.	10	19		29
Communication TeleSys. Int'l./WorldxChange	159			159
COMSAT Corporation		**		**
DirectNet Telecommunications	7	4		11
Esprit Telecom (U.K.), Ltd.				
FaciliCom International, L.L.C.	167			167
Fedex International Transmission Corporation		**		**
GE American Communications, Inc.		6		6
Geocomm Corporation		1		1
GTE Corporation	55	3	**	59
Harris Corporation	1			1
ICG Communications, Inc./Maritime Telecomm.		2		2
IDC America, Inc.		3		3
IDT Corporation	3			3
IMPSAT USA, Inc.		15		15
International Exchange Networks, Ltd.	1	14		14
Iridium North America			**	**
IT&E Overseas, Inc.	26	3		29
Japan Telecom America, Inc.	1	**		1
Local Communications Network, Inc.		4		4
Masatepe Communications, U.S.A., L.L.C.	1			1
MCI WorldCom, Inc.	4,298	424	28	4,751
Melbourne International Comm., Ltd.	**	3		3
Mobile Satellite Communications, Inc.		1	**	1
New Global Telecom, Inc.	34			34
Northern Communications, Inc.		**		**
ntta.com, inc.		2		2
Overseas Telecommunications, Inc.		1		1
Pacific Gateway Exchange, Inc.	148	**		148
PanAmSat Comm. Carrier Services, Inc.		**		**
Primus Telecommunications, Inc.	27			27
PSO, Inc. d/b/a Canal Uno			**	**
RSL Communications, Ltd.	54	**		55
Sprint	1,421	116	15	1,553
Star Telecommunications, Inc.	132			132
Startec Global Communications Corp.	8			8
Telecom New Zealand Limited	43			43
Telecomunicaciones Ultramarinas-Puerto Rico		1		1
Telefonica Larga Distancia, Inc.	20	1		21
Telia North America, Inc.		15		15
TresCom International, Inc.	14			14
TRICOM USA, Inc.	13			13
Unisource Carrier Services AG				
V-SAT Telecom, Inc.	**	**		**
Viatel, Inc./YYC Communications, Inc.	63			63
Williams Communications, Inc.			1	1
Total all carriers ***	$14,412	$911	$87	$15,410

Source: Industry Analysis Division, *Section 43.61 International Telecommunications Data.*

* Totals exclude pure resale services.

** Represents revenues greater than $0 but less than $500,000.

*** Table 7.4 includes revenue for American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands. Other tables in this section exclude this traffic. The data shown in this table include $64 million of revenue billed in these points as well as $46 million of calls between the domestic United States and these points.

TABLE 7.5

TOP PROVIDERS OF PURE RESALE INTERNATIONAL MTS IN 1998

	Number of Messages	Number of Minutes	U.S. Carrier Revenue	Percent of Total IMTS Resale Revenue
American Long Lines, Inc.	2,745,632	54,912,649	$17,160,203	0.36 %
Ameritech Corporation	10,361,820	52,868,563	18,564,767	0.39
AmeriVision Communications, Inc.	11,822,925	236,458,499	73,893,281	1.54
ATI Telecom, Inc.	11,809,289	140,132,084	45,630,675	0.95
AT&T Corp.	34,718,638	257,950,262	206,341,896	4.30
Business Telecom, Inc. (BTI)	12,764,369	69,065,930	29,924,604	0.62
Cable & Wireless, Inc.	186,633,182	796,877,605	285,142,253	5.94
CEO Telecommunications, Inc.	2,148,071	12,794,291	9,428,164	0.20
Coastal Telephone Company	5,042,418	23,696,934	13,775,658	0.29
Communication TeleSystems Int'l., d/b/a CTS and WorldxChange	33,014,708	188,486,489	48,983,039	1.02
ComTech International	52,591,212	291,305,630	54,870,306	1.14
DirectNet Telecommunications	32,101,975	171,914,258	59,551,135	1.24
Elephant Talk, Inc.	19,478,867	75,772,796	18,846,430	0.39
Excel Telecommunications, Inc.	20,601,068	166,642,078	123,517,052	2.57
Frontier Corporation	28,381,501	114,791,126	94,230,968	1.96
GTE	42,154,416	144,796,013	120,338,984	2.51
IDT Corporation	222,337,221	1,563,714,187	119,251,899	2.49
Incomnet Communications Corporation	3,333,603	23,572,181	18,417,609	0.38
Intermedia Communications, Inc.	20,464,294	409,285,878	28,461,882	0.59
IXC Communications Services, Inc.	20,370,405	71,296,419	33,709,927	0.70
Justice Technology Corporation	8,486,088	44,127,658	15,886,195	0.33
Long Distance International, Inc. (LDI)	5,656,846	16,008,875	40,159,459	0.84
Long Distance Wholesale Club	4,401,655	45,502,453	24,433,300	0.51
MATRIX Telecom	2,726,082	19,537,503	13,826,460	0.29
MCI WorldCom, Inc.	424,620,707	1,980,576,745	682,600,714	14.23
NETMoves Corp.	8,792,257	15,609,896	10,197,054	0.21
Network Plus, Inc.	30,932,343	114,449,680	40,893,432	0.85
NOS Communications, Inc.	6,313,726	36,421,960	14,042,810	0.29
Omnipoint Communications, Inc.	841,242	6,660,776	11,218,399	0.23
Primus Telecommunications, Inc.	126,024,284	658,905,556	210,977,592	4.40
Progress International, L.L.C. (Progress)	7,574,145	49,989,356	12,497,339	0.26
Q Telecommunications International Corporation	6,768,474	38,161,516	9,479,177	0.20
Qwest Communications Corporation	78,246,000	499,162,000	236,446,000	4.93
Rapid Link USA, Inc.	10,035,500	111,550,000	21,337,780	0.44
RSL COM U.S.A., Inc.	112,743,948	737,224,307	157,366,511	3.28
Sprint	33,344,436	150,078,620	89,244,650	1.86
Star Telecommunications, Inc.	379,774,858	2,435,960,499	709,161,916	14.78
Startec Global Communications	6,225,423	388,148,923	153,268,132	3.19
Telco Holdings, Inc.	6,339,883	60,181,503	37,891,716	0.79
Telegroup, Inc.	44,963,602	899,272,038	281,022,512	5.86
Tel-Save, Inc.	38,882,542	255,768,649	35,672,057	0.74
UniDial, Incorporated	3,568,538	17,123,651	9,915,738	0.21
URSUS Telecom Corporation	15,907,254	111,514,724	54,241,946	1.13
US Wats, Inc.	8,439,774	25,319,322	10,127,729	0.21
US WEST Communications, Inc.	5,669,898	111,877,388	35,373,850	0.74
USA Global Link, Inc.	8,039,021	46,719,184	18,423,265	0.38
VarTec Telecom, Inc.	17,010,065	76,754,929	73,453,061	1.53
Viatel, Inc. including Flat Rate Communications	33,394,996	141,345,427	63,230,870	1.32
Working Assets Funding Services, Inc.	2,527,953	20,472,795	15,668,603	0.33
World-Link, Inc.	2,280,362	13,304,301	11,606,677	0.24
Carriers not shown above	160,330,779	703,727,448	278,209,842	5.79
Total	2,373,738,295	14,697,791,554	$4,797,915,518	100.00 %

Source: Industry Analysis Division, *Section 43.61 International Telecommunications Data.*

8 LIFELINE:

In 1984, the FCC, in conjunction with the states and local telephone companies, established a Lifeline program designed to promote universal service by helping low-income individuals afford the monthly cost of telephone service. In 1985, the FCC expanded the Lifeline program. In 1987, the FCC adopted LinkUp America, a program designed to help low-income households pay the costs of connection and installation of telephone service.

In 1997, the Commission revised the Lifeline program to assure that all Lifeline customers could, beginning January 1, 1998, receive $5.25 in federal support without a matching requirement. The federal support applies to a single telephone line at the qualifying consumers' principal place of residence.

To qualify for Lifeline benefits, a consumer must meet criteria established by the appropriate state commission. The state commission is required to establish narrowly targeted qualification criteria based on income or factors directly related to income. In states that do not provide state support, a consumer must participate in one of the following programs: Medicaid; food stamps; Social Security Income (SSI); federal public housing assistance; or the Low-Income Home Energy Assistance Program (LIHEAP). The named subscriber to the local telecommunication service (not any member of a household) must participate in one of these assistance programs in order for that household to receive Lifeline support. All carriers designated by their state commission as eligible telecommunications carriers must offer Lifeline and LinkUp support to qualifying consumers.

All qualifying low-income consumers will receive the following services: voice grade access to the public switched network; touch tone dialing; single-party service or its functional equivalent; access to emergency services; access to operator services; access to interexchange service; access to directory assistance; and access to toll limitation free of charge (provided that the carrier is technically capable of providing toll limitation).

LinkUp offers eligible low-income consumers: (1) a reduction in the local telephone company's charges for starting telephone service (the reduction is one-half of the telephone company's charge or $30.00, whichever is less) and (2) a deferred payment plan for charges assessed for starting service, for which eligible consumers do not have to pay interest. Eligible consumers are relieved of paying interest charges of up to $200 that are deferred for a period not to exceed one year. The LinkUp reduction applies to a single telephone line at an eligible consumer's principal place of residence.

Table 8.1 reports Lifeline monthly support by state as of January 2000. The table shows both federal and state support, and indicates the additional contribution from the federal program to reduce local rates where states have authorized statewide or carrier-specific intrastate local rate reductions.

Table 8.2 reports historical Lifeline program state subscribership statistics for 1988 through November 1999. Subscriber data reported for 1997 are estimated for all states.

Table 8.3 reports historical subscriber participation in the LinkUp program. The subscribership data shows annual connection assistance statistics for 1988 through 1999

Table 8.4 provides a twelve-year view of Lifeline program annual payments to subscribers through local rate discounts. Lifeline program payments are projected for 1999. The payments shown in this table do not include state or local rate contributions.

Table 8.5 reports low income support, by state or jurisdiction, for Lifeline and LinkUp payments between January 1998 and August 1999. Projected program payments for 1999, as reported in the *State-by-State Telephone Revenue and Universal Service Data Report*, is included in the table. Total carrier payments data include local rate reductions for the presubscribed interexchange carrier charges (PICCs), and for the carriers incremental cost of providing toll-limitation services (TLS) in each state or jurisdiction.

TABLE 8.1

LIFELINE MONTHLY SUPPORT BY STATE OR JURISDICTION
(As of January 2000)

State or Jurisdiction	Basic Federal Support	Additional State Support	Federal Match	Total Federal Support	Total Federal and State Support
Alabama	$5.25	$3.50	$1.75	$7.00	$10.50
Alaska	5.25	3.50	1.75	7.00	10.50
American Samoa	5.25	0	0	5.25	5.25
Arizona	5.25	2.28	1.14	6.39	8.67
Arkansas	5.25	0	0	5.25	5.25
California	5.25	3.50	1.75	7.00	10.50
Colorado	5.25	3.50	1.75	7.00	10.50
Connecticut	5.25	1.17	0.58	5.83	7.00
Delaware	5.25	0	0	5.25	5.25
District of Columbia	5.25	3.50	1.75	7.00	10.50
Florida	5.25	3.50	1.75	7.00	10.50
Georgia	5.25	3.50	1.75	7.00	10.50
Guam	5.25	3.50	1.75	7.00	10.50
Hawaii	5.25	0	0	5.25	5.25
Idaho	5.25	3.50	1.75	7.00	10.50
Illinois	5.25	1.50	0.75	6.00	7.50
Indiana	5.25	0	0	5.25	5.25
Iowa	5.25	0	0	5.25	5.25
Kansas	5.25	3.50	1.75	7.00	10.50
Kentucky	5.25	3.50	1.75	7.00	10.50
Louisiana	5.25	0	0	5.25	5.25
Maine	5.25	3.50	1.75	7.00	10.50
Maryland	5.25	3.50	1.75	7.00	10.50
Massachusetts	5.25	6.00	1.75	7.00	13.00
Michigan	5.25	2.00	1.00	6.25	8.25
Minnesota	5.25	0	0	5.25	5.25
Mississippi	5.25	3.50	1.75	7.00	10.50
Missouri	5.25	0	0	5.25	5.25
Montana	5.25	3.50	1.75	7.00	10.50
Nebraska	5.25	3.50	1.75	7.00	10.50
Nevada	5.25	3.50	1.75	7.00	10.50
New Hampshire	5.25	0	0	5.25	5.25
New Jersey	5.25	0	0	5.25	5.25
New Mexico	5.25	3.50	1.75	7.00	10.50
New York	5.25	3.50	1.75	7.00	10.50
North Carolina	5.25	3.50	1.75	7.00	10.50
North Dakota	5.25	3.50	1.75	7.00	10.50
Northern Mariana Islands	5.25	0	0	5.25	5.25
Ohio	5.25	0	0	5.25	5.25
Oklahoma	5.25	1.17	0.58	5.83	7.00
Oregon	5.25	3.50	1.75	7.00	10.50
Pennsylvania	5.25	2.50	1.25	6.50	9.00
Puerto Rico	5.25	0	0	5.25	5.25
Rhode Island	5.25	3.50	1.75	7.00	10.50
South Carolina	5.25	3.50	1.75	7.00	10.50
South Dakota	5.25	0	0	5.25	5.25
Tennessee	5.25	3.50	1.75	7.00	10.50
Texas	5.25	3.50	1.75	7.00	10.50
Utah	5.25	3.50	1.75	7.00	10.50
Vermont	5.25	3.50	1.75	7.00	10.50
Virginia	5.25	3.50	1.75	7.00	10.50
Virgin Islands	5.25	7.05	1.75	7.00	14.05
Washington	5.25	3.50	1.75	7.00	10.50
West Virginia	5.25	2.00	1.00	6.25	8.25
Wisconsin	5.25	2.00	1.75	7.00	10.50
Wyoming	5.25	3.50	1.75	7.00	10.50

Source: Universal Service Administration Company (USAC).

TABLE 8.2

LIFELINE ASSISTANCE - SUBSCRIBERS BY STATE OR JURISDICTION

State or Jurisdiction	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997*	1998**	1999***
Alabama	0	0	0	0	0	0	0	2,648	11,052	14,346	17,201	18,640
Alaska	0	0	0	0	0	0	887	1,445	1,684	1,761	2,530	4,075
American Samoa	0	0	0	0	0	0	0	0	0	0	156	417
Arizona	5,431	5,959	6,723	6,214	5,748	7,587	9,146	9,820	10,679	9,438	21,461	21,995
Arkansas	5,618	6,262	6,703	7,295	7,479	7,370	6,859	7,988	9,730	8,926	8,870	8,846
California	1,310,277	1,467,859	1,578,458	1,792,884	2,000,234	2,327,740	2,534,160	2,817,982	3,032,960	3,000,571	3,105,856	3,162,690
Colorado	17,281	0	9,897	17,871	20,110	18,814	18,136	16,992	22,195	22,452	21,938	23,821
Connecticut	0	0	0	0	0	15,294	50,510	62,982	62,610	61,683	59,547	60,901
Delaware	0	0	0	0	0	0	0	0	0	0	368	600
District of Columbia	2,952	2,964	2,894	2,866	5,422	12,344	11,572	10,252	9,888	7,580	N/A	10,585
Florida	0	0	0	0	0	0	61,442	108,431	134,258	129,723	131,749	130,222
Georgia	0	0	0	31,681	58,497	67,112	72,548	79,545	79,606	75,341	73,660	74,530
Guam	0	0	0	0	0	0	0	0	0	0	313	850
Hawaii	6,025	6,378	6,081	5,950	5,862	6,005	6,200	6,444	6,731	6,465	9,008	12,323
Idaho	7,962	7,861	8,186	8,411	8,149	8,212	7,090	7,347	7,526	7,408	6,907	14,638
Illinois	0	0	0	0	0	26	0	0	0	0	29,103	48,938
Indiana	0	0	0	0	0	0	0	0	0	0	12,439	18,896
Iowa	0	0	0	0	0	0	0	0	0	0	2,460	5,959
Kansas	0	0	0	0	0	0	0	0	0	0	4,260	5,515
Kentucky	0	26	0	0	0	0	0	0	0	0	5,044	22,572
Louisiana	0	0	0	0	0	0	0	0	0	0	5,838	10,327
Maine	31,752	33,308	44,392	53,020	63,411	70,029	68,482	62,949	61,177	63,553	63,407	66,912
Maryland	2,948	2,930	5,465	5,203	5,395	5,228	5,226	4,663	4,028	3,964	3,784	3,877
Massachusetts	0	0	87,285	131,635	143,216	160,221	165,723	167,182	162,384	156,294	161,657	167,408
Michigan	0	41,121	66,053	96,044	116,398	130,586	138,870	135,599	131,786	129,337	129,267	131,635
Minnesota	22,386	45,625	57,529	57,075	51,151	55,380	59,431	51,089	48,494	47,575	49,073	54,807
Mississippi	0	0	0	2,153	2,405	4,493	8,438	9,717	9,282	8,321	10,471	13,287
Missouri	16,064	15,187	14,639	16,980	17,295	17,356	15,807	13,897	11,272	10,368	7,885	10,429
Montana	4,589	5,023	5,507	5,405	5,698	6,617	6,744	6,813	8,031	7,613	7,963	9,353
Nebraska	0	0	0	0	0	0	0	0	0	0	9,650	11,202
Nevada	1,665	4,497	5,702	5,748	6,339	7,528	8,927	9,408	8,472	9,284	3,438	10,351
New Hampshire	0	0	0	0	0	0	0	0	0	0	2,581	5,143
New Jersey	0	0	0	0	0	0	0	0	0	0	6,037	6,406
New Mexico	10,692	11,722	12,770	15,190	18,660	28,742	32,244	28,380	30,075	30,314	30,816	32,822
New York	197,339	271,386	327,808	393,684	456,174	522,684	592,705	705,871	756,657	698,267	703,001	658,531
North Carolina	16,438	15,852	14,996	15,812	21,208	23,496	23,446	22,791	23,086	22,595	29,640	44,336
North Dakota	2	0	10,037	10,610	10,664	10,029	9,411	8,657	7,146	7,369	10,898	11,393
Northern Mariana Islands	0	0	0	0	0	0	0	0	0	0	192	484
Ohio	7,504	15,420	14,885	15,712	33,450	44,801	47,126	54,706	58,392	60,366	69,358	93,181
Oklahoma	0	0	0	0	0	0	0	0	532	532	1,521	2,371
Oregon	49,632	22,330	21,551	23,064	25,229	28,305	30,475	35,820	34,804	31,213	27,953	28,839
Pennsylvania	0	0	0	0	0	0	0	0	4,797	7,114	23,202	38,977
Puerto Rico	0	0	0	0	0	0	0	0	0	0	10,168	16,825
Rhode Island	12,854	14,017	15,757	23,765	26,906	38,672	39,992	40,835	42,524	43,881	45,066	46,192
South Carolina	0	0	0	0	0	0	0	10,624	16,498	18,386	22,222	21,138
South Dakota	4,019	4,657	4,764	4,924	5,018	5,076	3,561	3,690	3,718	3,708	10,698	11,369
Tennessee	0	0	0	0	18,749	20,419	20,721	19,934	19,926	18,819	22,915	29,959
Texas	11,878	21,055	33,698	48,453	96,405	103,232	136,352	165,609	190,095	193,444	210,672	235,004
Utah	16,262	14,746	16,006	21,565	27,717	28,379	28,157	26,930	24,088	22,625	20,096	19,271
Vermont	15,599	17,013	18,044	20,661	21,895	22,973	24,322	25,624	24,791	25,356	26,475	28,509
Virgin Islands	0	0	0	0	0	316	594	253	296	471	567	381
Virginia	12,129	14,895	16,201	17,365	19,143	21,293	22,100	20,744	22,180	23,187	22,040	22,309
Washington	33,372	34,685	49,985	68,235	74,879	85,571	90,148	87,276	84,149	63,965	61,563	61,892
West Virginia	6,180	4,930	4,490	4,262	4,115	4,160	4,704	4,230	4,336	5,164	5,320	5,553
Wisconsin	12	31	7	54,137	55,829	54,576	59,744	58,071	50,714	50,894	42,508	59,043
Wyoming	0	0	0	416	1,366	1,271	1,119	818	776	864	1,113	1,310
National Totals	1,828,862	2,107,739	2,466,513	2,984,290	3,440,216	3,971,937	4,423,119	4,914,056	5,233,425	5,110,537	5,371,925	5,617,839

Source: Industry Analysis Division, *Monitoring Report* and Universal Service Administration Company (USAC).

* Subscriber data was not actually collected in 1997. USAC used estimated number of subscribers for all states.

** Average number of subscribers reported for January through December 1998 for companies requesting reimbursement (including true-ups through November 1999).

*** Average number of subscribers reported for January through November 1999, including true-ups through November 1999.

TABLE 8.3

LINKUP ASSISTANCE - SUBSCRIBERS BY STATE OR JURISDICTION

State or Jurisdiction	1987 & 1988	1989	1990	1991	1992	1993	1994	1995	1996	1997*	1998**	1999***
Alabama	4,314	1,810	1,927	2,182	1,381	736	308	276	362	N/A	2,277	1,461
Alaska	0	0	0	0	0	0	395	777	732	N/A	917	917
American Samoa	0	0	0	0	0	0	0	0	0	N/A	122	605
Arizona	95	138	416	206	88	257	367	387	906	N/A	528	4,029
Arkansas	8,439	4,846	5,240	6,522	7,067	12,082	16,124	8,549	11,577	N/A	8,183	5,094
California	0	0	0	0	0	0	0	0	0	N/A	1,543,016	1,223,072
Colorado	0	0	585	1,749	1,614	1,257	859	593	2,216	N/A	2,537	1,233
Connecticut	2,970	2,737	3,499	6,661	9,164	10,316	17,176	18,410	13,934	N/A	8,938	6,640
Delaware	0	0	0	0	0	0	0	7	406	N/A	132	59
District of Columbia	1,016	531	514	510	1,145	1,863	1,675	1,920	1,784	N/A	N/	25
Florida	1,570	3,924	3,342	3,824	4,690	2,811	2,290	1,639	3,831	N/A	9,799	8,627
Georgia	0	0	0	13,052	28,108	21,446	20,753	20,656	15,368	N/A	10,701	8,259
Guam	0	0	0	0	0	0	0	0	0	N/A	201	637
Hawaii	0	87	905	1,326	1,708	2,047	2,746	3,989	3,276	N/A	6,408	9,360
Idaho	0	64	240	362	396	465	658	571	671	N/A	793	1,172
Illinois	0	3,963	23,213	11,721	0	21,278	24,365	15,794	10,077	N/A	12,304	11,916
Indiana	17	1,681	1,475	2,747	4,939	4,782	5,010	3,001	4,318	N/A	4,605	5,032
Iowa	2,158	5,997	6,228	5,522	5,221	4,784	4,382	3,249	2,575	N/A	2,093	1,418
Kansas	942	613	722	582	635	557	493	435	421	N/A	1,385	1,368
Kentucky	8,496	6,951	6,633	8,931	11,660	10,963	11,819	13,902	14,173	N/A	7,550	8,429
Louisiana	244	17,186	28,356	18,693	12,992	7,053	4,943	3,275	1,571	N/A	3,911	1,283
Maine	415	7,244	10,128	12,132	5,576	14,450	19,363	14,798	20,783	N/A	21,640	23,059
Maryland	246	243	4,985	3,540	3,168	2,772	2,837	2,613	2,091	N/A	1264	834
Massachusetts	0	0	8,569	4,366	4,661	17,390	19,464	18,601	11,727	N/A	5,864	9,732
Michigan	0	7,572	23,675	36,639	40,339	36,512	34,640	26,198	20,097	N/A	18,587	17,700
Minnesota	123	734	949	787	427	443	1,871	834	832	N/A	1,058	522
Mississippi	1,110	1,558	1,663	1,369	932	2,371	4,236	4,151	2,974	N/A	1,819	1,147
Missouri	1,546	2,067	1,105	840	766	735	1,633	742	627	N/A	4,838	1,001
Montana	960	1,624	1,607	1,157	1,181	1,291	1,253	988	1,909	N/A	1,676	1,421
Nebraska	267	438	526	688	878	650	522	496	331	N/A	641	511
Nevada	0	79	324	487	562	866	685	708	640	N/A	117	3,015
New Hampshire	2	351	407	1,009	1,544	1,805	1,570	1,312	1,246	N/A	1,315	1,277
New Jersey	1,251	452	524	580	696	565	567	342	237	N/A	1,042	456
New Mexico	1,534	2,461	3,173	4,178	5,848	9,963	12,600	12,277	9,171	N/A	7,894	6,943
New York	274	44,221	188,182	241,477	290,856	238,856	290,922	327,123	346,089	N/A	199,181	51,686
North Carolina	16,889	4,661	2,100	2,348	2,175	1,762	1,207	841	569	N/A	2,408	3,020
North Dakota	207	499	313	373	337	398	355	355	220	N/A	1,451	1,004
Northern Mariana Islands	0	0	0	0	0	0	0	0	0	N/A	1,475	3,497
Ohio	10,857	11,838	11,157	18,239	37,191	46,028	40,071	29,338	23,196	N/A	19,058	20,927
Oklahoma	0	0	728	1,582	1,271	1,281	1,087	1,040	1,260	N/A	3,121	1,402
Oregon	2,427	1,352	3,664	3,657	4,588	6,335	7,144	8,043	7,862	N/A	5,899	4,407
Pennsylvania	2,463	13,702	79,532	85,695	97,585	94,897	100,651	99,105	92,128	N/A	63,713	49,466
Puerto Rico	0	2,519	5,523	4,308	3,886	3,138	3,455	4,116	3,640	N/A	3,870	1,685
Rhode Island	79	584	1,023	960	1,483	2,002	2,808	2,728	2,100	N/A	1,766	1,344
South Carolina	4,954	3,037	1,535	2,265	1,897	2,113	2,053	1,495	1,158	N/A	2,270	1,898
South Dakota	173	1,038	542	443	439	362	451	369	221	N/A	2,330	1,606
Tennessee	122	6,613	3,278	5,418	4,126	5,203	5,004	3,561	3,684	N/A	4,190	5,669
Texas	17,124	15,553	22,587	30,915	41,381	44,184	66,010	72,210	75,708	N/A	121,794	111,351
Utah	1,812	1,043	387	1,781	6,286	4,843	3,758	3,525	5,584	N/A	2,880	1,974
Vermont	0	0	1,349	2,073	2,104	2,217	2,485	2,074	1,396	N/A	1,366	1,349
Virgin Islands	0	0	0	0	0	38	111	35	13	N/A	199	46
Virginia	5,507	5,957	9,598	14,642	14,523	15,701	15,797	15,847	14,428	N/A	10,261	7,227
Washington	414	0	3,787	30,134	34,413	37,419	43,429	41,462	45,284	N/A	27,780	25,350
West Virginia	4,741	481	327	363	322	586	577	657	997	N/A	488	815
Wisconsin	0	17,555	36,444	40,515	40,942	37,380	34,903	28,209	21,937	N/A	25,933	25,025
Wyoming	0	500	169	95	94	109	82	56	17	N/A	21	43
National Totals	105,758	206,504	513,335	639,645	743,285	737,362	837,964	823,679	808,354	N/A	2,195,609	1,689,045

Source: Industry Analysis Division, *Monitoring Report* and Universal Service Administration Company (USAC).

* Subscriber data was not collected in 1997.

** Subscribers reported for January through December 1998 for companies requesting reimbursement (including true-ups through November 1999).

*** Subscribers reported for January through November 1999, including true-ups through November 1999.

TABLE 8.4

LOW-INCOME SUPPORT PAYMENTS BY STATE OR JURISDICTION
(In Thousands of Dollars)

State or Jurisdiction	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999*	Cumulative Total
Alabama	$0	$0	$0	$0	$0	$0	$0	$57	$372	$603	$1,484	$1,609	$4,125
Alaska	0	0	0	0	0	0	24	55	69	74	224	363	810
American Samoa	0	0	0	0	0	0	0	0	0	0	12	41	53
Arizona	141	118	137	127	144	188	308	347	384	396	1,619	1,859	5,767
Arkansas	169	251	277	301	317	311	295	302	362	375	728	702	4,390
California	20,017	29,083	32,228	36,073	40,382	47,512	52,461	57,460	62,231	63,012	276,794	276,261	993,514
Colorado	559	405	173	751	844	802	776	728	829	943	1,902	2,013	10,725
Connecticut	0	0	0	0	0	57	1,494	2,587	2,661	2,591	3,862	4,306	17,557
Delaware	0	0	0	0	0	0	0	0	0	0	26	53	78
District of Columbia	93	112	100	91	128	313	429	314	293	318	0	880	3,072
Florida	0	0	0	0	0	0	1,290	4,396	5,191	5,448	10,313	11,210	37,849
Georgia	0	0	0	794	2,248	2,764	3,004	3,316	3,384	3,164	6,392	6,482	31,548
Guam	0	0	0	0	0	0	0	0	0	0	22	59	81
Hawaii	107	203	199	186	183	190	197	202	273	272	696	917	3,624
Idaho	237	329	347	359	355	349	329	322	321	311	588	1,291	5,137
Illinois	0	0	0	414	0	0	0	0	0	0	2,170	3,417	6,001
Indiana	0	0	0	0	0	0	0	0	0	0	899	1,319	2,218
Iowa	0	0	0	0	0	0	0	0	0	0	191	399	589
Kansas	0	0	0	0	0	0	0	0	0	0	367	470	837
Kentucky	0	0	0	0	0	0	0	0	0	0	459	1,876	2,335
Louisiana	0	0	0	0	0	0	0	0	0	0	453	675	1,128
Maine	956	1,325	1,721	2,165	2,606	2,902	2,959	2,652	2,737	2,669	5,816	6,147	34,656
Maryland	94	120	220	217	213	222	218	212	180	166	318	344	2,524
Massachusetts	0	0	2,552	5,127	5,997	6,599	7,065	7,147	6,952	6,564	13,737	14,275	76,015
Michigan	0	433	1,349	2,164	2,742	3,082	3,351	3,288	3,204	3,104	10,144	10,158	43,020
Minnesota	453	1,659	2,257	2,416	2,259	2,295	2,332	2,170	2,081	1,998	3,547	3,443	26,909
Mississippi	0	0	0	17	30	110	340	400	401	349	926	1,000	3,572
Missouri	489	634	621	648	711	699	654	590	487	435	635	686	7,288
Montana	145	192	235	229	234	267	281	290	329	320	700	815	4,036
Nebraska	0	0	0	0	0	0	0	0	0	0	624	757	1,381
Nevada	20	113	122	134	148	173	194	207	197	215	216	773	2,513
New Hampshire	0	0	0	0	0	0	0	0	0	0	189	342	530
New Jersey	0	0	0	0	0	0	0	0	0	0	340	409	749
New Mexico	318	465	528	615	745	1,167	1,358	1,217	1,265	1,273	2,730	2,947	14,629
New York	4,104	8,918	11,254	15,650	18,296	20,970	23,845	27,188	30,925	29,327	60,240	54,946	305,662
North Carolina	521	681	637	648	875	963	1,003	922	972	949	2,482	3,735	14,390
North Dakota	0	0	300	438	447	422	412	379	333	309	901	1,018	4,961
Northern Mariana Islands	0	0	0	0	0	0	0	0	0	0	17	28	44
Ohio	240	644	644	650	1,305	1,963	2,293	2,410	2,366	2,535	5,694	6,924	27,669
Oklahoma	0	0	0	0	0	0	0	0	0	1	154	192	347
Oregon	516	892	895	944	1,045	1,175	1,263	1,500	1,479	1,311	2,427	2,505	15,949
Pennsylvania	0	0	0	0	0	0	0	0	88	299	3,212	3,914	7,512
Puerto Rico	0	0	0	0	0	0	0	0	0	0	655	1,084	1,739
Rhode Island	405	571	644	960	1,111	1,488	1,694	1,714	1,773	1,843	3,807	3,905	19,915
South Carolina	0	0	0	0	0	0	0	264	647	772	1,868	1,791	5,343
South Dakota	66	190	202	207	211	214	160	156	153	156	704	752	3,172
Tennessee	0	0	0	0	506	844	881	838	841	790	1,953	2,537	9,191
Texas	127	801	1,120	1,737	3,576	4,182	5,335	6,723	7,776	8,125	19,870	22,288	81,659
Utah	469	382	609	874	1,162	1,204	1,209	1,179	1,057	950	1,735	1,690	12,521
Vermont	486	692	756	859	924	980	1,042	1,094	1,040	1,065	2,239	2,429	13,605
Virgin Islands	0	0	0	0	0	6	29	22	14	20	51	60	202
Virginia	329	600	670	704	783	907	920	912	911	974	1,956	1,959	11,625
Washington	723	859	1,475	2,199	2,525	2,997	2,966	2,814	2,744	2,687	4,601	5,279	31,868
West Virginia	169	206	193	181	175	188	207	191	176	217	377	397	2,678
Wisconsin	0	0	0	218	483	522	617	677	653	611	3,147	4,262	11,190
Wyoming	0	0	0	6	58	55	49	36	33	36	94	106	473
National Totals	$31,952	$50,878	$62,464	$79,104	$93,766	$109,083	$123,284	$137,277	$148,186	$147,579	$467,310	$480,094	$1,930,978

Source: Industry Analysis Division, *Monitoring Report*.

* Projection for 1999 as reported in the *State-by-State Telephone Revenue and Universal Service Data Report*, released January 20, 2000.

TABLE 8.5

LOW-INCOME PROGRAM DOLLARS

State or	Full Year 1998					January - November 1999					1999 *
Jurisdiction	Lifeline	LinkUp	TLS	PICC	Total	Lifeline	LinkUp	TLS	PICC	Total	Total
Alabama	$1,430,879	$37,868	$2,119	$16,305	$1,487,171	$1,417,022	$26,511	$1,971	$21,602	$1,467,106	$1,609,004
Alaska	191,004	18,647	14,584	60	224,295	304,315	23,029	26,622	385	354,351	362,702
American Samoa	8,167	3,660	0	0	11,827	24,068	18,150	0	0	42,218	41,133
Arizona	1,591,648	12,473	13,621	1,018	1,618,760	1,479,331	94,769	63,659	28,081	1,665,840	1,859,289
Arkansas	579,956	142,354	2,837	3,140	728,287	534,954	95,517	2,068	6,683	639,222	701,736
California	245,308,717	28,645,433	2,077,337	762,996	276,794,483	227,587,524	22,313,292	2,087,754	933,630	252,922,200	276,260,972
Colorado	1,832,881	44,545	18,578	8,345	1,904,349	1,833,332	21,718	34,817	21,288	1,911,155	2,012,598
Connecticut	3,611,946	201,089	27,447	21,318	3,861,800	3,905,590	149,399	20,515	21,397	4,096,901	4,305,959
Delaware	23,198	2,376	0	0	25,574	34,636	1,062	0	0	35,698	52,871
District of Columbia	0	0	0	0	0	803,458	384	0	0	803,842	880,193
Florida	10,286,854	196,450	10,707	70,479	10,564,490	9,971,342	175,275	14,703	96,999	10,258,319	11,209,742
Georgia	6,129,384	204,709	8,052	49,896	6,392,041	5,670,780	158,331	9,711	79,527	5,918,349	6,482,081
Guam	18,061	3,521	0	0	21,582	57,607	11,149	0	0	68,756	59,034
Hawaii	551,000	145,251	0	150	696,401	714,888	211,825	3,520	3,711	933,944	916,590
Idaho	571,493	11,539	3,877	997	587,906	1,149,458	15,242	22,114	15,417	1,202,231	1,290,543
Illinois	1,838,226	318,391	995	17,291	2,174,903	2,863,717	306,862	1,900	41,685	3,214,164	3,416,616
Indiana	783,774	103,940	1,533	9,888	899,135	1,094,048	116,342	2,549	21,136	1,234,075	1,319,055
Iowa	148,518	29,421	11,232	1,816	190,987	341,971	20,002	14,294	7,733	384,000	398,556
Kansas	337,249	26,737	993	1,984	366,963	420,372	26,438	2,083	5,958	454,851	469,950
Kentucky	305,764	143,852	4,200	5,307	459,123	1,740,300	164,435	5,411	19,932	1,930,078	1,876,076
Louisiana	366,776	74,074	1,433	10,857	453,140	592,806	24,623	1,810	19,924	639,163	675,029
Maine	5,299,276	477,470	19,660	19,402	5,815,808	5,127,485	510,479	7,376	49,599	5,694,939	6,146,948
Maryland	317,814	30,336	0	0	348,150	298,479	19,984	0	0	318,463	343,784
Massachusetts	13,572,243	108,720	0	55,882	13,736,845	12,890,423	180,430	0	107,146	13,177,999	14,275,077
Michigan	9,678,049	384,073	8,773	73,502	10,144,397	9,039,499	368,319	8,460	104,543	9,520,821	10,158,437
Minnesota	3,530,029	15,793	3,233	932	3,549,987	3,141,335	5,913	9,883	5,063	3,162,194	3,442,721
Mississippi	876,569	38,302	1,234	9,295	925,400	1,011,718	22,943	1,801	17,273	1,053,735	999,798
Missouri	545,925	83,766	2,683	2,494	634,868	661,209	14,091	3,483	7,682	686,465	686,421
Montana	665,529	22,356	10,524	1,942	699,534	729,788	19,164	16,565	4,726	770,243	814,899
Nebraska	603,067	8,584	12,640	3,411	627,702	700,176	7,618	13,908	7,704	729,406	757,265
Nevada	214,128	1,902	410	13	216,453	672,711	50,926	2,135	3,217	728,989	773,405
New Hampshire	161,489	26,155	0	873	188,517	296,434	24,859	0	3,840	325,133	341,820
New Jersey	317,378	22,502	330	0	340,210	369,142	9,662	319	0	379,123	408,833
New Mexico	2,517,906	116,668	70,603	31,716	2,736,893	2,496,746	104,711	74,804	59,635	2,735,896	2,946,525
New York	53,807,308	5,480,654	74	969,427	60,257,463	46,224,756	1,410,379	3,044	1,045,933	48,684,112	54,945,938
North Carolina	2,427,820	38,545	2,416	13,365	2,482,146	3,390,828	47,889	4,866	25,951	3,469,534	3,734,948
North Dakota	862,999	23,146	10,603	4,525	901,273	809,914	15,970	14,041	8,533	848,458	1,018,371
Northern Mariana Isl.	10,659	5,887	0	0	16,546	27,264	10,365	0	0	37,629	27,575
Ohio	5,270,380	322,012	21,328	99,255	5,712,975	6,138,410	348,012	19,857	158,326	6,664,605	6,923,876
Oklahoma	104,566	47,878	883	1,077	154,404	149,887	28,607	1,024	2,427	181,945	192,095
Oregon	2,351,144	46,207	19,739	10,286	2,427,376	2,225,562	36,145	19,260	23,296	2,304,263	2,501,885
Pennsylvania	1,741,674	1,257,631	90	800	3,000,195	2,722,151	952,956	25	1,580	3,676,712	3,913,979
Puerto Rico	587,156	68,116	0	0	655,272	971,637	29,493	0	0	1,001,130	1,083,777
Rhode Island	3,753,152	29,878	0	23,846	3,806,876	3,526,458	22,738	0	41,819	3,591,015	3,905,406
South Carolina	1,798,292	42,591	6,278	21,106	1,868,267	1,554,332	36,093	9,633	25,214	1,625,272	1,790,696
South Dakota	656,428	29,490	14,889	3,267	704,074	642,936	21,014	8,540	8,263	680,753	752,039
Tennessee	1,863,198	78,322	1,364	10,249	1,953,133	2,245,994	99,916	5,896	25,306	2,377,112	2,537,294
Texas	17,082,669	2,244,255	173,804	368,228	19,868,956	17,631,515	2,123,169	185,561	664,404	20,604,449	22,288,224
Utah	1,665,232	36,078	24,856	9,186	1,735,352	1,481,719	24,595	28,564	16,181	1,551,059	1,690,296
Vermont	2,211,542	24,174	487	2,958	2,239,161	2,188,133	23,874	2,023	7,441	2,221,471	2,428,905
Virgin Islands	49,229	2,005	0	0	51,234	19,472	440	0	0	19,912	59,736
Virginia	1,788,279	183,002	478	627	1,972,386	1,703,808	132,162	675	1,095	1,837,740	1,958,757
Washington	4,059,632	417,353	89,905	33,236	4,600,126	4,358,846	391,767	96,669	64,859	4,912,141	5,279,000
West Virginia	367,951	8,966	0	23	376,940	351,097	12,168	653	87	364,005	397,398
Wisconsin	2,716,336	378,836	3,037	48,748	3,146,957	3,464,105	414,476	4,540	68,131	3,951,252	4,262,295
Wyoming	92,881	338	456	127	93,802	100,253	767	683	325	102,028	106,079
Totals	$419,483,424	$42,468,321	$2,700,322	$2,801,645	$467,452,895	$401,905,541	$31,496,449	$2,859,789	$3,904,687	$440,166,466	$480,094,217

Note: These dollars represent submitted claims to USAC for the time period January through December 1998 and January through November 1999.

* Projection for 1999 as reported in the *State-by-State Telephone Revenue and Universal Service Data Report*, released January 20, 2000.

9 LOCAL COMPETITION:

For most of the past century, households and businesses have had no choice in selecting their local telephone company. Mobile telephone services are widely available, at an increasing range of prices, but they are not yet accepted in the marketplace as complete substitutes for traditional local telephone service. In the 1980s, competitive access providers (CAPs) began to market to business customers access services provided over CAPs wired networks. To some extent they also carried local telephone calls among their customers. In the 1990s, some CAPs and other companies, including affiliates of cable television companies and local service divisions of long distance companies, began to offer local telephone calling services to a broader range of customers. Companies with operations in larger cities added operations in smaller cities, where the typical customer is more likely to be a small or medium-sized business than a large business, and some new companies focused on smaller cities from the beginning. The newer competitors are often called competitive local exchange carriers (CLECs), although the terms CAPs and CLECs are often used interchangeably.

The Telecommunications Act of 1996 (1996 Act) contemplated three incrementally powerful vehicles for entering local telephone service markets. First, CLECs may resell the services of incumbent local exchange carriers (ILECs). Second, CLECs may make use of ILEC facilities, for example, by leasing ILEC unbundled network element (UNE) loops to use in combination with the CLEC's own switching capability. Third, CLECs may build the complete set of facilities they need to compete. Individual competitors have used various combinations of these methods at different times.

Based on information about local competition that is available from public sources and voluntary surveys undertaken by Commission staff, the following broad conclusions emerge about the current status of local competition:

- ILECs claimed 96% of local service revenues in 1998, down from 98% in 1997.
- CLECs, many of which began as CAPs, have had more success selling specialized services, such as special access and local private line services, than they have had selling basic switched local service to end users.
- Local service competitors are deploying fiber in their networks at a faster rate than are ILECs. The new competitors increased their amount of fiber in place almost five fold from the end of 1995 to the end of 1998 and now have at least 16% of the total fiber optic system capacity (measured by fiber miles of fiber) that is potentially available to carry calls within local markets.
- Major ILECs as a group were providing 2.5% of their telephone lines – about 4.3 million lines in total – to CLECs at the end of June 1999. The Commission does not receive from CLECs data on the number of customer lines they provide solely over their own facilities. Estimates by investment analysts suggest, however, that CLECs supplied between 3% and 4% of total nationwide switched access lines at

mid-year 1999, about double the percentage they provided a year earlier.

- CLEC use of leased UNE loops has been increasing at a faster rate (but from a lower starting level) than CLEC resale of ILEC services: leased UNE loops increased 180% during the year ending June 30, 1999, compared to a 46% increase in lines used by CLECs to resell ILEC services.
- The rate of increase of resold ILEC services has slowed: the 17% increase during the first six months of 1999 compares to a 25% increase during the last six months of 1998 and a 40% increase during the first six months of 1998. The available survey data suggest that between 40% and 45% of the lines over which CLECs resell ILEC services are connected to residential consumers.
- As CLECs continue to invest in the collocation facilities that enable them to use leased UNE loops to serve consumers, CLECs have brought their facilities into switching centers serving an increasing share of ILEC lines: 60% of ILEC switched lines as of June 30, 1999, compared to 32% a year earlier.
- About 275 CLECs have purchased and installed, or plan soon to acquire, their own telephone switches somewhere in the United States. There were 13 such carriers at the end of 1995, immediately before the 1996 Act became law.
- The geographic reach of this facilities-based competition is extensive: at the beginning of the year 2000, at least one such competitor was present in 92% of the nation's 193 local access and transport areas (LATAs).
- In addition, to date, more than 3 million telephone numbers have been transferred among carriers for purposes that include, in particular, accommodating customers who want to keep their telephone number when they switch to a CLEC that uses its own facilities or leased UNE loops to provide service.

1. New Entrant Share of the Nationwide Market for Local Telephone Service

Chart 9.1, Chart 9.2, and Table 9.1 compare nationwide fiber deployment and revenue data for ILECs with data for local competitors. While consumers in a particular market can take service only from carriers that actually provide service in that market, the nationwide data serve as an indicator of broad trends.

Chart 9.1 presents data on fiber miles, which are calculated by multiplying the number of miles of fiber cable by the number of fiber strands per cable. ILECs added about 2.1 million fiber miles in 1998, an amount larger than the local competitor inventory at the end of 1997. Chart 9.2, however, shows that competitors have had a much faster rate of growth. At the end of 1998, competitors had at least 16% of the total fiber optic system capacity (measured by fiber miles of fiber) that is potentially available to carry calls within local telecommunications markets and to deliver calls to long distance carriers.

Table 9.1 shows the number and types of carriers reporting local service revenues (excluding local mobile services). ILECs reported $98 billion of local service revenue in 1998, up from $80 billion in 1993. CAPs/CLECs reported $2.4 billion of local service revenue in 1998, up from less than $200 million in 1993. Other carriers (local resellers, shared tenant service providers, private carriers, pay telephone providers, toll carriers and others that reported local service revenue) reported about $1.1 billion of local service revenue in 1998. Even with the most expansive definition of local competition, therefore, ILECs billed 96% of 1998 local service revenues.

2. New Entrant Use of Incumbent Services and Facilities: Nationwide, by State, and by Company

Table 9.2 summarizes, on a nationwide basis, the information from Common Carrier Bureau voluntary surveys that is presented in greater detail – by state and by company – in Table 9.3 through Table 9.6. At mid-year 1999, about 2.1% of nationwide ILEC switched voice grade lines – some 3.6 million lines – were being provided to CLECs on a resale basis. As reported in greater detail in Table 9.3, lines provided to CLECs on a total service resale (TSR) basis – the discount resale mechanism mandated by the 1996 Act – represented about 2.0% of ILEC switched voice grade lines. Another 0.1% of nationwide ILEC lines were being provided under resale arrangements other than TSR, which were not mandated by the 1996 Act. No survey information about resold lines is available for Alaska, but ILECs reported providing resold lines to CLECs in all other states.

Lines that ILECs reported leasing to CLECs under UNE arrangements increased by 90% in the first half of 1999, but remained a small 0.4% of total ILEC switched lines – about 0.7 million lines – as of June 30. The company-specific percentages reported at the end of Table 9.4 vary around the nationwide average, but also are small numbers. The mid-year 1999 survey data show four states with no lines provided under UNE arrangements – Idaho, South Dakota, West Virginia, and Wyoming – and no survey information is available for Alaska.

Table 9.5 reports survey information about the portion of resold (specifically, TSR) lines that serve CLEC residential customers, as opposed to CLEC business, government, or institutional customers. The Commission does not receive from CLECs data about the types of customers they serve over their own facilities or by means of leased UNE loops. However, there appears to be potential for significant gains in CLEC use of leased UNE loops to serve residential, as well as business, customers. Table 9.6 indicates that, at mid-year 1999, CLECs had operational collocation arrangements in switching centers from which ILECs reported serving 56% of their residential switched lines and 68% of their switched lines to businesses, government, and institutions.

3. Facilities-Based New Entrants in the Switched Market: Nationwide, and by LATA

A local service competitor that owns a telephone switch must acquire a numbering code ("Central Office" code or "CO" code or "NXX" code) for that switch before commencing operation as a facilities-based CLEC providing mass market switched telephone service. While code assignment does not guarantee that a carrier is providing service in an area, if a reserved code is not activated within eighteen months, the North American Numbering Plan Administrator will start the code reclamation process for that code.

Table 9.7 and Chart 9.3 show that the nationwide share of numbering codes held by new local competitors has steadily increased over time, to 27% in the fourth quarter of 1999.

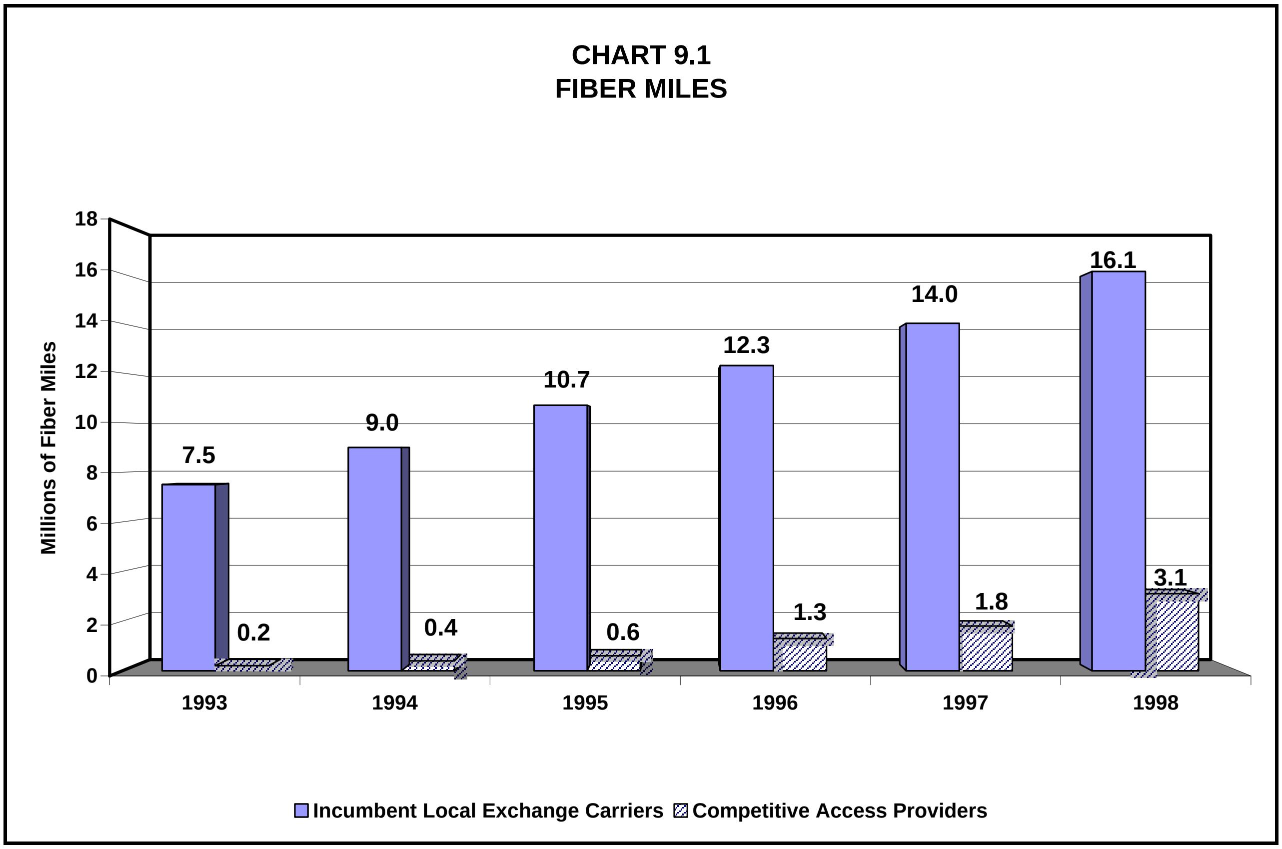
Chart 9.4 and Chart 9.5 demonstrate that facilities-based local competitors continue to enter the local exchange business and to extend their geographic reach. The first CLECs to acquire numbering codes did so in the second quarter of 1994. Chart 9.4 shows that, on a nationwide basis, 275 CLECs had at least one numbering code in the fourth quarter of 1999, compared to 13 in the last quarter of 1995 (which immediately preceded enactment of the 1996 Act). Chart 9.5 shows that the percentage of LATAs with at least one CLEC present increased from 14% to 92% between the last quarter of 1995 and the last quarter of 1999.

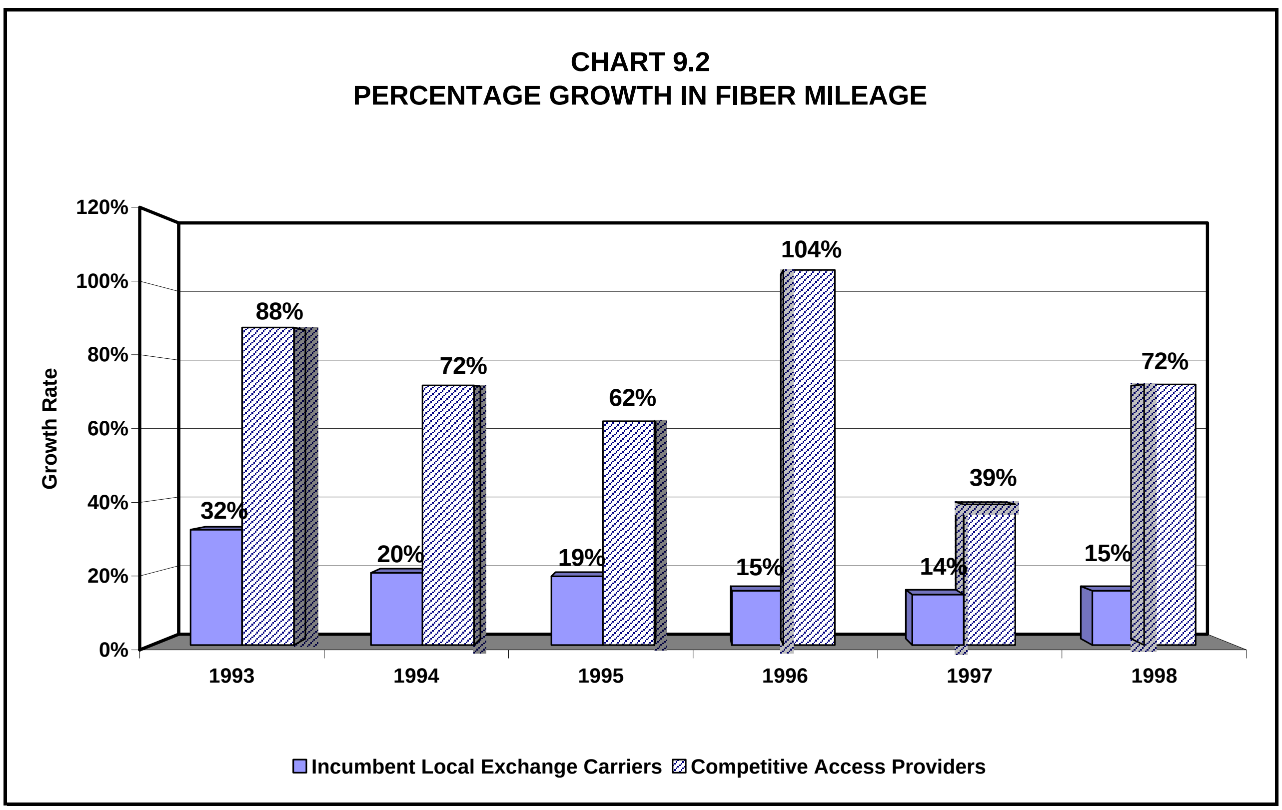
Historical data presented in Table 9.7 and in Chart 9.3 though Chart 9.5 have been revised from earlier publications. In previous reports, competitive local service providers, in addition to self-identifying as competitive local service providers, were assigned operating company numbers (OCNs) between 7000 and 8999, the range reserved by the National Exchange Carrier Association (NECA) for competitive local service providers. As a result of number depletion, NECA no longer restricts competitive local service provider OCNs to be between 7000 and 8999. All historical information has been revised, for consistency, to adhere to the self-identification standard alone.

4. Telephone Numbers Transferred Among Carriers

Table 9.8 presents publicly available information on telephone numbers transferred (or "ported") from one carrier to another. Over time, this information should provide insights into the number of customer lines served by competitors and also may ultimately provide information on other aspects of competition, such as customer churn among carriers.

Telephone numbers are transferred between local switches for a variety of reasons. Some telephone numbers are ported from one carrier to another as part of a telephone number conservation measure known as number pooling. Such quantities appear in the first set of columns of Table 9.8. Telephone numbers are also ported between carriers for other reasons, including, in particular, accommodating customers who switch local telephone service providers and wish to keep their same telephone numbers. Quantities of telephone numbers transferred between local telephone companies for reasons other than number pooling appear in the second set of columns. Almost 3 million such telephone numbers had been transferred by the end of October 1999. Finally, carriers sometimes port numbers to themselves, presumably to improve the utilization of telephone numbers assigned to their local telephone switches. Such quantities appear in the third set of columns.





Source: Industry Analysis Division, *Fiber Deployment Update* .

TABLE 9.1

NATIONWIDE LOCAL SERVICE REVENUES* AND NEW COMPETITOR SHARE

(Dollar Amounts Shown in Millions)

	TRS Data **					TRS & USF Data	
	1992	1993	1994	1995	1996	1997	1998
Number of Local Competitors							
RBOCs & Other Incumbent LECs		1,281	1,347	1,347	1,371	1,410	n.a.
CAPs & CLECs		20	30	57	94	129	355
Local Resellers, Shared Tenant, Private Carriers & Other Local **					25	18	59
Total		1,301	1,377	1,404	1,465	1,539	n.a.
Local Service Revenues ***							
Bell Operating Companies ****		$58,838	$61,415	$65,485	$70,290	$68,993	$70,927
Other Incumbent LECs ****		20,894	22,507	24,269	24,899	25,355	27,449
Total Incumbent LECs ****		79,732	83,922	89,754	95,189	94,347	98,376
CAPs & CLECs		174	269	595	949	1,581	2,438
Local Resellers, Shared Tenant, Private Carriers & Other Local *					N/A.	224	329
Other carriers (local exchange only)		46	32	56	59	381	809
Total	77,324	79,952	84,224	90,405	96,197	96,533	101,951
Share of Local Service Revenues							
Bell Operating Companies		73.6%	72.9%	72.4%	73.1%	71.5%	69.6%
Other Incumbent LECs		26.1%	26.7%	26.8%	25.9%	26.3%	26.9%
Total Incumbent LECs		99.7%	99.6%	99.3%	99.0%	97.7%	96.5%
CAPs & CLECs		0.2%	0.3%	0.7%	1.0%	1.6%	2.4%
Local Resellers, Shared Tenant, Private Carriers & Other Local						0.2%	0.3%
Other Carriers		0.1%	0.0%	0.1%	0.1%	0.4%	0.8%
Total Telecommunications Revenues (including local, mobile & toll service)							
Incumbent LECs ****	$91,584	$95,228	$98,431	$102,820	$107,905	$105,154	$108,234
Local Competitors	69	191	274	637	1,012	2,481	4,034
Ratio of Total Telecommunications Revenues, ILEC to Local Competitor	1336 : 1	498 : 1	351 : 1	165 : 1	107 : 1	42 : 1	27 : 1

Source: Universal Service and Telecommunications Relay Service worksheets.

* Some previously published data have been revised.

** Breakouts for local resellers, shared tenant, private carriers, and other local service providers were not available prior to 1996.

*** For 1993 through 1996, local service revenues include revenues from the following TRS reporting categories: local exchange, local private line, other local services, interstate access services and intrastate access services. The amounts shown do not include mobile or toll service revenue.

**** Incumbent LEC telecommunications revenues for 1996 and prior years include significant amounts of yellow pages, billing and collection and other revenues that were reported as other local service revenue. If these revenues were included in 1997, incumbent LECs would show significant revenue growth from 1996 to 1997.

TABLE 9.2
NATIONWIDE RESULTS: VOLUNTARY LOCAL COMPETITION SURVEYS

	As of 6/30/99	As of 12/31/98	As of 6/30/98	As of 12/31/97
Lines Provided by Large ILECs to CLECs for Resale of ILEC Services*:				
Resold Lines (in thousands)	3,583	3,062	2,448	1,743
Share of ILEC Switched Lines	2.1 %	1.9 %	1.5 %	1.1 %
Lines Provided by Large ILECs to CLECs Under UNE Arrangements:**				
UNE Loops (in thousands)	685	361	244	133
Share of ILEC Switched Lines	0.4 %	0.2 %	0.2 %	0.1 %
Type of Customers Served by Total Service Resale Lines Provided to CLECs by ILECs:				
Percent Serving Residential Customers	42 %	44 %	43 %	n.a.
Percent Serving Other Customers	58 %	56 %	57 %	n.a.
Share of ILEC Lines Served from Switching Centers with CLEC Collocation Arrangements:				
Share of Residential Customer Lines	55.7 %	42.2 %	25.3 %	23.3 %
Share of Other Customer Lines	67.9 %	58.3 %	44.1 %	41.4 %
Share of Total Lines	59.8 %	47.7 %	31.7 %	29.5 %

Source: Tables 9.3 through 9.6.

* Includes Total Service Resale and other resale.

** Includes the so-called UNE platform.

n.a. Comparable data not available.

TABLE 9.3
LINES PROVIDED BY LARGE ILECs TO CLECs FOR RESALE

STATE	TOTAL STATE LINES *(1998 USF Loops in thousands) +*	COMPANY	AS OF JUNE 30, 1999 TOTAL SWITCHED LINES *(thousands)*	TOTAL SERVICE RESALE *(thousands)*	PERCENT TSR	OTHER RESALE # *(thousands)*	PERCENT OTHER	AS OF DECEMBER 31, 1998 TOTAL SWITCHED LINES *(thousands)*	TOTAL SERVICE RESALE *(thousands)*	PERCENT TSR	OTHER RESALE # *(thousands)*	PERCENT OTHER
Alabama	2,465	*BellSouth*	1,998	56	2.8 %	n.a.	n.a. %	1,947	39	2.0 %	n.a.	n.a. %
Alaska	409											
Arizona	2,871	*U S WEST*	2,772	15	0.5	6	0.2	2,720	11	0.4	5	0.2
Arkansas	1,422	*SBC*	999	24	2.4	0	0.0	974	18	1.9	0	0.0
California	22,222	*GTE*	4,723	68	1.4	0	0.0	4,551	40	0.9	0	0.0
		SBC	17,999	269	1.5	0	0.0	18,110	261	1.4	0	0.0
Colorado	2,757	*U S WEST*	2,709	41	1.5	1	***	2,650	29	1.1	1	***
Connecticut	2,212	*SBC (SNET)*	2,183	38	1.8	13	0.6	2,148	36	1.7	11	0.5
Delaware	558	*Bell Atlantic*	590	10	1.7	n.a.	n.a.	569	10	1.8	n.a.	n.a.
Dist. Of Columbia	934	*Bell Atlantic*	931	14	1.5	n.a.	n.a.	945	11	1.2	n.a.	n.a.
Florida	10,958	*BellSouth*	6,666	127	1.9	n.a.	n.a.	6,487	112	1.7	n.a.	n.a.
		GTE	2,344	55	2.4	0	0.0	2,297	32	1.4	0	0.0
		Sprint	*	24	*	0	0.0	2,032	19	0.9	0	0.0
Georgia	5,005	*BellSouth*	4,286	122	2.9	n.a.	n.a.	4,143	105	2.5	n.a.	n.a.
Hawaii	718	*GTE*	743	**	***	0	0.0	717	**	***	0	0.0
Idaho	707	*U S WEST*	531	**	***	1	0.2	525	**	***	**	0.1
Illinois	8,209	*Ameritech*	7,097	174	2.4	12	0.2	7,078	196	2.8	15	0.2
		GTE	958	2	0.2	0	0.0	914	1	0.1	0	0.0
Indiana	3,589	*Ameritech*	2,250	19	0.9	1	***	2,225	16	0.7	1	0.1
		GTE	991	6	0.6	0	0.0	959	2	0.2	0	0.0
		Sprint	*	*	*	0	0.0	241	0	0.0	0	0.0
Iowa	1,641	*U S WEST*	1,105	86	7.8	37	3.4	1,077	8	0.8	108	10.1
Kansas	1,650	*SBC*	1,397	92	6.6	0	0.0	1,374	76	5.5	0	0.0
		Sprint	143	1	0.4	0	0.0	140	1	0.4	0	0.0
Kentucky	2,134	*BellSouth*	1,241	36	2.9	n.a.	n.a.	1,207	31	2.6	n.a.	n.a.
		GTE	559	4	0.7	0	0.0	543	2	0.4	0	0.0
Louisiana	2,529	*BellSouth*	2,501	93	3.7	n.a.	n.a.	2,418	82	3.4	n.a.	n.a.
Maine	825	*Bell Atlantic*	714	13	1.8	n.a.	n.a.	688	5	0.7	n.a.	n.a.
Maryland	3,636	*Bell Atlantic*	3,818	48	1.3	n.a.	n.a.	3,704	27	0.7	n.a.	n.a.
Massachusetts	4,514	*Bell Atlantic*	4,590	157	3.4	n.a.	n.a.	4,622	130	2.8	n.a.	n.a.
Michigan	6,414	*Ameritech*	5,500	103	1.9	10	0.2	5,439	119	2.2	11	0.2
		GTE	780	0	0.0	0	0.0	753	0	0.0	0	0.0
Minnesota	2,993	*Frontier*										
		Sprint	*	*	*	0	0.0	156	**	***	0	0.0
		U S WEST	2,323	105	4.5	5	0.2	2,284	65	2.8	26	1.2
Mississippi	1,370	*BellSouth*	1,336	53	4.0	n.a.	n.a.	1,296	44	3.4	n.a.	n.a.
Missouri	3,451	*SBC*	2,604	60	2.3	0	0.0	2,563	38	1.5	0	0.0
		Sprint	*	*	*	0	0.0	256	**	***	0	0.0
Montana	523	*U S WEST*	371	3	0.7	**	0.1	363	1	0.4	**	0.1
Nebraska	1,015	*U S WEST*	531	5	1.0	**	0.1	533	4	0.8	**	0.1
Nevada	1,278	*SBC*	356	5	1.3	0	0.0	354	3	1.0	0	0.0
		Sprint	*	*	*	0	0.0	879	8	0.9	0	0.0
New Hampshire	844	*Bell Atlantic*	808	30	3.7	n.a.	n.a.	795	20	2.5	n.a.	n.a.
New Jersey	6,475	*Bell Atlantic*	6,484	79	1.2	n.a.	n.a.	6,356	57	0.9	n.a.	n.a.
		Sprint	*	*	*	0	0.0	211	2	0.8	0	0.0
New Mexico	925	*U S WEST*	812	**	***	**	0.1	794	**	***	1	0.1

TABLE 9.3
LINES PROVIDED BY LARGE ILECs TO CLECs FOR RESALE

STATE	TOTAL STATE LINES *(1998 USF Loops in thousands) +*	COMPANY	AS OF JUNE 30, 1999					AS OF DECEMBER 31, 1998				
			TOTAL SWITCHED LINES *(thousands)*	TOTAL SERVICE RESALE *(thousands)*	PERCENT TSR	OTHER RESALE # *(thousands)*	PERCENT OTHER	TOTAL SWITCHED LINES *(thousands)*	TOTAL SERVICE RESALE *(thousands)*	PERCENT TSR	OTHER RESALE # *(thousands)*	PERCENT OTHER
New York	12,844	*Bell Atlantic Frontier*	11,835	313	2.6 %	n.a.	n.a. %	11,917	248	2.1 %	n.a.	n.a. %
North Carolina	4,942	*BellSouth*	2,533	47	1.9	n.a.	n.a.	2,452	36	1.5	n.a.	n.a.
		GTE	353	2	0.6	0	0.0	343	1	0.4	0	0.0
		Sprint	*	24	*	0	0.0	1,420	15	1.1	0	0.0
North Dakota	410	*U S WEST*	256	5	1.9	14	5.4	251	3	1.4	11	4.5
Ohio	6,885	*Ameritech*	4,145	67	1.6	22	0.5	4,118	77	1.9	26	0.6
		GTE	918	**	***	0	0.0	881	**	***	0	0.0
		Sprint	*	*	*	0	0.0	616	**	0.1	0	0.0
Oklahoma	2,018	*SBC*	1,664	48	2.9	0	0.0	1,650	40	2.4	0	0.0
Oregon	2,079	*GTE*	493	1	0.3	0	0.0	476	**	0.1	0	0.0
		U S WEST	1,395	11	0.8	47	3.4	1,372	7	0.5	47	3.5
Pennsylvania	8,212	*Bell Atlantic Frontier*	6,612	100	1.5	n.a.	n.a.	6,469	82	1.3	n.a.	n.a.
		GTE	685	4	0.6	0	0.0	653	1	0.1	0	0.0
		Sprint	*	*	*	0	0.0	385	1	0.1	0	0.0
Rhode Island	661	*Bell Atlantic*	673	12	1.8	n.a.	n.a.	663	7	1.1	n.a.	n.a.
South Carolina	2,248	*BellSouth*	1,514	60	4.0	n.a.	n.a.	1,471	58	3.9	n.a.	n.a.
		Sprint	103	2	1.8	0	0.0	99	1	1.3	0	0.0
South Dakota	418	*U S WEST*	283	11	3.9	12	4.2	276	10	3.7	8	3.1
Tennessee	3,369	*BellSouth*	2,749	42	1.5	n.a.	n.a.	2,684	36	1.3	n.a.	n.a.
		Sprint	259	2	0.9	0	0.0	255	2	0.7	0	0.0
Texas	12,617	*GTE*	2,027	27	1.3	0	0.0	1,968	19	1.0	0	0.0
		SBC	9,737	390	4.0	0	0.0	9,604	349	3.6	0	0.0
		Sprint	381	6	1.7	0	0.0	369	6	1.5	0	0.0
Utah	1,138	*U S WEST*	1,116	1	0.1	5	0.5	1,093	2	0.2	5	0.4
Vermont	402	*Bell Atlantic*	348	5	1.3	n.a.	n.a.	342	2	0.7	n.a.	n.a.
Virginia	4,575	*Bell Atlantic*	3,598	46	1.3	n.a.	n.a.	3,528	18	0.5	n.a.	n.a.
		GTE	623	1	0.1	0	0.0	591	0	0.0	0	0.0
		Sprint	409	1	0.3	0	0.0	401	1	0.2	0	0.0
Washington	3,663	*GTE*	898	6	0.7	0	0.0	861	1	0.1	0	0.0
		Sprint	87	0	0.0	0	0.0	85	0	0.0	0	0.0
		U S WEST	2,555	18	0.7	31	1.2	2,515	5	0.2	39	1.6
West Virginia	987	*Bell Atlantic*	838	1	0.2	n.a.	n.a.	831	**	***	n.a.	n.a.
Wisconsin	3,392	*Ameritech*	2,195	47	2.1	**	***	2,195	42	1.9	1	***
		GTE	532	0	0.0	0	0.0	501	0	0.0	0	0.0
Wyoming	290	*U S WEST*	249	2	0.8	10	3.8	242	2	0.8	6	2.4
Total lines publicly reported +	178,401		160,807	3,339	2.1 %	229	0.1 %	164,614	2,738	1.7 %	324	0.2 %
Lines withheld to maintain confidentiality	0		6,371	14	n.m.	0	n.m.	0	0	n.m.	0	n.m.
Total lines +	178,401		167,177	3,354	2.0 %	229	0.1 %	164,614	2,738	1.7 %	324	0.2 %
Holding Company Summary		Ameritech	21,187	409	1.9 %	45	0.2 %	21,054	450	2.1 %	54	0.3 %
(for states reported above)		Bell Atlantic	41,840	827	2.0	n.a.	n.a.	41,429	619	1.5	n.a.	n.a.
		BellSouth	24,824	638	2.6	n.a.	n.a.	24,104	543	2.3	n.a.	n.a.
		GTE	17,628	176	1.0	0	0.0	17,008	100	0.6	0	0.0
		SBC	36,938	925	2.5	13	***	36,778	823	2.2	11	***
		Sprint	7,752	74	1.0	0	0.0	7,545	54	0.7	0	0.0
		U S WEST	17,008	304	1.8	171	1.0	16,695	149	0.9	259	1.6

Source: Industry Analysis Division, *Local Competition: August 1999* and fifth voluntary local competition survey.

Notes: TSR Total Service Resale; # Resale other than TSR; ## Data may include non-TSR resale; n.a. Not available; * Withheld to maintain confidentiality as requested by reporting company; ** Fewer than 500 lines; *** Less than 0.05%; n.m. Not meaningful (withheld lines include UNE loops); + Total lines are sums only for the companies listed in the table, except that values in the column labeled "Total State Lines (1998 USF Loops)" are for all incumbent telephone companies; & SBC data include an unreliable count of UNE loops; Ameritech data appear to include unexplained lines not counted in later two surveys.

TABLE 9.3
LINES PROVIDED BY LARGE ILECs TO CLECs FOR RESALE

STATE	TOTAL STATE LINES *(1998 USF Loops in thousands)* +	COMPANY	AS OF SEPTEMBER 30, 1998 TOTAL SWITCHED LINES *(thousands)*	TOTAL SERVICE RESALE *(thousands)*	PERCENT TSR	OTHER RESALE # *(thousands)*	PERCENT OTHER	AS OF JUNE 30, 1998 TOTAL SWITCHED LINES *(thousands)*	TOTAL SERVICE RESALE ## *(thousands)*	PERCENT TSR	AS OF DECEMBER 31, 1997 TOTAL SWITCHED LINES *(thousands)*	TOTAL SERVICE RESALE ## *(thousands)*	PERCENT TSR
Alabama	2,465	*BellSouth*	1,892	34	1.8 %	n.a.	n.a. %	1,881	25	1.3 %	*	15	* %
Alaska	409												
Arizona	2,871	*U S WEST*	2,619	6	0.2	5	0.2	2,615	4	0.2	*	1	*
Arkansas	1,422	*SBC*	967	17	1.8	0	0.0	958	15	1.5	*	8	*
California	22,222	*GTE*	4,498	51	1.1	0	0.0	4,443	39	0.9	4,394	26	0.6
		SBC	17,646	252	1.4	0	0.0	17,792 &	251	1.4	*	252	*
Colorado	2,757	*U S WEST*	2,556	22	0.8	1	***	2,583	16	0.6	2,554	8	0.3
Connecticut	2,212	*SBC (SNET)*	2,133	34	1.6	15	0.7	2,137	31	1.5	2,120	28	1.3
Delaware	558	*Bell Atlantic*	565	10	1.8	n.a.	n.a.	557	7	1.3	*	*	*
Dist. Of Columbia	934	*Bell Atlantic*	946	11	1.1	n.a.	n.a.	935	7	0.7	*	3	*
Florida	10,958	*BellSouth*	6,376	103	1.6	n.a.	n.a.	6,297	95	1.5	6,231	67	1.1
		GTE	2,264	37	1.6	0	0.0	2,240	28	1.3	2,232	12	0.5
		Sprint	1,994	15	0.8	n.a.	n.a.	1,983	15	0.8	1,931	9	0.4
Georgia	5,005	*BellSouth*	4,089	99	2.4	n.a.	n.a.	4,028	89	2.2	4,003	62	1.5
Hawaii	718	*GTE*	703	**	***	0	0.0	712	**	***	711	**	***
Idaho	707	*U S WEST*	500	**	***	**	***	470	**	***	493	**	***
Illinois	8,209	*Ameritech*	7,022	205	2.9	16	0.2	7,313 &	221	3.0	6,851	172	2.5
		GTE	901	1	0.1	0	0.0	895	**	***	882	0	0.0
Indiana	3,589	*Ameritech*	2,207	12	0.5	1	0.1	2,236 &	8	0.4	2,167	**	***
		GTE	930	1	0.1	0	0.0	932	**	***	922	0	0.0
		Sprint	240	0	0.0	n.a.	n.a.	240	0	0.0	234	0	0.0
Iowa	1,641	*U S WEST*	1,057	3	0.3	84	8.0	1,060	99	9.3	1,049	82	7.8
Kansas	1,650	*SBC*	1,365	62	4.5	0	0.0	1,348	50	3.7	*	29	*
		Sprint	*	*	*	n.a.	n.a.	140	**	0.4	*	*	*
Kentucky	2,134	*BellSouth*	1,193	28	2.3	n.a.	n.a.	1,184	20	1.7	*	8	*
		GTE	528	1	0.2	0	0.0	531	1	0.2	524	**	0.1
Louisiana	2,529	*BellSouth*	2,336	61	2.6	n.a.	n.a.	2,303	44	1.9	2,256	16	0.7
Maine	825	*Bell Atlantic*	678	1	0.2	n.a.	n.a.	677	2	0.3	681	**	***
Maryland	3,636	*Bell Atlantic*	3,677	22	0.6	n.a.	n.a.	3,638	11	0.3	*	2	*
Massachusetts	4,514	*Bell Atlantic*	4,434	96	2.2	n.a.	n.a.	4,396	85	1.9	4,517	41	0.9
Michigan	6,414	*Ameritech*	5,403	137	2.5	11	0.2	5,608 &	168	3.0	5,341	151	2.8
		GTE	744	0	0.0	0	0.0	739	0	0.0	725	0	0.0
Minnesota	2,993	*Frontier*	*	*	*	0	0.0						
		Sprint	155	0	0.0	n.a.	n.a.	153	0	0.0	148	0	0.0
		U S WEST	2,199	51	2.3	22	1.0	2,202	55	2.5	2,199	30	1.4
Mississippi	1,370	*BellSouth*	1,252	32	2.6	n.a.	n.a.	1,248	27	2.2	*	13	*
Missouri	3,451	*SBC*	2,543	30	1.2	0	0.0	2,527	23	0.9	*	5	*
		Sprint	*	*	*	n.a.	n.a.	*	*	*	246	0	0.0
Montana	523	*U S WEST*	355	1	0.2	**	***	356	1	0.1	355	**	0.1
Nebraska	1,015	*U S WEST*	523	2	0.4	**	***	533	1	0.2	*	*	*
Nevada	1,278	*SBC*	331	2	0.6	0	0.0	340	2	0.5	*	3	*
		Sprint	*	6	*	n.a.	n.a.	*	*	*	*	5	*
New Hampshire	844	*Bell Atlantic*	792	7	0.9	n.a.	n.a.	771	9	1.1	*	*	*
New Jersey	6,475	*Bell Atlantic*	6,293	40	0.6	n.a.	n.a.	6,239	27	0.4	*	6	*
		Sprint	*	*	*	n.a.	n.a.	*	*	*	197	0	0.0
New Mexico	925	*U S WEST*	775	**	***	**	***	778	**	***	*	**	*

TABLE 9.3
LINES PROVIDED BY LARGE ILECs TO CLECs FOR RESALE

STATE	TOTAL STATE LINES (1998 USF Loops in thousands) +	COMPANY	AS OF SEPTEMBER 30, 1998 TOTAL SWITCHED LINES (thousands)	TOTAL SERVICE RESALE (thousands)	PERCENT TSR	OTHER RESALE # (thousands)	PERCENT OTHER	AS OF JUNE 30, 1998 TOTAL SWITCHED LINES (thousands)	TOTAL SERVICE RESALE ## (thousands)	PERCENT TSR	AS OF DECEMBER 31, 1997 TOTAL SWITCHED LINES (thousands)	TOTAL SERVICE RESALE ## (thousands)	PERCENT TSR
New York	12,844	*Bell Atlantic*	11,595	244	2.1 %	n.a.	n.a. %	11,573	199	1.7 %	*	121	* %
		Frontier	*	*	*	0	0.0				540	105	19.4
North Carolina	4,942	*BellSouth*	2,413	30	1.2	n.a.	n.a.	2,368	24	1.0	2,322	8	0.3
		GTE	330	1	0.2	0	0.0	334	1	0.2	333	**	0.1
		Sprint	1,407	11	0.8	n.a.	n.a.	1,399	7	0.5	*	*	*
North Dakota	410	*U S WEST*	248	3	1.0	9	3.8	248	10	3.9	253	2	0.9
Ohio	6,885	*Ameritech*	4,090	83	2.0	28	0.7	4,211 &	107	2.5	4,020	59	1.5
		GTE	860	**	***	0	0.0	860	**	***	846	0	0.0
		Sprint	*	*	*	n.a.	n.a.	*	*	*	594	0	0.0
Oklahoma	2,018	*SBC*	1,644	34	2.1	0	0.0	1,631	21	1.3	*	9	*
Oregon	2,079	*GTE*	466	**	***	0	0.0	463	**	***	462	0	0.0
		U S WEST	1,337	5	0.4	44	3.3	1,346	45	3.4	1,353	37	2.8
Pennsylvania	8,212	*Bell Atlantic*	6,432	91	1.4	n.a.	n.a.	6,358	71	1.1	*	30	*
		Frontier	*	*	*	0	0.0						
		GTE	640	**	***	0	0.0	642	**	***	635	0	0.0
		Sprint	*	*	*	n.a.	n.a.	376	**	0.1	*	*	*
Rhode Island	661	*Bell Atlantic*	653	3	0.4	n.a.	n.a.	650	4	0.6	*	*	*
South Carolina	2,248	*BellSouth*	1,448	50	3.4	n.a.	n.a.	1,416	29	2.1	1,399	13	0.9
		Sprint	99	1	1.0	n.a.	n.a.	99	1	0.9	*	*	*
South Dakota	418	*U S WEST*	272	7	2.6	6	2.3	271	12	4.3	268	4	1.4
Tennessee	3,369	*BellSouth*	2,641	26	1.0	n.a.	n.a.	2,622	23	0.9	2,614	14	0.6
		Sprint	252	1	0.5	n.a.	n.a.	251	1	0.3	*	*	*
Texas	12,617	*GTE*	1,933	19	1.0	0	0.0	1,893	13	0.7	1,861	10	0.6
		SBC	9,545	316	3.3	0	0.0	9,435	283	3.0	*	215	*
		Sprint	366	5	1.3	n.a.	n.a.	370	4	1.1	356	2	0.6
Utah	1,138	*U S WEST*	1,063	1	0.1	4	0.4	1,069	6	0.5	*	5	*
Vermont	402	*Bell Atlantic*	339	1	0.3	n.a.	n.a.	333	1	0.2	335	0	0.0
Virginia	4,575	*Bell Atlantic*	3,494	17	0.5	n.a.	n.a.	3,452	9	0.3	*	4	*
		GTE	581	0	0.0	0	0.0	574	**	***	563	**	***
		Sprint	*	**	*	n.a.	n.a.	*	**	*	385	0	0.0
Washington	3,663	*GTE*	842	1	0.1	0	0.0	833	**	***	829	**	***
		Sprint	84	0	0.0	n.a.	n.a.	84	0	0.0	82	0	0.0
		U S WEST	2,457	4	0.1	41	1.7	2,470	46	1.9	2,401	32	1.3
West Virginia	987	*Bell Atlantic*	828	0	0.0	n.a.	n.a.	820	0	0.0	803	0	0.0
Wisconsin	3,392	*Ameritech*	2,259	37	1.7	5	0.2	2,296 &	49	2.1	2,211	14	0.6
		GTE	494	**	***	0	0.0	490	**	***	480	**	***
Wyoming	290	*U S WEST*	238	2	0.8	3	1.2	241	1	0.5	*	*	*
Total lines publicly reported +	178,401		159,030	2,484	1.6 %	296	0.2 %	159,500	2,443	1.5 %	77,504	1,741	n.m.
Lines withheld to maintain confidentiality	0		3,552	108	n.m.	0	n.m.	2,310	5	n.m.	81,504	3	n.m.
Total lines +	178,401		162,581	2,593	1.6 %	296	0.2 %	161,810	2,448	1.5 %	159,008	1,743	1.1 %
Holding Company Summary		Ameritech	20,981	474	2.3 %	61	0.3 %	21,665	552	2.5 %	20,589	396	1.9 %
(for states reported above)		Bell Atlantic	40,727	544	1.3	n.a.	n.a.	40,401	432	1.1	39,402	210	0.5
		BellSouth	23,640	462	2.0	n.a.	n.a.	23,347	376	1.6	23,154	216	0.9
		GTE	16,714	112	0.7	0	0.0	16,582	83	0.5	16,398	49	0.3
		SBC	36,173	747	2.1	15	***	36,168	676	1.9	35,612	550	1.5
		Sprint	7,451	42	0.6	n.a.	n.a.	7,406	33	0.4	7,182	17	0.2
		U S WEST	16,198	106	0.7	220	1.4	16,242	296	1.8	16,130	202	1.3

Source: Industry Analysis Division, *Local Competition: August 1999* and fifth voluntary local competition survey.
Notes: TSR Total Service Resale; # Resale other than TSR; ## Data may include non-TSR resale; n.a. Not available; * Withheld to maintain confidentiality as requested by reporting company; ** Fewer than 500 lines; *** Less than 0.05%; n.m. Not meaningful (withheld lines include UNE loops); + Total lines are sums only for the companies listed in the table, except that values in the column labeled "Total State Lines (1998 USF Loops)" are for all incumbent telephone companies; & SBC data include an unreliable count of UNE loops; Ameritech data appear to include unexplained lines not counted in later two surveys.

TABLE 9.4
LINES PROVIDED BY LARGE ILECs TO CLECs UNDER UNE ARRANGEMENTS

STATE	TOTAL STATE LINES *(1998 USF Loops in thousands) +*	COMPANY	AS OF JUNE 30, 1999 TOTAL SWITCHED LINES *(thousands)*	UNE LOOPS *(thousands)*	PERCENT UNE	AS OF DECEMBER 31, 1998 TOTAL SWITCHED LINES *(thousands)*	UNE LOOPS *(thousands)*	PERCENT UNE	AS OF SEPTEMBER 30, 1998 TOTAL SWITCHED LINES *(thousands)*	UNE LOOPS *(thousands)*	PERCENT UNE
Alabama	2,465	*BellSouth*	1,998	4	0.2 %	1,947	2	0.1 %	1,892	1	0.1 %
Alaska	409										
Arizona	2,871	*U S WEST*	2,772	2	0.1	2,720	1	0.1	2,619	1	0.1
Arkansas	1,422	*SBC*	999	5	0.5	974	3	0.3	967	2	0.2
California	22,222	*GTE*	4,723	13	0.3	4,551	6	0.1	4,498	2	***
		SBC	17,999	99	0.6	18,110	47	0.3	17,646	34	0.2
Colorado	2,757	*U S WEST*	2,709	1	***	2,650	**	***	2,556	**	***
Connecticut	2,212	*SBC (SNET)*	2,183	3	0.1	2,148	3	0.1	2,133	3	0.1
Delaware	558	*Bell Atlantic*	590	8	1.3	569	3	0.5	565	2	0.3
Dist. Of Columbia	934	*Bell Atlantic*	931	1	0.1	945	1	0.1	946	**	***
Florida	10,958	*BellSouth*	6,666	10	0.2	6,487	4	0.1	6,376	3	***
		GTE	2,344	**	***	2,297	**	***	2,264	0	0.0
		Sprint	*	*	*	2,032	**	***	1,994	0	0.0
Georgia	5,005	*BellSouth*	4,286	27	0.6	4,143	9	0.2	4,089	5	0.1
Hawaii	718	*GTE*	743	**	0.1	717	**	***	703	0	0.0
Idaho	707	*U S WEST*	531	0	0.0	525	0	0.0	500	0	0.0
Illinois	8,209	*Ameritech*	7,097	39	0.5	7,078	20	0.3	7,022	16	0.2
		GTE	958	**	***	914	0	0.0	901	0	0.0
Indiana	3,589	*Ameritech*	2,250	6	0.2	2,225	**	***	2,207	**	***
		GTE	991	**	***	959	0	0.0	930	0	0.0
		Sprint	*	0	0.0	241	0	0.0	240	0	0.0
Iowa	1,641	*U S WEST*	1,105	**	***	1,077	**	***	1,057	0	0.0
Kansas	1,650	*SBC*	1,397	1	***	1,374	**	***	1,365	**	***
		Sprint	143	0	0.0	140	0	0.0	*	0	0.0
Kentucky	2,134	*BellSouth*	1,241	2	0.1	1,207	1	0.1	1,193	1	***
		GTE	559	**	***	543	**	***	528	**	***
Louisiana	2,529	*BellSouth*	2,501	3	0.1	2,418	1	***	2,336	1	***
Maine	825	*Bell Atlantic*	714	**	***	688	**	***	678	**	***
Maryland	3,636	*Bell Atlantic*	3,818	3	0.1	3,704	2	***	3,677	2	0.1
Massachusetts	4,514	*Bell Atlantic*	4,590	6	0.1	4,622	3	0.1	4,434	3	0.1
Michigan	6,414	*Ameritech*	5,500	55	1.0	5,439	48	0.9	5,403	43	0.8
		GTE	780	0	0.0	753	0	0.0	744	0	0.0
Minnesota	2,993	*Frontier*							*	0	0.0
		Sprint	*	0	0.0	156	0	0.0	155	0	0.0
		U S WEST	2,323	6	0.3	2,284	2	0.1	2,199	1	***
Mississippi	1,370	*BellSouth*	1,336	2	0.2	1,296	2	0.1	1,252	1	0.1
Missouri	3,451	*SBC*	2,604	3	0.1	2,563	2	0.1	2,543	2	0.1
		Sprint	*	0	0.0	256	0	0.0	*	0	0.0
Montana	523	*U S WEST*	371	**	0.1	363	**	***	355	0	0.0
Nebraska	1,015	*U S WEST*	531	1	0.3	533	**	0.1	523	**	***
Nevada	1,278	*SBC*	356	5	1.3	354	4	1.2	331	4	1.2
		Sprint	*	*	*	879	29	3.3	*	*	*
New Hampshire	844	*Bell Atlantic*	808	**	0.1	795	**	***	792	**	***
New Jersey	6,475	*Bell Atlantic*	6,484	3	***	6,356	1	***	6,293	**	***
		Sprint	*	0	0.0	211	0	0.0	*	0	0.0
New Mexico	925	*U S WEST*	812	2	0.3	794	2	0.3	775	2	0.3

TABLE 9.4
LINES PROVIDED BY LARGE ILECs TO CLECs UNDER UNE ARRANGEMENTS

STATE	TOTAL STATE LINES *(1998 USF Loops in thousands)* +	COMPANY	AS OF JUNE 30, 1999: TOTAL SWITCHED LINES *(thousands)*	AS OF JUNE 30, 1999: UNE LOOPS *(thousands)*	AS OF JUNE 30, 1999: PERCENT UNE	AS OF DECEMBER 31, 1998: TOTAL SWITCHED LINES *(thousands)*	AS OF DECEMBER 31, 1998: UNE LOOPS *(thousands)*	AS OF DECEMBER 31, 1998: PERCENT UNE	AS OF SEPTEMBER 30, 1998: TOTAL SWITCHED LINES *(thousands)*	AS OF SEPTEMBER 30, 1998: UNE LOOPS *(thousands)*	AS OF SEPTEMBER 30, 1998: PERCENT UNE
New York	12,844	*Bell Atlantic*	11,835	138	1.2 %	11,917	49	0.4 %	11,595	44	0.4 %
		Frontier							*	0	0.0
North Carolina	4,942	*BellSouth*	2,533	7	0.3	2,452	2	0.1	2,413	1	***
		GTE	353	**	***	343	**	***	330	0	0.0
		Sprint	*	*	*	1,420	0	0.0	1,407	0	0.0
North Dakota	410	*U S WEST*	256	1	0.2	251	**	0.1	248	0	0.0
Ohio	6,885	*Ameritech*	4,145	36	0.9	4,118	24	0.6	4,090	19	0.5
		GTE	918	0	0.0	881	0	0.0	860	0	0.0
		Sprint	*	0	0.0	616	0	0.0	*	0	0.0
Oklahoma	2,018	*SBC*	1,664	2	0.1	1,650	2	0.1	1,644	2	0.1
Oregon	2,079	*GTE*	493	**	***	476	1	0.2	466	0	0.0
		U S WEST	1,395	1	***	1,372	**	***	1,337	**	***
Pennsylvania	8,212	*Bell Atlantic*	6,612	47	0.7	6,469	30	0.5	6,432	26	0.4
		Frontier							*	0	0.0
		GTE	685	**	***	653	**	***	640	**	***
		Sprint	*	0	0.0	385	0	0.0	*	0	0.0
Rhode Island	661	*Bell Atlantic*	673	2	0.3	663	1	0.2	653	2	0.3
South Carolina	2,248	*BellSouth*	1,514	2	0.1	1,471	1	***	1,448	**	***
		Sprint	103	0	0.0	99	0	0.0	99	0	0.0
South Dakota	418	*U S WEST*	283	0	0.0	276	0	0.0	272	0	0.0
Tennessee	3,369	*BellSouth*	2,749	29	1.0	2,684	21	0.8	2,641	17	0.6
		Sprint	259	0	0.0	255	0	0.0	252	0	0.0
Texas	12,617	*GTE*	2,027	19	1.0	1,968	16	0.8	1,933	12	0.6
		SBC	9,737	20	0.2	9,604	7	0.1	9,545	3	***
		Sprint	381	0	0.0	369	0	0.0	366	0	0.0
Utah	1,138	*U S WEST*	1,116	2	0.2	1,093	1	0.1	1,063	1	0.1
Vermont	402	*Bell Atlantic*	348	**	***	342	**	***	339	0	0.0
Virginia	4,575	*Bell Atlantic*	3,598	2	0.1	3,528	1	***	3,494	1	***
		GTE	623	**	***	591	0	0.0	581	0	0.0
		Sprint	409	1	0.3	401	1	0.1	*	*	*
Washington	3,663	*GTE*	898	**	***	861	0	0.0	842	0	0.0
		Sprint	87	0	0.0	85	0	0.0	84	0	0.0
		U S WEST	2,555	2	0.1	2,515	**	***	2,457	**	***
West Virginia	987	*Bell Atlantic*	838	0	0.0	831	0	0.0	828	0	0.0
Wisconsin	3,392	*Ameritech*	2,195	19	0.9	2,195	7	0.3	2,259	3	0.1
		GTE	532	1	0.3	501	**	0.1	494	**	0.1
Wyoming	290	*U S WEST*	249	0	0.0	242	0	0.0	238	0	0.0
Total lines publicly reported	178,401		160,807	643	0.4 %	164,614	361	0.2 %	159,030	258	0.2 %
Lines withheld to maintain confidentiality	0		6,371	42	n.m.	0	0	n.m.	3,552	24	n.m.
Total lines	178,401		167,177	685	0.4 %	164,614	361	0.2 %	162,581	282	0.2 %
Holding Company Summary		Ameritech	21,187	155	0.7 %	21,054	100	0.5 %	20,981	80	0.4 %
(for states reported above)		Bell Atlantic	41,840	211	0.5	41,429	91	0.2	40,727	81	0.2
		BellSouth	24,824	86	0.3	24,104	41	0.2	23,640	29	0.1
		GTE	17,628	35	0.2	17,008	23	0.1	16,714	14	0.1
		SBC	36,938	138	0.4	36,778	67	0.2	36,173	49	0.1
		Sprint	7,752	43	0.6	7,545	30	0.4	7,451	*	*
		U S WEST	17,008	18	0.1	16,695	8	***	16,198	5	***

Source: Industry Analysis Division, *Local Competition: August 1999* and fifth voluntary local competition survey.

Notes: * Withheld to maintain confidentiality as requested by reporting company; ** Fewer than 500 lines; *** Less than 0.05%; + Total lines are sums only for the companies listed in the table, except that values in the column labeled "Total State Lines (1998 USF Loops)" are for all incumbent telephone companies; n.m. Not meaningful; & SBC data include an unreliable count of UNE loops; Ameritech data appear to include unexplained lines not counted in later two surveys.

TABLE 9.4
LINES PROVIDED BY LARGE ILECs TO CLECs UNDER UNE ARRANGEMENTS

STATE	TOTAL STATE LINES *(1998 USF Loops in thousands) +*	COMPANY	AS OF JUNE 30, 1998 TOTAL SWITCHED LINES *(thousands)*	UNE LOOPS *(thousands)*	PERCENT UNE	AS OF DECEMBER 31, 1997 TOTAL SWITCHED LINES *(thousands)*	UNE LOOPS *(thousands)*	PERCENT UNE
Alabama	2,465	*BellSouth*	1,881	1	*** %	*	*	* %
Alaska	409							
Arizona	2,871	*U S WEST*	2,615	1	***	*	*	*
Arkansas	1,422	*SBC*	958	**	***	*	*	*
California	22,222	*GTE*	4,443	1	***	4,394	**	***
		SBC	17,792 &	n.m. &	n.m. &	*	*	*
Colorado	2,757	*U S WEST*	2,583	**	***	2,554	0	0.0
Connecticut	2,212	*SBC (SNET)*	2,137	3	0.1	2,120	2	0.1
Delaware	558	*Bell Atlantic*	557	1	0.1	*	*	*
Dist. Of Columbia	934	*Bell Atlantic*	935	**	***	*	*	*
Florida	10,958	*BellSouth*	6,297	3	***	6,231	2	***
		GTE	2,240	0	0.0	2,232	**	***
		Sprint	1,983	0	0.0	1,931	0	0.0
Georgia	5,005	*BellSouth*	4,028	2	***	4,003	1	***
Hawaii	718	*GTE*	712	0	0.0	711	**	***
Idaho	707	*U S WEST*	470	0	0.0	493	0	0.0
Illinois	8,209	*Ameritech*	7,313 &	14	0.2	6,851	13	0.2
		GTE	895	0	0.0	882	0	0.0
Indiana	3,589	*Ameritech*	2,236 &	0	0.0	2,167	0	0.0
		GTE	932	0	0.0	922	0	0.0
		Sprint	240	0	0.0	234	0	0.0
Iowa	1,641	*U S WEST*	1,060	0	0.0	1,049	0	0.0
Kansas	1,650	*SBC*	1,348	**	***	*	*	*
		Sprint	140	0	0.0	*	0	0.0
Kentucky	2,134	*BellSouth*	1,184	**	***	*	*	*
		GTE	531	0	0.0	524	0	0.0
Louisiana	2,529	*BellSouth*	2,303	**	***	2,256	0	0.0
Maine	825	*Bell Atlantic*	677	**	***	681	0	0.0
Maryland	3,636	*Bell Atlantic*	3,638	2	0.1	*	*	*
Massachusetts	4,514	*Bell Atlantic*	4,396	3	0.1	4,517	2	***
Michigan	6,414	*Ameritech*	5,608 &	38	0.7	5,341	25	0.5
		GTE	739	0	0.0	725	0	0.0
Minnesota	2,993	*Frontier*						
		Sprint	153	0	0.0	148	0	0.0
		U S WEST	2,202	**	***	2,199	0	0.0
Mississippi	1,370	*BellSouth*	1,248	1	0.1	*	*	*
Missouri	3,451	*SBC*	2,527	2	0.1	*	*	*
		Sprint	*	0	0.0	246	0	0.0
Montana	523	*U S WEST*	356	0	0.0	355	0	0.0
Nebraska	1,015	*U S WEST*	533	0	0.0	*	0	0.0
Nevada	1,278	*SBC*	340	4	1.1	*	*	*
		Sprint	*	*	*	*	*	*
New Hampshire	844	*Bell Atlantic*	771	**	***	*	0	0.0
New Jersey	6,475	*Bell Atlantic*	6,239	**	***	*	*	*
		Sprint	*	0	0.0	197	0	0.0
New Mexico	925	*U S WEST*	778	2	0.2	*	*	*

TABLE 9.4
LINES PROVIDED BY LARGE ILECs TO CLECs UNDER UNE ARRANGEMENTS

STATE	TOTAL STATE LINES *(1998 USF Loops in thousands) +*	COMPANY	AS OF JUNE 30, 1998: TOTAL SWITCHED LINES *(thousands)*	AS OF JUNE 30, 1998: UNE LOOPS *(thousands)*	AS OF JUNE 30, 1998: PERCENT UNE	AS OF DECEMBER 31, 1997: TOTAL SWITCHED LINES *(thousands)*	AS OF DECEMBER 31, 1997: UNE LOOPS *(thousands)*	AS OF DECEMBER 31, 1997: PERCENT UNE
New York	12,844	*Bell Atlantic*	11,573	31	0.3 %	*	*	* %
		Frontier				540	0	0.0
North Carolina	4,942	*BellSouth*	2,368	0	0.0	2,322	0	0.0
		GTE	334	0	0.0	333	**	***
		Sprint	1,399	0	0.0	*	0	0.0
North Dakota	410	*U S WEST*	248	0	0.0	253	0	0.0
Ohio	6,885	*Ameritech*	4,211 &	16	0.4	4,020	7	0.2
		GTE	860	0	0.0	846	0	0.0
		Sprint	*	0	0.0	594	0	0.0
Oklahoma	2,018	*SBC*	1,631	1	0.1	*	*	*
Oregon	2,079	*GTE*	463	0	0.0	462	**	***
		U S WEST	1,346	**	***	1,353	0	0.0
Pennsylvania	8,212	*Bell Atlantic*	6,358	20	0.3	*	*	*
		Frontier						
		GTE	642	**	***	635	0	0.0
		Sprint	376	0	0.0	*	0	0.0
Rhode Island	661	*Bell Atlantic*	650	2	0.3	*	*	*
South Carolina	2,248	*BellSouth*	1,416	**	***	1,399	0	0.0
		Sprint	99	0	0.0	*	0	0.0
South Dakota	418	*U S WEST*	271	0	0.0	268	0	0.0
Tennessee	3,369	*BellSouth*	2,622	13	0.5	2,614	5	0.2
		Sprint	251	0	0.0	*	0	0.0
Texas	12,617	*GTE*	1,893	8	0.4	1,861	7	0.4
		SBC	9,435	**	***	*	*	*
		Sprint	370	0	0.0	356	0	0.0
Utah	1,138	*U S WEST*	1,069	**	***	*	*	*
Vermont	402	*Bell Atlantic*	333	0	0.0	335	0	0.0
Virginia	4,575	*Bell Atlantic*	3,452	1	***	*	*	*
		GTE	574	0	0.0	563	0	0.0
		Sprint	*	*	*	385	0	0.0
Washington	3,663	*GTE*	833	0	0.0	829	0	0.0
		Sprint	84	0	0.0	82	0	0.0
		U S WEST	2,470	**	***	2,401	*	*
West Virginia	987	*Bell Atlantic*	820	0	0.0	803	0	0.0
Wisconsin	3,392	*Ameritech*	2,296 &	1	***	2,211	**	***
		GTE	490	**	0.1	480	**	***
Wyoming	290	*U S WEST*	241	0	0.0	*	0	0.0
Total lines publicly reported	178,401		159,500	224	0.1 %	77,504	65	n.m.
Lines withheld to maintain confidentiality	0		2,310	20	n.m.	81,504	68	n.m.
Total lines	178,401		161,810	244	0.2 %	159,008	133	0.1 %
Holding Company Summary (for states reported above)		Ameritech	21,665	69	0.3 %	20,589	45	0.2 %
		Bell Atlantic	40,401	61	0.1	39,402	38	0.1
		BellSouth	23,347	20	0.1	23,154	9	***
		GTE	16,582	9	0.1	16,398	7	***
		SBC	36,168 &	n.m. &	n.m. &	35,612	21	0.1
		Sprint	7,406	*	*	7,182	11	0.2
		U S WEST	16,242	3	***	16,130	1	***

Source: Industry Analysis Division, *Local Competition: August 1999* and fifth voluntary local competition survey.

Notes: * Withheld to maintain confidentiality as requested by reporting company; ** Fewer than 500 lines; *** Less than 0.05%; + Total lines are sums only for the companies listed in the table, except that values in the column labeled "Total State Lines (1998 USF Loops)" are for all incumbent telephone companies; n.m. Not meaningful; & SBC data include an unreliable count of UNE loops; Ameritech data appear to include unexplained lines not counted in later two surveys.

TABLE 9.5
CLEC RESIDENTIAL AND OTHER CUSTOMERS SERVED BY ILEC
TOTAL SERVICE RESALE (TSR) LINES

STATE	COMPANY	COMPANY SWITCHED LINES 06/30/1999 (thousands)	AS OF JUNE 30, 1999 TSR LINES (thousands) RES.	OTHER	TOTAL	PERCENT RES.	OTHER	AS OF DECEMBER 31, 1998 TSR LINES (thousands) RES.	OTHER	TOTAL	PERCENT RES.	OTHER
Alabama	*BellSouth*	1,998	33	24	56	58 %	42 %	19	19	39	50 %	50 %
Alaska												
Arizona	*U S WEST*	2,772	11	4	15	72	28	8	3	11	75	25
Arkansas	*SBC*	999	19	5	24	79	21	15	3	18	83	17
California	*GTE*	4,723	54	14	68	79	21	29	11	40	72	28
	SBC	17,999	133	136	269	49	51	126	134	261	48	52
Colorado	*U S WEST*	2,709	6	35	41	15	85	4	25	29	13	87
Connecticut	*SBC (SNET)*	2,183	18	20	38	48	52	20	17	36	54	46
Delaware	*Bell Atlantic*	590	6	3	10	64	36	8	3	10	75	25
Dist. Of Columbia	*Bell Atlantic*	931	3	11	14	23	77	2	9	11	19	81
Florida	*BellSouth*	6,666	45	82	127	36	64	40	72	112	36	64
	GTE	2,344	38	17	55	69	31	19	14	32	58	42
	Sprint	*	9	15	24	38	62	8	11	19	40	60
Georgia	*BellSouth*	4,286	75	47	122	61	39	63	42	105	60	40
Hawaii	*GTE*	743	**	**	**	75	25	**	**	**	81	19
Idaho	*U S WEST*	531	**	**	**	36	64	**	**	**	65	35
Illinois	*Ameritech*	7,097	76	98	174	44	56	84	112	196	43	57
	GTE	958	0	2	2	0	100	0	1	1	0	100
Indiana	*Ameritech*	2,250	8	11	19	41	59	5	11	16	30	70
	GTE	991	1	5	6	23	77	**	2	2	19	81
	Sprint	*	*	*	*	*	*	0	0	0	n.m.	n.m.
Iowa	*U S WEST*	1,105	1	86	86	1	99	1	7	8	13	87
Kansas	*SBC*	1,397	37	55	92	40	60	32	44	76	42	58
	Sprint	143	1	0	1	100	0	1	**	1	100	0
Kentucky	*BellSouth*	1,241	17	19	36	47	53	13	19	31	40	60
	GTE	559	2	2	4	48	52	**	2	2	23	77
Louisiana	*BellSouth*	2,501	58	35	93	62	38	53	29	82	65	35
Maine	*Bell Atlantic*	714	**	12	13	1	99	**	5	5	1	99
Maryland	*Bell Atlantic*	3,818	23	25	48	48	52	14	13	27	53	47
Massachusetts	*Bell Atlantic*	4,590	19	138	157	12	88	21	109	130	16	84
Michigan	*Ameritech*	5,500	67	36	103	65	35	79	39	119	67	33
	GTE	780	0	0	0	n.m.	n.m.	0	0	0	n.m.	n.m.
Minnesota	*Frontier*											
	Sprint	*	*	*	*	*	*	0	**	**	0	100
	U S WEST	2,323	12	93	105	12	88	12	53	65	18	82
Mississippi	*BellSouth*	1,336	42	11	53	79	21	37	7	44	83	17
Missouri	*SBC*	2,604	25	35	60	41	59	19	19	38	50	50
	Sprint	*	*	*	*	*	*	**	**	**	98	2
Montana	*U S WEST*	371	1	1	3	47	53	1	**	1	65	35
Nebraska	*U S WEST*	531	2	3	5	40	60	2	2	4	51	49
Nevada	*SBC*	356	1	4	5	13	87	1	3	3	16	84
	Sprint	*	*	*	*	*	*	2	6	8	30	70
New Hampshire	*Bell Atlantic*	808	1	29	30	3	97	1	19	20	5	95
New Jersey	*Bell Atlantic*	6,484	41	38	79	52	48	29	28	57	51	49
	Sprint	*	*	*	*	*	*	2	**	2	100	0
New Mexico	*U S WEST*	812	**	**	**	2	98	**	**	**	2	98

TABLE 9.5
CLEC RESIDENTIAL AND OTHER CUSTOMERS SERVED BY ILEC
TOTAL SERVICE RESALE (TSR) LINES

STATE	COMPANY	COMPANY SWITCHED LINES 06/30/1999 (thousands)	AS OF JUNE 30, 1999					AS OF DECEMBER 31, 1998				
			TSR LINES (thousands)			PERCENT		TSR LINES (thousands)			PERCENT	
			RES.	OTHER	TOTAL	RES.	OTHER	RES.	OTHER	TOTAL	RES.	OTHER
New York	*Bell Atlantic*	11,835	63	249	313	20 %	80 %	59	189	248	24 %	76 %
	Frontier											
North Carolina	*BellSouth*	2,533	16	31	47	33	67	11	25	36	30	70
	GTE	353	**	2	2	10	90	**	1	1	1	99
	Sprint	*	13	11	24	54	46	7	8	15	47	53
North Dakota	*U S WEST*	256	**	4	5	10	90	**	3	3	11	89
Ohio	*Ameritech*	4,145	13	53	67	20	80	6	71	77	7	93
	GTE	918	0	**	**	0	100	0	**	**	0	100
	Sprint	*	*	*	*	*	*	**	**	**	18	82
Oklahoma	*SBC*	1,664	32	16	48	67	33	28	12	40	69	31
Oregon	*GTE*	493	1	1	1	44	56	**	**	**	83	17
	U S WEST	1,395	3	7	11	31	69	4	3	7	58	42
Pennsylvania	*Bell Atlantic*	6,612	30	70	100	30	70	28	54	82	35	65
	Frontier											
	GTE	685	1	3	4	35	65	**	**	1	48	52
	Sprint	*	*	*	*	*	*	**	**	1	46	54
Rhode Island	*Bell Atlantic*	673	1	11	12	5	95	1	7	7	10	90
South Carolina	*BellSouth*	1,514	33	27	60	55	45	34	24	58	59	41
	Sprint	103	2	**	2	100	0	1	**	1	100	0
South Dakota	*U S WEST*	283	2	10	11	15	85	2	8	10	20	80
Tennessee	*BellSouth*	2,749	31	12	42	72	28	26	10	36	73	27
	Sprint	259	1	1	2	46	54	1	1	2	42	58
Texas	*GTE*	2,027	18	9	27	67	33	15	5	19	76	24
	SBC	9,737	210	180	390	54	46	203	146	349	58	42
	Sprint	381	5	2	6	74	26	4	2	6	72	28
Utah	*U S WEST*	1,116	1	1	1	63	37	1	1	2	56	44
Vermont	*Bell Atlantic*	348	**	5	5	0	100	**	2	2	0	100
Virginia	*Bell Atlantic*	3,598	14	32	46	31	69	4	15	18	20	80
	GTE	623	**	**	1	85	15	0	0	0	n.m.	n.m.
	Sprint	409	**	1	1	18	82	**	1	1	1	99
Washington	*GTE*	898	5	1	6	88	12	1	**	1	78	22
	Sprint	87	0	0	0	n.m.	n.m.	0	0	0	n.m.	n.m.
	U S WEST	2,555	2	16	18	13	87	2	3	5	35	65
West Virginia	*Bell Atlantic*	838	**	1	1	13	87	**	**	**	16	84
Wisconsin	*Ameritech*	2,195	7	39	47	16	84	6	36	42	13	87
	GTE	532	0	0	0	n.m.	n.m.	0	0	0	n.m.	n.m.
Wyoming	*U S WEST*	249	**	2	2	23	77	1	1	2	29	71
Total lines publicly reported +		160,807	1,391	1,948	3,339	42 %	58 %	1,215	1,523	2,738	44 %	56 %
Lines withheld to maintain confidentiality		6,371	6	9	14	39 %	61 %	0	0	0	n.m.	n.m.
Total lines +		167,177	1,397	1,957	3,354	42 %	58 %	1,215	1,523	2,738	44 %	56 %
Holding Company Summary	Ameritech	21,187	171	238	409	42 %	58 %	179	270	450	40 %	60 %
(for states reported above)	Bell Atlantic	41,840	202	626	827	24	76	167	452	619	27	73
	BellSouth	24,824	350	288	638	55	45	296	247	543	55	45
	GTE	17,628	121	55	176	69	31	64	36	100	64	36
	SBC	36,938	475	450	925	51	49	444	379	823	54	46
	Sprint	7,752	36	38	74	48	52	26	29	54	47	53
	U S WEST @	17,008	42	262	304	14	86	38	111	149	26	74

Source: Industry Analysis Division, *Local Competition: August 1999* and fifth voluntary local competition survey.

Notes: TSR Total Service Resale; Res Residential; @ TSR lines reported by U S WEST as of 6/30/98 include resold centrex lines; * Withheld to maintain confidentiality as requested by reporting company; ** Fewer than 500 lines; + Total lines are sums only for the companies listed in the table.

TABLE 9.5
CLEC RESIDENTIAL AND OTHER CUSTOMERS SERVED BY ILEC TOTAL SERVICE RESALE (TSR) LINES

		AS OF SEPTEMBER 30, 1998					AS OF JUNE 30, 1998				
		TSR LINES			PERCENT		TSR LINES @			PERCENT	
STATE	COMPANY	RES.	OTHER (thousands)	TOTAL	RES.	OTHER	RES.	OTHER (thousands)	TOTAL	RES.	OTHER
Alabama	*BellSouth*	17	17	34	50 %	50 %	15	10	25	61 %	39 %
Alaska											
Arizona	*U S WEST*	4	1	6	80	20	2	2	4	57	43
Arkansas	*SBC*	14	2	17	86	14	13	1	15	91	9
California	*GTE*	40	12	51	77	23	37	3	39	93	7
	SBC	122	130	252	48	52	128	123	251	51	49
Colorado	*U S WEST*	3	19	22	12	88	2	14	16	13	87
Connecticut	*SBC (SNET)*	20	14	34	60	40	21	10	31	67	33
Delaware	*Bell Atlantic*	8	2	10	78	22	6	1	7	80	20
Dist. Of Columbia	*Bell Atlantic*	3	8	11	26	74	1	5	7	20	80
Florida	*BellSouth*	38	64	103	37	63	38	57	95	40	60
	GTE	23	14	37	62	38	16	12	28	58	42
	Sprint	6	9	15	42	58	6	9	15	42	58
Georgia	*BellSouth*	58	40	99	59	41	58	31	89	65	35
Hawaii	*GTE*	**	**	**	46	54	**	**	**	50	50
Idaho	*U S WEST*	**	**	**	83	17	**	**	**	90	10
Illinois	*Ameritech*	87	118	205	43	57	88	112	201	44	56
	GTE	**	1	1	5	95	**	**	**	5	95
Indiana	*Ameritech*	3	9	12	22	78	1	4	5	18	82
	GTE	**	1	1	18	82	**	**	**	67	33
	Sprint	0	0	0	n.m.	n.m.	0	0	0	n.m.	n.m.
Iowa	*U S WEST*	**	3	3	3	97	**	99	99	0	100
Kansas	*SBC*	27	35	62	43	57	23	27	50	46	54
	Sprint	*	*	*	*	*	**	**	**	98	2
Kentucky	*BellSouth*	12	16	28	43	57	8	12	20	42	58
	GTE	**	1	1	23	77	**	1	1	9	91
Louisiana	*BellSouth*	35	26	61	58	42	29	15	44	67	33
Maine	*Bell Atlantic*	**	1	1	2	98	**	2	2	1	99
Maryland	*Bell Atlantic*	11	10	22	52	48	4	7	11	40	60
Massachusetts	*Bell Atlantic*	4	92	96	4	96	10	75	85	12	88
Michigan	*Ameritech*	94	43	137	68	32	112	42	155	73	27
	GTE	0	0	0	n.m.	n.m.	0	0	0	n.m.	n.m.
Minnesota	*Frontier*	*	*	*	*	*					
	Sprint	0	0	0	n.m.	n.m.	0	0	0	n.m.	n.m.
	U S WEST	8	43	51	16	84	3	52	55	6	94
Mississippi	*BellSouth*	27	6	32	83	17	23	4	27	86	14
Missouri	*SBC*	16	14	30	54	46	14	9	23	62	38
	Sprint	*	*	*	*	*	*	*	*	*	*
Montana	*U S WEST*	**	**	1	52	48	**	**	1	36	64
Nebraska	*U S WEST*	1	2	2	26	74	**	1	1	1	99
Nevada	*SBC*	**	2	2	16	84	**	1	2	19	81
	Sprint	2	4	6	37	63	*	*	*	*	*
New Hampshire	*Bell Atlantic*	**	7	7	3	97	**	8	9	3	97
New Jersey	*Bell Atlantic*	23	18	40	56	44	16	11	27	60	40
	Sprint	*	*	*	*	*	*	*	*	*	*
New Mexico	*U S WEST*	**	**	**	3	97	**	**	**	2	98

TABLE 9.5
CLEC RESIDENTIAL AND OTHER CUSTOMERS SERVED BY ILEC
TOTAL SERVICE RESALE (TSR) LINES

STATE	COMPANY	AS OF SEPTEMBER 30, 1998 TSR LINES RES.	OTHER (thousands)	TOTAL	PERCENT RES.	OTHER	AS OF JUNE 30, 1998 TSR LINES @ RES.	OTHER (thousands)	TOTAL	PERCENT RES.	OTHER
New York	*Bell Atlantic*	54	190	244	22 %	78 %	33	166	199	16 %	84 %
	Frontier	*	*	*	*	*					
North Carolina	*BellSouth*	9	21	30	29	71	6	18	24	24	76
	GTE	**	1	1	11	89	**	**	1	12	88
	Sprint	6	6	11	48	52	4	3	7	54	46
North Dakota	*U S WEST*	**	2	3	8	92	**	10	10	1	99
Ohio	*Ameritech*	6	77	83	7	93	1	75	76	2	98
	GTE	0	**	**	0	100	**	**	**	17	83
	Sprint	*	*	*	*	*	*	*	*	*	*
Oklahoma	*SBC*	25	9	34	74	26	17	4	21	80	20
Oregon	*GTE*	**	**	**	93	7	**	**	**	57	43
	U S WEST	3	2	5	62	38	2	44	45	4	96
Pennsylvania	*Bell Atlantic*	34	57	91	38	62	30	41	71	43	57
	Frontier	*	*	*	*	*					
	GTE	**	**	**	73	27	**	**	**	25	75
	Sprint	*	*	*	*	*	**	**	**	76	24
Rhode Island	*Bell Atlantic*	**	3	3	2	98	**	4	4	1	99
South Carolina	*BellSouth*	30	19	50	61	39	16	13	29	54	46
	Sprint	1	**	1	100	0	1	**	1	100	0
South Dakota	*U S WEST*	**	7	7	2	98	**	12	12	0	100
Tennessee	*BellSouth*	18	8	26	69	31	17	6	23	74	26
	Sprint	1	1	1	38	62	**	1	1	18	82
Texas	*GTE*	17	2	19	87	13	12	1	13	94	6
	SBC	197	119	316	62	38	195	88	283	69	31
	Sprint	4	1	5	78	22	3	1	4	85	15
Utah	*U S WEST*	1	1	1	60	40	1	5	6	15	85
Vermont	*Bell Atlantic*	**	1	1	0	100	**	1	1	0	100
Virginia	*Bell Atlantic*	3	14	17	20	80	2	7	9	25	75
	GTE	0	0	0	n.m.	n.m.	**	**	**	37	63
	Sprint	**	**	**	1	99	**	**	**	6	94
Washington	*GTE*	1	**	1	87	13	**	**	**	58	42
	Sprint	0	0	0	n.m.	n.m.	0	0	0	n.m.	n.m.
	U S WEST	1	2	4	38	62	1	45	46	2	98
West Virginia	*Bell Atlantic*	0	0	0	n.m.	n.m.	0	0	0	n.m.	n.m.
Wisconsin	*Ameritech*	4	33	37	12	88	3	26	30	11	89
	GTE	**	**	**	50	50	**	**	**	92	8
Wyoming	*U S WEST*	**	2	2	7	93	0	1	1	0	100
Total lines publicly reported +		1,123	1,362	2,484	45 %	55 %	1,025	1,333	2,357	43 %	57 %
Lines withheld to maintain confidentiality		11	97	108	10 %	90 %	2	3	5	38 %	62 %
Total lines +		1,134	1,459	2,593	44 %	56 %	1,027	1,336	2,363	43 %	57 %
Holding Company Summary	Ameritech	193	281	474	41 %	59 %	206	260	467	44 %	56 %
(for states reported above)	Bell Atlantic	141	403	544	26	74	104	328	432	24	76
	BellSouth	244	217	462	53	47	211	166	376	56	44
	GTE	81	31	112	72	28	66	17	83	80	20
	SBC	422	325	747	57	43	411	265	676	61	39
	Sprint	21	21	42	49	51	17	16	33	51	49
	U S WEST @	22	83	106	21	79	12	284	296	4	96

Source: Industry Analysis Division, *Local Competition: August 1999* and fifth voluntary local competition survey.

Notes: TSR Total Service Resale; Res Residential; @ TSR lines reported by U S WEST as of 6/30/98 include resold centrex lines; * Withheld to maintain confidentiality as requested by reporting company; ** Fewer than 500 lines; + Total lines are sums only for the companies listed in the table.

TABLE 9.6
PERCENT OF ILEC LINES SERVED BY SWITCHING CENTERS WHERE NEW ENTRANTS HAVE COLLOCATION ARRANGEMENTS

STATE	TOTAL STATE LINES (1998 USF Loops in thousands) +	COMPANY	AS OF JUNE 30, 1999			AS OF DECEMBER 31, 1998			AS OF SEPTEMBER 30, 1998		
			RESIDENTIAL LINES	OTHER LINES	TOTAL LINES	RESIDENTIAL LINES	OTHER LINES	TOTAL LINES	RESIDENTIAL LINES	OTHER LINES	TOTAL LINES
Alabama	2,465	*BellSouth*	48.6 %	60.0 %	52.0 %	30.4 %	45.1 %	34.7 %	28.2 %	43.0 %	32.3 %
Alaska	409										
Arizona	2,871	*U S WEST*	52.8	74.7	59.2	53.3	75.1	59.6	51.3	72.1	57.1
Arkansas	1,422	*SBC*	18.2	24.0	20.0	12.0	20.8	14.7	9.6	18.6	12.4
California	22,222	*GTE*	56.3	58.6	57.1	49.8	55.7	51.8	41.6	52.3	45.0
		SBC	73.8	81.8	76.9	74.0	82.3	77.3	59.4	71.6	64.1
Colorado	2,757	*U S WEST*	71.2	78.2	73.4	55.6	66.3	59.0	55.8	65.5	58.7
Connecticut	2,212	*SBC (SNET)*	n.a.	n.a.	n.a.	17.4	32.6	22.8	17.6	33.3	23.5
Delaware	558	*Bell Atlantic*	89.9	94.8	91.6	80.0	91.9	84.3	66.6	83.0	72.6
Dist. Of Columbia	934	*Bell Atlantic*	83.1	94.1	90.4	57.6	85.1	76.4	8.1	68.4	49.3
Florida	10,958	*BellSouth*	78.8	83.9	80.4	34.7	50.8	39.7	28.8	44.8	33.7
		GTE	15.9	35.0	21.4	14.5	38.8	21.4	3.0	19.0	7.3
		Sprint	21.1	41.5	27.2	21.2	47.2	29.0	21.6	33.1	25.0
Georgia	5,005	*BellSouth*	68.5	75.5	71.0	43.1	57.8	48.3	39.7	55.5	45.3
Hawaii	718	*GTE*	24.3	40.8	30.3	24.4	44.6	31.4	23.6	36.9	28.1
Idaho	707	*U S WEST*	27.5	38.1	30.6	26.9	36.5	29.6	27.6	37.3	30.3
Illinois	8,209	*Ameritech*	62.1	75.1	67.4	70.6	83.2	75.7	58.0	73.2	64.2
		GTE	5.5	7.5	6.0	4.7	7.6	5.5	13.4	31.6	17.9
Indiana	3,589	*Ameritech*	19.3	35.5	25.1	41.1	57.0	46.8	41.2	57.1	46.8
		GTE	18.8	28.0	21.5	17.2	27.2	20.0	9.1	18.9	11.7
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iowa	1,641	*U S WEST*	43.2	56.8	47.6	43.4	56.9	47.6	43.4	55.9	47.2
Kansas	1,650	*SBC*	31.9	44.2	36.0	22.6	29.5	24.9	22.7	29.5	24.9
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kentucky	2,134	*BellSouth*	22.6	36.4	26.6	20.9	34.0	24.6	20.9	34.9	24.8
		GTE	5.9	19.6	9.8	6.0	20.8	10.0	8.7	13.8	10.0
Louisiana	2,529	*BellSouth*	54.6	68.5	58.9	26.3	40.3	30.6	10.7	28.8	16.0
Maine	825	*Bell Atlantic*	31.1	49.2	36.3	9.1	18.3	11.7	9.2	18.7	11.8
Maryland	3,636	*Bell Atlantic*	79.6	85.5	81.7	33.1	49.1	38.9	21.1	37.9	27.2
Massachusetts	4,514	*Bell Atlantic*	67.2	71.0	68.6	49.2	61.3	53.7	28.7	49.1	35.8
Michigan	6,414	*Ameritech*	28.9	43.2	34.1	49.4	63.1	54.4	47.8	61.6	52.7
		GTE	11.6	22.8	14.2	0.0	0.0	0.0	0.0	0.0	0.0
Minnesota	2,993	*Frontier*							*	*	*
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		U S WEST	65.7	80.4	70.8	41.7	64.1	49.4	39.8	61.4	46.9
Mississippi	1,370	*BellSouth*	23.5	37.4	27.8	19.2	30.7	22.7	19.2	33.7	23.3
Missouri	3,451	*SBC*	55.4	69.0	59.8	27.9	49.7	35.0	27.9	50.0	35.1
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Montana	523	*U S WEST*	18.1	25.4	20.2	18.0	26.1	20.3	0.0	0.0	0.0
Nebraska	1,015	*U S WEST*	49.7	63.9	54.2	42.6	61.3	48.4	37.4	57.0	43.2
Nevada	1,278	*SBC*	37.1	56.5	44.2	37.7	57.3	44.9	4.9	3.0	4.3
		Sprint	99.2	98.7	99.0	99.2	98.8	99.0	99.6	100.0	99.7
New Hampshire	844	*Bell Atlantic*	72.2	76.5	73.6	35.1	52.0	40.7	35.4	52.2	41.1
New Jersey	6,475	*Bell Atlantic*	78.0	95.6	84.2	31.3	44.7	36.1	23.5	36.0	28.0
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Mexico	925	*U S WEST*	31.6	40.2	34.0	32.0	42.1	34.7	32.1	41.5	34.6

TABLE 9.6
PERCENT OF ILEC LINES SERVED BY SWITCHING CENTERS WHERE NEW ENTRANTS HAVE COLLOCATION ARRANGEMENTS

STATE	TOTAL STATE LINES (1998 USF Loops in thousands) +	COMPANY	AS OF JUNE 30, 1999			AS OF DECEMBER 31, 1998			AS OF SEPTEMBER 30, 1998		
			RESIDENTIAL LINES	OTHER LINES	TOTAL LINES	RESIDENTIAL LINES	OTHER LINES	TOTAL LINES	RESIDENTIAL LINES	OTHER LINES	TOTAL LINES
New York	12,844	*Bell Atlantic*	87.5 %	86.2 %	87.0 %	55.9 %	67.4 %	60.1 %	45.0 %	63.0 %	51.4 %
		Frontier							*	*	*
North Carolina	4,942	*BellSouth*	55.7	70.1	60.7	41.5	61.0	48.3	38.9	59.2	45.9
		GTE	11.1	34.0	18.9	11.3	36.1	19.5	24.7	30.8	26.6
		Sprint	5.1	8.1	5.9	2.6	6.9	3.8	2.7	6.8	3.8
North Dakota	410	*U S WEST*	48.9	54.8	50.8	49.1	55.4	51.0	49.1	55.9	51.1
Ohio	6,885	*Ameritech*	27.2	44.2	32.8	49.8	66.0	55.1	41.9	58.9	47.5
		GTE	1.5	3.2	2.0	1.6	3.5	2.0	2.3	1.8	2.2
		Sprint	3.5	4.6	3.8	3.3	4.5	3.6	3.2	4.5	3.5
Oklahoma	2,018	*SBC*	33.6	45.9	37.4	31.1	41.7	34.4	29.3	39.8	32.6
Oregon	2,079	*GTE*	50.3	64.8	54.6	28.3	33.4	29.8	2.5	1.9	2.3
		U S WEST	37.9	55.1	43.4	37.4	55.4	43.1	37.5	55.2	42.9
Pennsylvania	8,212	*Bell Atlantic*	76.4	88.2	80.5	44.2	63.1	50.9	39.2	59.1	46.2
		Frontier							*	*	*
		GTE	5.7	10.8	7.1	5.8	12.3	7.5	4.9	4.9	4.9
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rhode Island	661	*Bell Atlantic*	81.2	85.9	82.7	44.1	52.7	46.9	44.7	54.2	47.5
South Carolina	2,248	*BellSouth*	28.7	44.6	33.7	13.1	29.2	18.1	13.2	29.6	18.2
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Dakota	418	*U S WEST*	36.3	45.3	39.4	21.2	26.5	22.9	21.1	25.5	22.6
Tennessee	3,369	*BellSouth*	52.1	63.9	55.5	41.6	57.5	46.2	38.5	56.2	43.5
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Texas	12,617	*GTE*	14.0	26.5	18.0	13.1	26.3	17.2	13.6	32.9	19.4
		SBC	68.6	77.1	71.6	40.1	58.3	46.5	27.8	44.6	33.8
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Utah	1,138	*U S WEST*	55.6	69.9	60.1	45.5	66.6	52.1	45.7	66.5	52.1
Vermont	402	*Bell Atlantic*	25.7	38.3	29.8	26.2	38.8	30.3	26.0	38.8	30.0
Virginia	4,575	*Bell Atlantic*	76.0	89.2	81.0	37.0	54.8	43.8	20.9	33.0	25.6
		GTE	4.0	7.3	4.9	4.1	8.3	5.2	6.1	9.9	7.1
		Sprint	13.6	21.1	15.6	14.3	22.0	16.4	12.3	19.6	14.2
Washington	3,663	*GTE*	43.2	44.1	43.4	21.3	30.2	23.8	4.8	8.8	5.9
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		U S WEST	66.9	77.1	70.1	63.2	76.3	67.3	63.2	76.1	67.1
West Virginia	987	*Bell Atlantic*	11.8	26.7	15.8	4.0	13.8	6.7	0.0	0.0	0.0
Wisconsin	3,392	*Ameritech*	52.7	57.5	54.4	87.7	83.4	86.2	56.0	67.8	60.1
		GTE	2.0	2.4	2.1	2.1	2.9	2.3	1.1	2.1	1.3
Wyoming	290	*U S WEST*	16.2	18.6	17.0	16.2	18.3	16.9	0.0	0.0	0.0
Percentages for companies listed above (weighted average based on total lines served including those withheld to maintain confidentiality)			55.7 %	67.9 %	59.8 %	42.2 %	58.3 %	47.7 %	34.8 %	51.5 %	40.4 %
Holding Company Summary		Ameritech	40.5 %	55.8 %	46.1 %	59.4 %	72.4 %	64.2 %	50.0 %	65.6 %	55.7 %
(for states reported above)		Bell Atlantic	76.5	85.0	79.6	43.2	58.9	49.0	32.6	50.2	39.0
		BellSouth	57.8	68.5	61.2	33.4	49.4	38.5	28.9	46.2	34.2
		GTE	25.5	36.0	28.7	21.1	33.9	24.9	16.4	28.9	19.9
		SBC @@	64.9	75.1	68.6	51.5	66.3	57.0	41.0	56.4	46.6
		Sprint	18.0	27.8	20.8	17.6	29.3	20.9	17.5	25.3	19.7
		U S WEST	54.3	67.8	58.5	47.0	62.9	52.0	45.7	60.8	50.2

Source: Industry Analysis Division, *Local Competition: August 1999* and fifth voluntary local competition survey.

Notes: * Withheld to maintain confidentiality as requested by reporting company; + Values reported are only for the companies listed in the table, except that values in the column labeled "Total State Lines (1998 USF Loops)" are for all incumbent telephone companies; @@ SBC summaries as of 6/30/99, 6/30/98 and 12/31/97 exclude SNET, for which information is not available.

TABLE 9.6
PERCENT OF ILEC LINES SERVED BY SWITCHING CENTERS WHERE NEW ENTRANTS HAVE COLLOCATION ARRANGEMENTS

STATE	TOTAL STATE LINES *(1998 USF Loops in thousands) +*	COMPANY	AS OF JUNE 30, 1998 RESIDENTIAL LINES	AS OF JUNE 30, 1998 OTHER LINES	AS OF JUNE 30, 1998 TOTAL LINES	AS OF DECEMBER 31, 1997 RESIDENTIAL LINES	AS OF DECEMBER 31, 1997 OTHER LINES	AS OF DECEMBER 31, 1997 TOTAL LINES
Alabama	2,465	*BellSouth*	12.4 %	24.1 %	15.7 %	12.3 %	25.5 %	16.1 %
Alaska	409							
Arizona	2,871	*U S WEST*	17.0	30.7	20.9	48.5	68.6	54.4
Arkansas	1,422	*SBC*	9.6	19.0	12.5	9.6	20.7	12.9
California	22,222	*GTE*	21.3	30.7	24.4	16.1	26.3	20.3
		SBC	46.8	63.7	53.5	32.5	48.5	37.3
Colorado	2,757	*U S WEST*	6.0	15.0	8.8	25.1	41.9	30.6
Connecticut	2,212	*SBC (SNET)*				n.a.	n.a.	n.a.
Delaware	558	*Bell Atlantic*	66.6	83.0	72.6	63.1	81.6	69.9
Dist. Of Columbia	934	*Bell Atlantic*	8.1	69.0	49.6	8.2	70.1	49.9
Florida	10,958	*BellSouth*	26.1	41.6	30.8	24.6	42.5	30.0
		GTE	5.7	24.7	11.0	13.5	44.0	26.9
		Sprint	18.7	39.4	24.9	11.2	18.5	13.3
Georgia	5,005	*BellSouth*	26.0	43.8	32.3	19.5	43.1	27.9
Hawaii	718	*GTE*	23.2	45.2	31.2	21.2	43.5	31.3
Idaho	707	*U S WEST*	24.9	37.1	28.4	23.0	37.1	26.9
Illinois	8,209	*Ameritech*	49.1	66.3	56.4	41.2	58.3	48.2
		GTE	3.0	4.7	3.5	4.8	16.2	8.7
Indiana	3,589	*Ameritech*	20.4	36.7	26.4	20.4	36.7	26.4
		GTE	0.0	0.0	0.0	0.0	0.0	0.0
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0
Iowa	1,641	*U S WEST*	3.3	7.5	4.6	19.0	28.9	22.1
Kansas	1,650	*SBC*	14.0	19.9	15.9	13.9	21.3	16.2
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0
Kentucky	2,134	*BellSouth*	21.0	35.2	24.9	21.0	37.3	25.5
		GTE	6.0	22.8	10.7	6.1	33.9	16.4
Louisiana	2,529	*BellSouth*	5.0	20.1	9.4	3.5	15.9	7.1
Maine	825	*Bell Atlantic*	9.2	18.9	11.8	5.2	11.9	7.1
Maryland	3,636	*Bell Atlantic*	20.8	35.9	26.3	18.6	35.9	24.8
Massachusetts	4,514	*Bell Atlantic*	26.6	44.9	32.9	25.3	47.4	33.4
Michigan	6,414	*Ameritech*	44.2	59.6	49.8	43.1	60.9	49.6
		GTE	0.0	0.0	0.0	0.0	0.0	0.0
Minnesota	2,993	*Frontier*						
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0
		U S WEST	28.6	51.4	36.2	27.8	51.9	36.0
Mississippi	1,370	*BellSouth*	13.7	26.0	17.2	10.2	21.4	13.4
Missouri	3,451	*SBC*	13.7	31.7	19.6	14.1	34.8	20.5
		Sprint	*	*	*	0.0	0.0	0.0
Montana	523	*U S WEST*	0.0	0.0	0.0	0.0	0.0	0.0
Nebraska	1,015	*U S WEST*	23.3	47.1	30.6	32.3	53.4	38.8
Nevada	1,278	*SBC*	38.2	58.2	45.6	38.4	55.1	42.4
		Sprint	*	*	*	99.1	99.5	99.2
New Hampshire	844	*Bell Atlantic*	35.3	56.0	41.9	31.8	49.2	37.6
New Jersey	6,475	*Bell Atlantic*	18.9	31.4	23.4	17.2	29.6	21.6
		Sprint	*	*	*	0.0	0.0	0.0
New Mexico	925	*U S WEST*	29.2	41.2	32.4	29.5	42.9	33.2

TABLE 9.6
PERCENT OF ILEC LINES SERVED BY SWITCHING CENTERS WHERE NEW ENTRANTS HAVE COLLOCATION ARRANGEMENTS

STATE	TOTAL STATE LINES *(1998 USF Loops in thousands) +*	COMPANY	AS OF JUNE 30, 1998 RESIDENTIAL LINES	AS OF JUNE 30, 1998 OTHER LINES	AS OF JUNE 30, 1998 TOTAL LINES	AS OF DECEMBER 31, 1997 RESIDENTIAL LINES	AS OF DECEMBER 31, 1997 OTHER LINES	AS OF DECEMBER 31, 1997 TOTAL LINES
New York	12,844	*Bell Atlantic*	18.7 %	48.6 %	29.5 %	18.7 %	48.2 %	28.4 %
		Frontier				*	*	*
North Carolina	4,942	*BellSouth*	35.8	57.7	43.2	23.3	44.2	30.4
		GTE	11.3	39.1	20.7	7.3	25.2	18.0
		Sprint	2.7	6.7	3.7	4.6	7.5	5.4
North Dakota	410	*U S WEST*	0.0	0.0	0.0	0.0	0.0	0.0
Ohio	6,885	*Ameritech*	41.9	59.8	48.1	40.0	65.4	48.6
		GTE	0.0	0.0	0.0	1.5	4.8	2.6
		Sprint	*	*	*	0.0	0.0	0.0
Oklahoma	2,018	*SBC*	25.4	41.1	30.3	21.7	37.9	26.6
Oregon	2,079	*GTE*	0.0	0.0	0.0	9.1	23.4	15.3
		U S WEST	17.3	34.8	22.9	25.4	42.6	30.9
Pennsylvania	8,212	*Bell Atlantic*	39.0	59.1	46.1	39.3	59.4	46.4
		Frontier						
		GTE	5.7	13.2	7.7	13.0	22.0	16.1
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0
Rhode Island	661	*Bell Atlantic*	44.6	51.9	46.7	31.8	47.0	36.7
South Carolina	2,248	*BellSouth*	13.2	30.4	18.3	11.0	27.6	15.9
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0
South Dakota	418	*U S WEST*	0.0	0.0	0.0	21.3	26.2	22.9
Tennessee	3,369	*BellSouth*	36.1	54.1	41.2	32.6	52.6	38.3
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0
Texas	12,617	*GTE*	11.3	26.0	15.9	11.5	29.4	19.2
		SBC	22.2	41.8	29.2	11.2	30.8	18.1
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0
Utah	1,138	*U S WEST*	31.8	48.5	37.1	52.7	70.2	58.3
Vermont	402	*Bell Atlantic*	26.1	39.7	30.4	25.1	39.2	29.7
Virginia	4,575	*Bell Atlantic*	18.0	30.6	22.8	17.9	30.5	22.7
		GTE	4.0	8.7	5.2	4.1	10.0	6.4
		Sprint	*	*	*	12.2	20.0	14.2
Washington	3,663	*GTE*	8.2	12.4	9.4	16.7	43.3	28.3
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0
		U S WEST	18.8	37.6	24.7	29.6	57.3	38.1
West Virginia	987	*Bell Atlantic*	0.0	0.0	0.0	0.0	0.0	0.0
Wisconsin	3,392	*Ameritech*	39.8	50.9	43.9	36.8	48.2	40.8
		GTE	0.2	0.8	0.3	0.0	0.0	0.0
Wyoming	290	*U S WEST*	0.0	0.0	0.0	0.0	0.0	0.0
Percentages for companies listed above (weighted average based on total lines served including those withheld to maintain confidentiality)			25.3 %	44.1 %	31.7 %	23.3 %	41.4 %	29.5 %
Holding Company Summary		Ameritech	42.3 %	59.0 %	48.6 %	38.7 %	57.0 %	45.6 %
(for states reported above)		Bell Atlantic	23.8	44.7	31.4	22.8	44.4	30.4
		BellSouth	23.1	40.1	28.4	19.6	37.9	25.3
		GTE	9.7	21.2	12.9	10.5	26.8	17.1
		SBC @@	33.4	52.2	40.4	22.9	39.1	28.0
		Sprint	16.6	26.5	19.4	14.7	21.1	16.5
		U S WEST	17.1	31.2	21.4	30.4	48.7	36.1

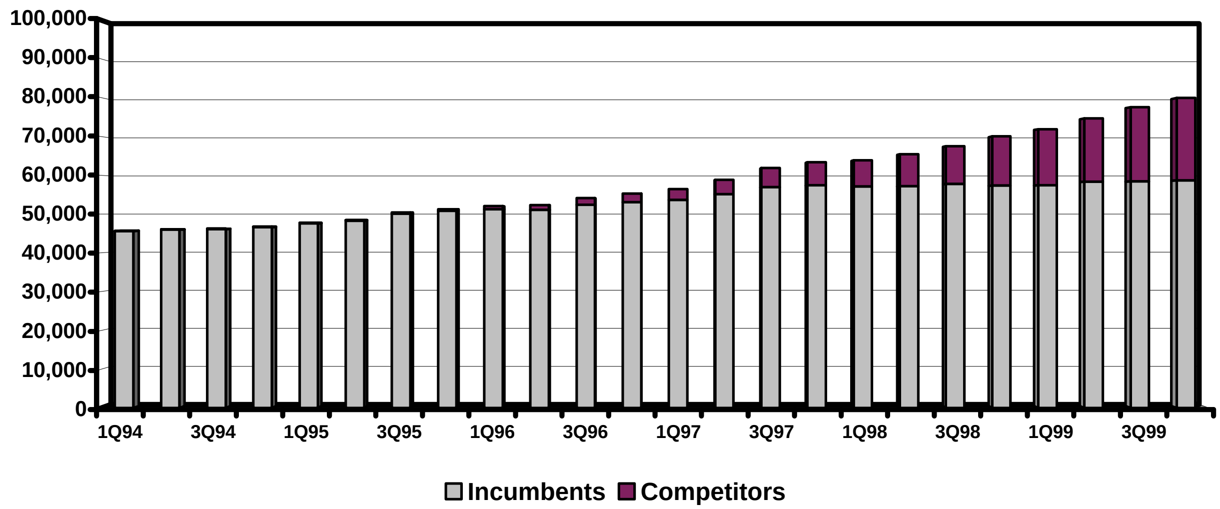
Source: Industry Analysis Division, *Local Competition: August 1999* and fifth voluntary local competition survey.

Notes: * Withheld to maintain confidentiality as requested by reporting company; + Values reported are only for the companies listed in the table, except that values in the column labeled "Total State Lines (1998 USF Loops)" are for all incumbent telephone companies; @@ SBC summaries as of 6/30/99, 6/30/98 and 12/31/97 exclude SNET, for which information is not available.

TABLE 9.7
NUMBERING CODES ASSIGNED TO LOCAL EXCHANGE CARRIERS

At End of Quarter		Number of Codes Assigned (10,000 Numbers Per Code)			Share of Codes Assigned	
		Incumbents	Competitors	Total	Incumbents	Competitors
1994	First Quarter	45,627	0	45,627	100 %	0 %
	Second Quarter	46,026	4	46,030	100	0
	Third Quarter	46,161	27	46,188	100	0
	Fourth Quarter	46,609	58	46,667	100	0
1995	First Quarter	47,590	113	47,703	100	0
	Second Quarter	48,301	154	48,455	100	0
	Third Quarter	50,083	301	50,384	99	1
	Fourth Quarter	50,835	401	51,236	99	1
1996	First Quarter	51,270	761	52,031	99	1
	Second Quarter	51,099	1,220	52,319	98	2
	Third Quarter	52,363	1,744	54,107	97	3
	Fourth Quarter	53,013	2,297	55,310	96	4
1997	First Quarter	53,655	2,761	56,416	95	5
	Second Quarter	55,130	3,717	58,847	94	6
	Third Quarter	56,891	4,951	61,842	92	8
	Fourth Quarter	57,428	5,916	63,344	91	9
1998	First Quarter	57,123	6,731	63,854	89	11
	Second Quarter	57,194	8,252	65,446	87	13
	Third Quarter	57,772	9,727	67,499	86	14
	Fourth Quarter	57,339	12,707	70,046	82	18
1999	First Quarter	57,411	14,478	71,889	80	20
	Second Quarter	58,312	16,380	74,692	78	22
	Third Quarter	58,451	19,100	77,551	75	25
	Fourth Quarter	58,665	21,241	79,906	73	27

CHART 9.3
NUMBERING CODES ISSUED TO LOCAL EXCHANGE CARRIERS



Source: Telcordia Technologies, Inc., *Local Exchange Routing Guide.*

CHART 9.4
LOCAL SERVICE COMPETITORS HOLDING NUMBERING CODES

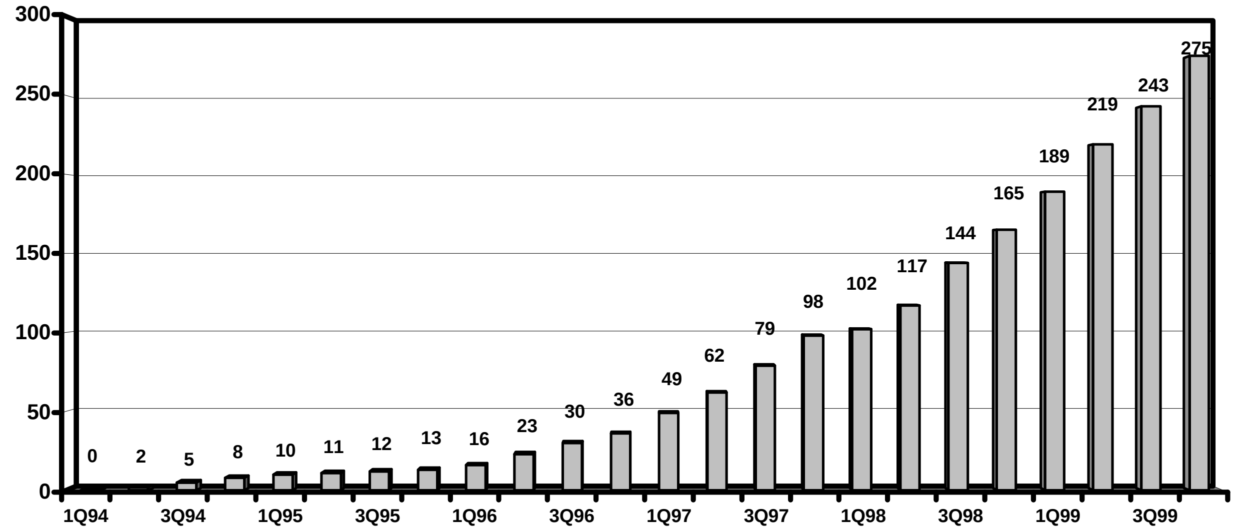
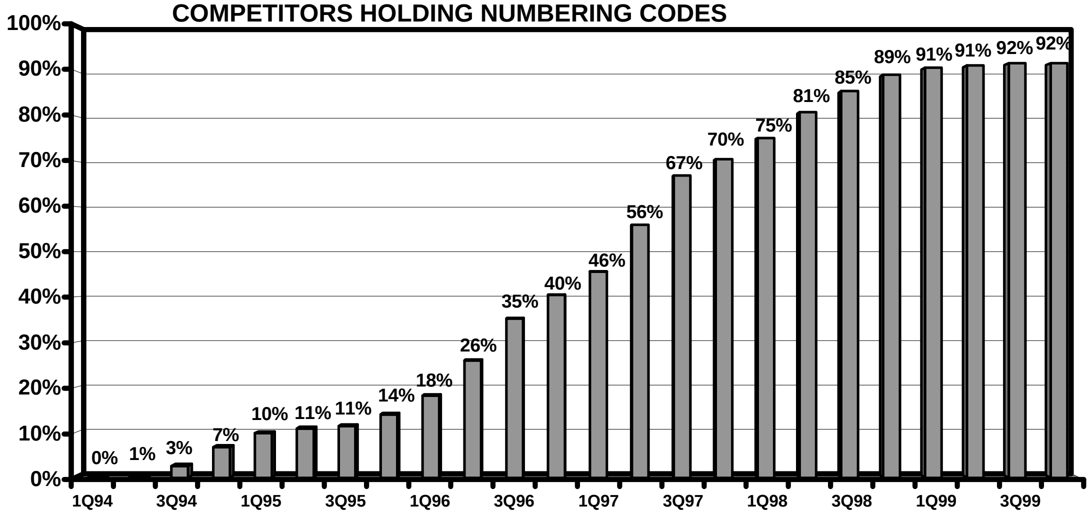


CHART 9.5
PERCENTAGE OF LATAS WITH ONE OR MORE LOCAL SERVICE COMPETITORS HOLDING NUMBERING CODES



Source: Telcordia Technologies, Inc., *Local Exchange Routing Guide.*

TABLE 9.8

TELEPHONE NUMBERS TRANSFERRED

		Transferred Between Carriers				Transferred Within Same Carrier		
		Pooling		Other Reasons				
Year	Month	Numbers Ported	Cumulative	Numbers Ported	Cumulative	Numbers Ported	Cumulative	Cumulative Total
1997	December	0	0	80	80	0	0	80
1998	January	0	0	200	280	0	0	280
	February	0	0	10	290	0	0	290
	March	0	0	228	518	8	8	526
	April	0	0	550	1,068	14	22	1,090
	May	0	0	1,893	2,961	20	42	3,003
	June	0	0	5,101	8,062	27	69	8,131
	July	0	0	13,573	21,635	665	734	22,369
	August	0	0	28,324	49,959	1,815	2,549	52,508
	September	0	0	33,430	83,389	2,259	4,808	88,197
	October	0	0	97,837	181,226	3,346	8,154	189,380
	November	0	0	107,921	289,147	12,166	20,320	309,467
	December	948	948	143,090	432,237	18,665	38,985	472,170
1999	January	2,993	3,941	155,735	587,972	6,626	45,611	637,524
	February	0	3,941	177,798	765,770	6,624	52,235	821,946
	March	18,610	22,551	209,889	975,659	7,934	60,169	1,058,379
	April	58,545	81,096	218,640	1,194,299	10,180	70,349	1,345,744
	May	6,862	87,958	235,991	1,430,290	16,596	86,945	1,605,193
	June	11,104	99,062	284,894	1,715,184	22,255	109,200	1,923,446
	July	11,002	110,064	288,568	2,003,752	19,438	128,638	2,242,454
	August	2,001	112,065	308,622	2,312,374	37,978	166,616	2,591,055
	September	1,000	113,065	336,665	2,649,039	46,396	213,012	2,975,116
	October	0	113,065	317,573	2,966,612	46,499	259,511	3,339,188

Source: Local Number Portability Administrator (NeuStar, Inc.).

10 LONG DISTANCE CARRIERS:

Carrier identification codes (CICs) provide information on the number of firms seeking to acquire certain types of interconnecting arrangements with local telephone companies. Any firm that seeks to use trunk-side connections with local telephone companies is provided a carrier identification code so that traffic can be efficiently routed.

CICs are currently assigned by the North American Numbering Plan Administration (NANPA), which is part of Neustar, Inc. Further information on such codes can be found on the internet at <http://www.nanpa.com>.

Beginning in 1986, a number of corporations, government agencies and other organizations began to acquire carrier identification codes for their own use, rather than for the purpose of providing telecommunications services to others. After that time, the use of such codes to estimate the number of long distance carriers became less reliable. We believe, however, that the number of firms obtaining these codes provides the best information available on the entry of new firms into the long distance market prior to 1986. The number of codes assigned is shown in Table 10.1.

During the late 1980s and 1990s, alternative sources for developing counts of long distance carriers became available. Starting in 1987, information on the number of telephone lines presubscribed to each long distance carrier was collected by NECA because FCC rules required NECA to recover certain expenses from the larger long distance carriers. Pursuant to the 1996 Act, the FCC changed its rules on universal service, and as a result, NECA stopped collecting the presubscribed line data and information. December 1996 is the last year in which presubscribed line data was collected by NECA.

Carriers were first asked to select a type of carrier category that best identified their operations when they filed 1993 data on their 1994 telecommunications relay service (TRS) fund worksheets. Since 1986, the number of long distance carriers has more than tripled. Table 10.2 shows several alternative measures of long distance carrier development.

TABLE 10.1

NUMBER OF CARRIER IDENTIFICATION CODES (CICs) ASSIGNED BY NORTH AMERICAN NUMBERING PLAN ADMINISTRATOR

Year	Quarter	Number of CICS Assigned	Year	Quarter	Number of CICS Assigned
1982	First Quarter	11	1988	First Quarter	602
	Second Quarter	13		Second Quarter	621
	Third Quarter	13		Third Quarter	601
	Fourth Quarter	11		Fourth Quarter	639
1983	First Quarter	15	1989	First Quarter	685
	Second Quarter	25		Second Quarter	714
	Third Quarter	33		Third Quarter	730
	Fourth Quarter	42		Fourth Quarter	747
1984	First Quarter	54	1990	First Quarter	774
	Second Quarter	86 *		Second Quarter	794
	Third Quarter	121		Third Quarter	817
	Fourth Quarter	155		Fourth Quarter	791
1985	First Quarter	182	1991	First Quarter	745
	Second Quarter	212		Second Quarter	766
	Third Quarter	236		Third Quarter	783
	Fourth Quarter	256		Fourth Quarter	807
1986	First Quarter	276	1992	First Quarter	786
	Second Quarter	331		Second Quarter	831
	Third Quarter	361		Third Quarter	840
	Fourth Quarter	413		Fourth Quarter	886
1987	First Quarter	444			
	Second Quarter	495			
	Third Quarter	530			
	Fourth Quarter	573			

Year	Quarter	FGB	FGD
1993	First Quarter	694 **	709
	Second Quarter	738	746
	Third Quarter	739	760
	Fourth Quarter	753	796
1994	First Quarter	781	815
	Second Quarter	795	845
	Third Quarter	805	899***
	Fourth Quarter	819	947
1995	First Quarter	829	1,016
	Second Quarter	832	1,082
	Third Quarter	843	1,146
	Fourth Quarter	852	1,209
1996	First Quarter	865	1,253
	Second Quarter	876	1,300
	Third Quarter	875	1,315
	Fourth Quarter	878	1,337
1997	First Quarter	882	1,395
	Second Quarter	896	1,427
	Third Quarter	908	1,481
	Fourth Quarter	909	1,538
1998	First Quarter	943	1,557
	Second Quarter	937	1,614
	Third Quarter	943	1,671
	Fourth Quarter	952	1,721
1999	First Quarter	949	1,842
	Second Quarter	953	1,909
	Third Quarter	954	1,980
	Fourth Quarter	956	2,032

*   Conversion from 2-digit to 3-digit codes.
** Conversion from 3-digit to 4-digit codes.
*** Includes both 3-digit and 4-digit codes.

TABLE 10.2

ALTERNATIVE MEASURES OF LONG DISTANCE CARRIER DEVELOPMENT

Year	Month	Carriers with Presubscribed Lines	Carriers Purchasing Equal Access 1/	Firms with Carrier Identification Codes	Firms Purchasing Access	Carriers Filing TRS Worksheets 2/
1986	March	*	169	231	*	*
	June	*	183	276	*	*
	September	*	190	302	506	*
	December	*	210	334	533	*
1987	March	*	211	360	561	*
	June	*	213	397	*	*
	September	*	224	421	*	*
	December	223	239	451	540	*
1988	March	*	238	471	511	*
	June	242	248	489	519	*
	September	*	256	464	506	*
	December	253	266	493	510	*
1989	March	*	274	520	519	*
	June	276	287	544	*	*
	September	*	304	560	*	*
	December	302	318	577	514	*
1990	March	*	289	594	512	*
	June	314	288	611	506	*
	September	*	304	636	511	*
	December	325	304	601	499	*
1991	March	*	306	571	505	*
	June	355	327	597	542	*
	September	*	337	605	538	*
	December	388	351	631	576	*
1992	March	*	361	616	595	*
	June	425	370	659	577	*
	September	*	379	654	587	*
	December	414	394	692	599	*
1993	March	*	*	*	*	*
	June	412	401	*	*	*
	September	*	401	*	*	*
	December	436	420	*	*	321
1994	March	*	433	*	*	*
	June	454	444	*	*	*
	September	*	458	*	*	*
	December	511	465	*	*	366
1995	March	*	*	*	*	*
	June	549	*	*	*	*
	September	*	*	*	*	*
	December	583	*	*	*	453
1996	March	*	*	*	*	*
	June	582	*	*	*	*
	September	*	*	*	*	*
	December	621	*	*	*	587
1997	December 3/	*	*	*	*	569
1998	December	*	*	*	*	647

* Data not available.

1/ Data for the periods prior to March 1990 include a small number of firms purchasing equal access that were not carriers.
2/ Includes interexchange carriers, operator service providers, other toll carriers, pay card providers, and toll resellers.
3/ The number of carriers with presubscribed lines is no longer available. The only measure available after December 1996 is the number of carriers filing TRS annual worksheets. One company that had filed about fifty separate worksheets in 1996 filed only one consolidated worksheet for 1997.

11 LONG DISTANCE MARKET SHARES:

1. Minutes of Interstate Calling:

Table 11.1 shows total interstate switched access minutes (which include international) reported to the National Exchange Carrier Association by incumbent local exchange carriers for their customers using all long distance carriers. The figures reported in Table 11.1 include access minutes on both the originating and terminating end of long distance calls. Interstate calling has grown steadily, with access minutes growing more than 250 percent, since these data were first reported in the third quarter of 1984.[2]

2. Presubscribed Lines:

A telephone line is said to be presubscribed to the long distance carrier that receives the ordinary long distance calls placed on that line. Where equal access is available, each customer is asked to choose a long distance carrier. Thereafter, all of the customer's long distance calls will be routed to the chosen long distance carrier unless the customer alters normal dialing procedure -- for example, by dialing a special code to access an alternate long distance carrier. Where equal access is not yet available, the use of long distance carriers other than AT&T usually requires alternative dialing procedures.

In the past, NECA provided information on the number of lines presubscribed to each long distance carrier. NECA collected the information from each local telephone company in order to comply with previous FCC rules that required NECA to recover certain expenses from the larger long distance carriers. Following passage of the Telecommunications Act of 1996, the FCC changed its universal service rules, which previously required the collection of this information. As a result, information for December 1996 is the last presubscribed line data collected by NECA. In the past we published this information as well as market shares based on it. The historical information can be found in the *Trends* report published July 1998.

3. Toll Revenues:

The largest long distance telephone companies are required to report their annual revenues to the FCC. The revenues for reporting carriers and the total industry are shown in Table 11.2, and include both interstate and intrastate revenues. Table 11.3 shows market shares based on annual revenues for long distance carriers. Market shares for all competitors in the long distance market (including both long distance companies and local companies) are shown in

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[2] Prior to 1999, the access minutes reported by NECA included carrier common line (CCL) minutes of use for all reporting local exchange carriers. Such CCL minutes were calculated by dividing access revenues by corresponding rates. As selected CCL rates have reached zero, such methodology is no longer feasible. Therefore, beginning with the first quarter of 1999, non-NECA common line tariff participants report local switching minutes instead of CCL minutes.

Table 11.4.

In 1998, services provided by long distance carriers generated about $94 billion in revenues. During the past few years, revenues have grown at a far slower pace than the volume of long distance calling because of sharp price cuts. In 1984, AT&T's toll revenues of $35 billion accounted for 90% of the revenues received by all long distance carriers. By 1998, with its revenues having increased by 16%, its share of total revenues had fallen to about 43%.

Chart 11.4 compares alternative measures of AT&T's market share using minutes, lines, and revenues. In this chart, a second measure of revenues has been added. The alternative measure is based on financial reports to stockholders. Revenues reported to the FCC usually differ from revenues reported to stockholders. The largest differences tend to relate to the treatment of access charges and international settlements, which accounts for the difference between the annual revenue share points labeled "FCC" and the revenue share line labeled "SEC."

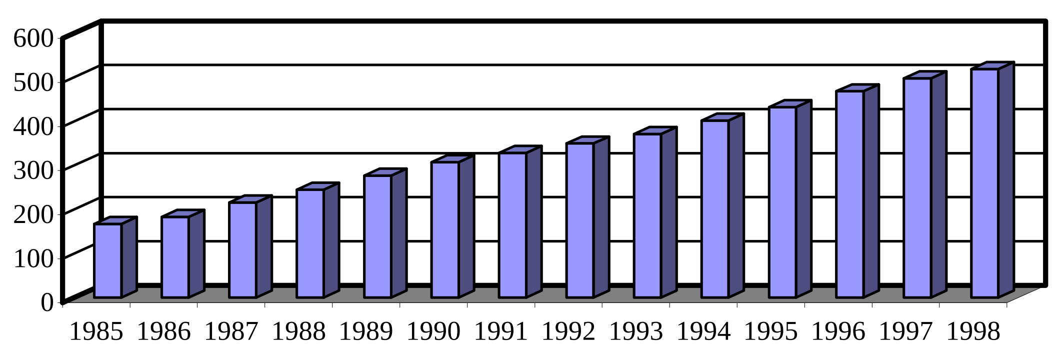
Bill harvesting data collected by PNR and Associates, Inc. (PNR) provide information on market shares in the long distance residential market, as opposed to the overall market for toll service. The bill harvesting data also provide information on the market shares of long distance carriers by state. Section 16 gives further information on PNR and the bill harvesting data. Table 11.5, which is based on this information, presents nation-wide market shares of access lines, residential toll revenue and direct dial minutes from 1995 to 1998. In addition, Table 11.6 presents market shares of residential toll revenue by state for 1998. These tables present long distance market shares for AT&T, MCI WorldCom, Sprint, and Teleglobe (Excel).

TABLE 11.1

INTERSTATE SWITCHED ACCESS MINUTES
(In Billions)

Year	Period	Access Minutes	Year	Period	Access Minutes	Year	Period	Access Minutes
			1990	First Quarter	74.7	1996	First Quarter	115.7
				Second Quarter	75.8		Second Quarter	114.7
1984	Third Quarter	37.5		Third Quarter	77.9		Third Quarter	117.5
	Fourth Quarter	39.6		Fourth Quarter	79.1		Fourth Quarter	120.2
				Total 1990	307.4		Total 1996*	468.0
1985	First Quarter	39.6	1991	First Quarter	79.2	1997	First Quarter	122.1
	Second Quarter	41.5		Second Quarter	81.9		Second Quarter	124.4
	Third Quarter	42.8		Third Quarter	82.6		Third Quarter	124.9
	Fourth Quarter	43.3		Fourth Quarter	84.4		Fourth Quarter	125.8
	Total 1985	167.1		Total 1991	328.0		Total 1997*	497.8
1986	First Quarter	43.0	1992	First Quarter	85.6	1998	First Quarter	124.0
	Second Quarter	44.8		Second Quarter	86.5		Second Quarter	131.3
	Third Quarter	46.7		Third Quarter	87.9		Third Quarter	130.7
	Fourth Quarter	48.5		Fourth Quarter	89.8		Fourth Quarter	132.8
	Total 1986	183.1		Total 1992	349.7		Total 1998*	518.9
1987	First Quarter	51.2	1993	First Quarter	90.6	1999	First Quarter	135.6
	Second Quarter	52.5		Second Quarter	91.2		Second Quarter	138.2
	Third Quarter	55.0		Third Quarter	93.6		Third Quarter	138.2
	Fourth Quarter	57.0		Fourth Quarter	95.9			
	Total 1987	215.7		Total 1993	371.2			
1988	First Quarter	59.0	1994	First Quarter	98.7			
	Second Quarter	59.6		Second Quarter	97.9			
	Third Quarter	62.1		Third Quarter	101.9			
	Fourth Quarter	64.0		Fourth Quarter	102.9			
	Total 1988	244.6		Total 1994*	401.4			
1989	First Quarter	66.2	1995	First Quarter	105.6			
	Second Quarter	68.5		Second Quarter	106.8			
	Third Quarter	69.7		Third Quarter	109.0			
	Fourth Quarter	72.6		Fourth Quarter	110.6			
	Total 1989	277.1		Total 1995*	431.0			

CHART 11.1
INTERSTATE SWITCHED ACCESS MINUTES
(In Billions)



* The National Exchange Carrier Association filed revised yearly (but not quarterly) totals February 15, 2000.

TABLE 11.2
TOTAL OPERATING REVENUES OF LONG DISTANCE SERVICE PROVIDERS
(In Millions)

Company	1998	1997	1996	1995	1994	1993	1992	1991
AT&T Companies 1/								
AT&T Communications, Inc.	$40,551	$39,470	$39,264	$38,069	$37,166	$35,731	$35,495	$34,384
Alascom, Inc.				325	329	320	333	338
ACC Long Distance Corp.	123	122	118					
MCI WorldCom Companies 2/								
MCI WorldCom, Inc.	24,128							
MCI Telecommunications Corp.		17,150	16,372	14,617	11,715	10,947	9,719	8,266
Telecom*USA								
WorldCom, Inc.		5,897	4,485	3,640	2,221	1,145	801	263
Advanced Telecommunications Corp.								356
Metromedia Communications Corp.						297	369	369
ITT Communication Services, Inc.								
Comsystems Network Services						116	135	131
Wiltel, Inc.					917	664	494	405
MFS Intelenet, Inc.			122	118				
Sprint Companies 3/								
Sprint Communications Co.	9,911	8,595	7,944	7,277	6,805	6,139	5,658	5,378
GTE Sprint								
US Telecom								
Qwest Companies 4/		18,794						
LCI Int'l Telecom Corp. d/b/a Qwest Comms. Svcs.	1,664	1,001	1,103	671	453	317	243	208
Qwest Communications Corp.	320							
USLD Communications Corp.	279	241	188	155	136	100		
Teleglobe Companies 5/								
Excel Telecommunications, Inc.	1,219	1,180	1,091	363	156			
Teleglobe USA, Inc.	275							
Telco Holdings, Inc.	264	379	429	215				
Long Distance Wholesale Group	121	176						
Williams Comms.,Inc. f/k/a VYVX, Inc.	1,718	227						
Frontier Companies 6/								
Allnet Comm. Svcs. d/b/a Frontier Comm. Svcs.	874	775	1,119	827	568	436	376	347
Lexitel								
Frontier Communications Int'l, Inc.		223	323	309	306	213	168	155
Frontier Communications of the West, Inc.	539	324		127	144			
Frontier Comm. - North Central Region, Inc.			121	133	123			
Cable & Wireless, Inc.	953	1,066	919	700	654	557	495	406
Vartec Telecom, Inc.	836	820	470	125	107			
IXC Comms. Svcs., Inc. f/k/a IXC Long Distance, Inc.	724	258						
GTE Communications Corp.	607	340						
Star Telecommunications, Inc.	596	376	208					
PT-1 Communications, Inc.	494	358	117					
Pacific Gateway Exchange, Inc.	466	299	162					
RSL Companies 7/								
RSL Communications, LTD.		192						
RSL Com USA	171							
RSL Com Primecall	130							
Westinghouse Communications	127							
Tel-Save, Inc.	426	305	232	180				
Telegroup, Inc.	384	337	213	129				
Intermedia Communications, Inc.	380							
Comm. Telesystems Int'l. d/b/a Worldexchange Comms.	308	345	196	115				
Business Telecom, Inc. 8/	212	195	149	115				
Unidial Communications, Inc.	180							
Primus Companies 9/								
Primus Telecommunications, Inc.	176							
Trescom International, Inc.		158	140					
General Communication, Inc.	175	158	143	120	106	92		
SNET America, Inc.	162	142						
Nos Communications, Inc.	138							
Total-Tel USA Communications, Inc.	137	123						
Working Assets Funding Service, Inc.	131							
ITC^Deltacom Communications, Inc.	122							
Others 10/	4,375	8,797	6,405	5,813	5,445	4,459	4,082	3,437
Total Long Distance Carriers	94,396	90,028	82,033	74,143	67,351	61,533	58,368	54,443
Toll Service Revenues:								
Bell Operating Companies	6,857	7,138	7,950	8,189	9,527	9,849	9,718	10,066
Other Incumbent Local Telephone Companies 10/	2,572	3,077	3,298	3,143	3,848	3,908	3,897	4,049
Caps, Clecs, & Other Local Telephone Companies 10/	1,230	550						
Total Local Exchange Companies	10,658	10,765	11,248	11,332	13,375	13,757	13,615	14,115
Total Revenues of Long Distance Service Providers	$105,055	$100,793	$93,281	$85,475	$80,726	$75,290	$71,983	$68,558

See notes following Table 11.4.

TABLE 11.2
TOTAL OPERATING REVENUES OF LONG DISTANCE SERVICE PROVIDERS - CONTINUED
(In Millions)

Company	1990	1989	1988	1987	1986	1985	1984
AT&T Companies 1/							
AT&T Communications, Inc.	$33,880	$34,549	$35,407	$35,219	$36,514	$36,770	$34,935
Alascom, Inc.	259	278	272	262	267	271	255
ACC Long Distance Corp.							
MCI WorldCom Companies 2/							
MCI WorldCom, Inc.							
MCI Telecommunications Corp.	7,392	6,171	4,886	3,938	3,372	2,331	1,761
Telecom*USA		713	524	396	291	201	105
WorldCom, Inc.	154	110					
Advanced Telecommunications Corp.	342	326	178	162	124	86	72
Metromedia Communications Corp.	381	127					
ITT Communication Services, Inc.		404	379	287	282	241	161
Comsystems Network Services	130						
Wiltel, Inc.	376	300					
MFS Intelenet, Inc.							
Sprint Companies 3/							
Sprint Communications Co.	5,041	4,320	3,405	2,592	1,141		
GTE Sprint					779	1,122	1,052
US Telecom					212	387	
Qwest Companies 4/							
LCI Int'l Telecom Corp. d/b/a Qwest Comms. Svcs.	215	197					
Qwest Communications Corp.							
USLD Communications Corp.							
Teleglobe Companies 5/							
Excel Telecommunications, Inc.							
Teleglobe USA, Inc.							
Telco Holdings, Inc.							
Long Distance Wholesale Group							
Williams Comms.,Inc. f/k/a VYVX, Inc.							
Frontier Companies 6/							
Allnet Comm. Svcs. d/b/a Frontier Comm. Svcs.	326	334	394	395	450	309	
Lexitel						127	
Frontier Communications Int'l, Inc.	142	104					
Frontier Communications of the West, Inc.							
Frontier Comm. - North Central Region, Inc.							
Cable & Wireless, Inc.	359	275	218	180	171	146	
Vartec Telecom, Inc.							
IXC Comms. Svcs., Inc. f/k/a IXC Long Distance, Inc.							
GTE Communications Corp.							
Star Telecommunications, Inc.							
PT-1 Communications, Inc.							
Pacific Gateway Exchange, Inc.							
RSL Companies 7/							
RSL Communications, LTD.							
RSL Com USA							
RSL Com Primecall							
Westinghouse Communications							
Tel-Save, Inc.							
Telegroup, Inc.							
Intermedia Communications, Inc.							
Comm. Telesystems Int'l. d/b/a Worldexchange Comms.							
Business Telecom, Inc. 8/							
Unidial Communications, Inc.							
Primus Companies 9/							
Primus Telecommunications, Inc.							
Trescom International, Inc.							
General Communication, Inc.							
SNET America, Inc.							
Nos Communications, Inc.							
Total-Tel USA Communications, Inc.							
Working Assets Funding Service, Inc.							
ITC^Deltacom Communications, Inc.							
Others 10/	3,105	2,976	1,823	1,352	992	639	414
Total Long Distance Carriers	52,102	51,184	47,487	44,783	44,595	42,630	38,755
Toll Service Revenues:							
Bell Operating Companies	10,578	10,549	10,668	10,268	9,599	9,026	9,037
Other Incumbent Local Telephone Companies 10/	4,112	4,291	4,445	3,468	3,274	3,159	3,364
Caps, Clecs, & Other Local Telephone Companies 10/							
Total Local Exchange Companies	14,690	14,840	15,113	13,736	12,873	12,185	12,401
Total Revenues of Long Distance Service Providers	$66,792	$66,024	$62,600	$58,519	$57,468	$54,815	$51,156

See notes following Table 11.4.

TABLE 11.3

TOTAL TOLL SERVICE REVENUES - MARKET SHARE
(Based on Revenues of Long Distance Carriers Only)

YEAR	AT&T	MCI WorldCom		Sprint	All Other Long Distance Carriers	Herfindahl-Hirschman Index (HHI) *
		MCI	WorldCom			
1984	90.1 %	4.5 %		2.7 %	2.6 %	8,155
1985	86.3	5.5		2.6	5.6	7,479
1986	81.9	7.6		4.3	6.3	6,783
1987	78.6	8.8		5.8	6.8	6,298
1988	74.6	10.3		7.2	8.0	5,720
1989	67.5	12.1	0.2 %	8.4	11.8	4,778
1990	65.0	14.2	0.3	9.7	10.8	4,527
1991	63.2	15.2	0.5	9.9	11.3	4,321
1992	60.8	16.7	1.4	9.7	11.5	4,074
1993	58.1	17.8	1.9	10.0	12.3	3,795
1994	55.2	17.4	3.3	10.1	14.0	3,466
1995	51.8	19.7	4.9	9.8	13.8	3,197
1996	47.9	20.0	5.5	9.7	17.0	2,823
1997	44.0	19.0	6.5	9.5	20.9	2,431
1998	43.1	25.6		10.5	20.9	2,641

* FCC estimate.

CHART 11.2
TOTAL TOLL REVENUE MARKET SHARES FOR LONG DISTANCE CARRIERS
(Percent)

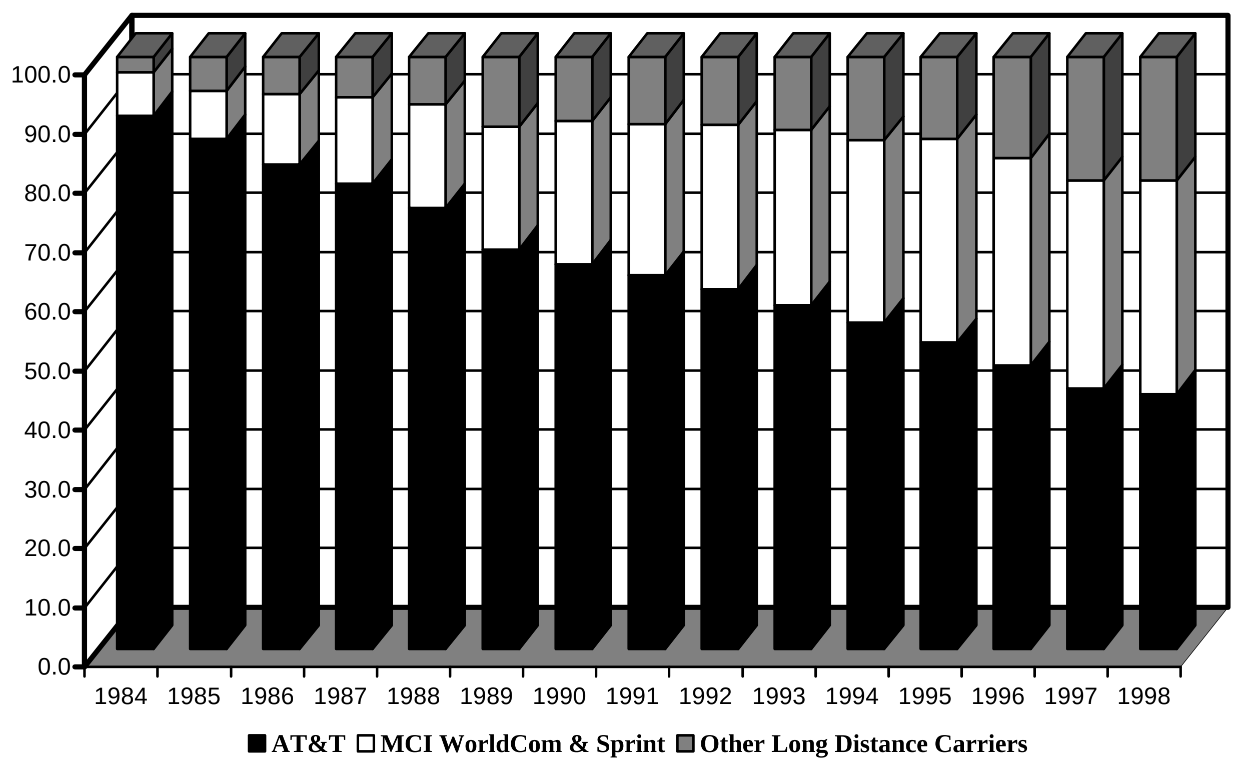


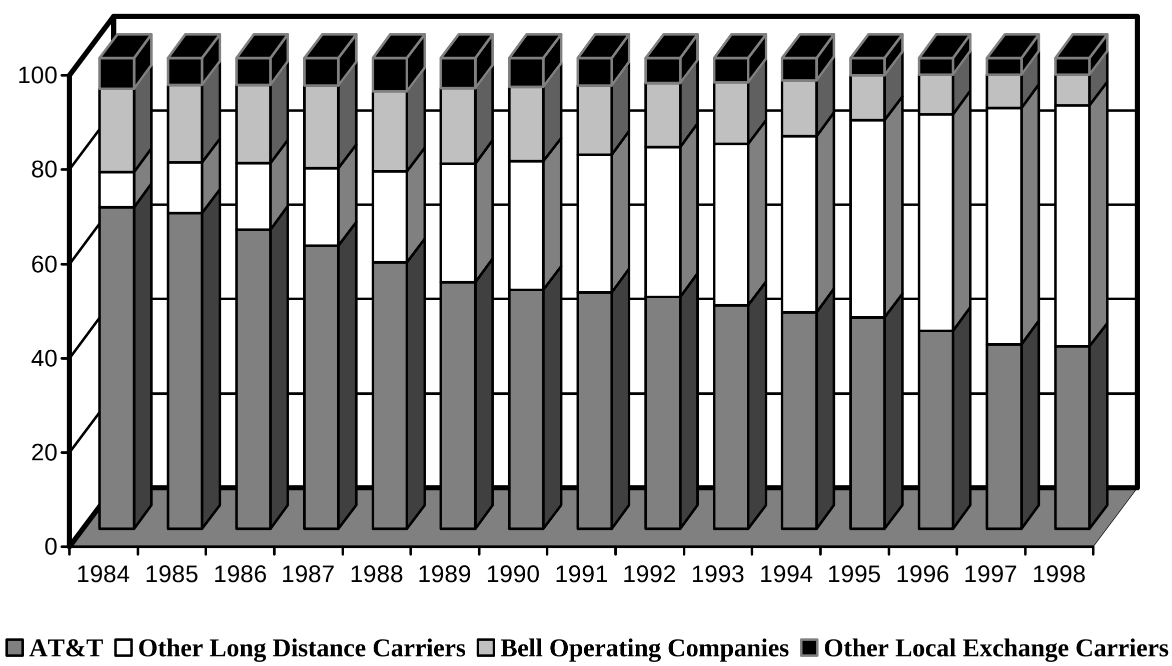
TABLE 11.4

TOTAL TOLL SERVICE REVENUES - MARKET SHARE
(Based on Revenues of Long Distance Toll Providers)

		MCI WorldCom			All Other	Bell	Other Local	Herfindahl-
YEAR	AT&T	MCI	WorldCom	Sprint	Long Distance	Operating Companies	Telephone Companies	Hirschman Index (HHI) *
1984	68.3 %	3.4 %		2.1 %	2.0 %	17.7 %	6.6 %	4,734
1985	67.1	4.3		2.0	4.4	16.5	5.8	4,571
1986	63.5	5.9		3.3	4.9	16.7	5.7	4,129
1987	60.2	6.7		4.4	5.2	17.5	5.9	3,742
1988	56.6	7.8		5.4	6.1	17.0	7.1	3,344
1989	52.3	9.3	0.2 %	6.5	9.1	16.0	6.5	2,920
1990	50.7	11.1	0.2	7.5	8.4	15.8	6.2	2,801
1991	50.2	12.1	0.4	7.8	9.0	14.7	5.9	2,768
1992	49.3	13.5	1.1	7.9	9.3	13.5	5.4	2,715
1993	47.5	14.5	1.5	8.2	10.1	13.1	5.2	2,568
1994	46.0	14.5	2.8	8.4	11.7	11.8	4.8	2,440
1995	44.9	17.1	4.3	8.5	12.0	9.6	3.7	2,390
1996	42.1	17.6	4.8	8.5	15.0	8.5	3.5	2,197
1997	39.2	17.0	5.9	8.5	18.8	7.1	3.6	1,958
1998	38.7	23.0		9.4	18.7	6.5	3.6	2,148

* FCC estimate.

CHART 11.3
TOTAL TOLL REVENUE MARKET SHARES FOR LONG DISTANCE CARRIERS INCLUDING TOLL REVENUES FOR LOCAL EXCHANGE CARRIERS
(Percent)



NOTES FOR TABLE 11.2.

1/ AT&T Communications, Inc. acquired Alascom, Inc. and ACC Long Distance Corp. in 1995 and 1998, respectively.

2/ Metromedia Communications Corp. and ITT Communications Services, Inc. merged during 1998. LDDS Communications, Inc. and Advanced Telecommunications Corp. merged in 1992. In 1993 LDDS merged with Metromedia and Comsystems Network Services. For 1993 only the revenues that were received after the mergers are included in LDDS's revenues. Those revenues up to the merger are listed individually for 1993. LDDS and Wiltel merged in 1995. In 1995 LDDS changed its name to WorldCom, Inc. Worldcom acquired MFS Intelenet in 1996. MCI Communications Corp. and Telecom*USA merged in 1989. MCI and WorldCom merged in 1998 forming MCI Worldcom, Inc.

3/ In 1986, GTE Sprint and US Telecom merged into US Sprint. The information shown for GTE Sprint and US Telecom for 1986 is for January 1 - June 30. The information shown for Sprint Communications Corp. (then US Sprint) for 1986 is for July 1 - December 31. United Telecommunications, Inc., then majority owner of US Sprint, purchased the remaining interest from GTE in 1992. In 1992, the company's name became Sprint Communications Co.

4/ In 1997, U.S. Long Distance, Inc. changed its name to USLD Communications, Inc. LCI International Telecom Corp. and USLD merged in 1997. In 1998 LCI merged with Qwest Communications Corp.

5/ Excel Telecommunications, Inc. acquired Telco Holdings, Inc. in 1997. Telco and its affiliate Long Distance Wholesale Group filed a consolidated revenue statement for 1996. Excel, Telco, and Long Distance Wholesale each filed separate revenue statements for 1997. Excel merged with Teleglobe Holdings, Inc. in 1998.

6/ Allnet Communications Services and Lexitel merged at the end of 1985. In 1994, RCI Long Distance, Inc. changed its name to Frontier Communications International, Inc. Frontier Corporation, the parent company of Frontier Communications International, Inc., acquired ALC Communications, the parent company of Allnet in 1995. In 1995, Frontier Corporation acquired WCT Communications, the parent company of West Coast Communications, which is now known as Frontier Communications of the West, Inc. In addition, in 1995, Frontier Corporation acquired American Sharecom, which is now Frontier Communications of the North Central Region.

7/ RSL Communications, Ltd., the parent company of RSL Com USA, RSL Primecall and Westinghouse Communications, reported consolidated revenues for 1997, but separate revenues for each subsidiary in 1998. RSL Communications acquired Westinghouse in 1998.

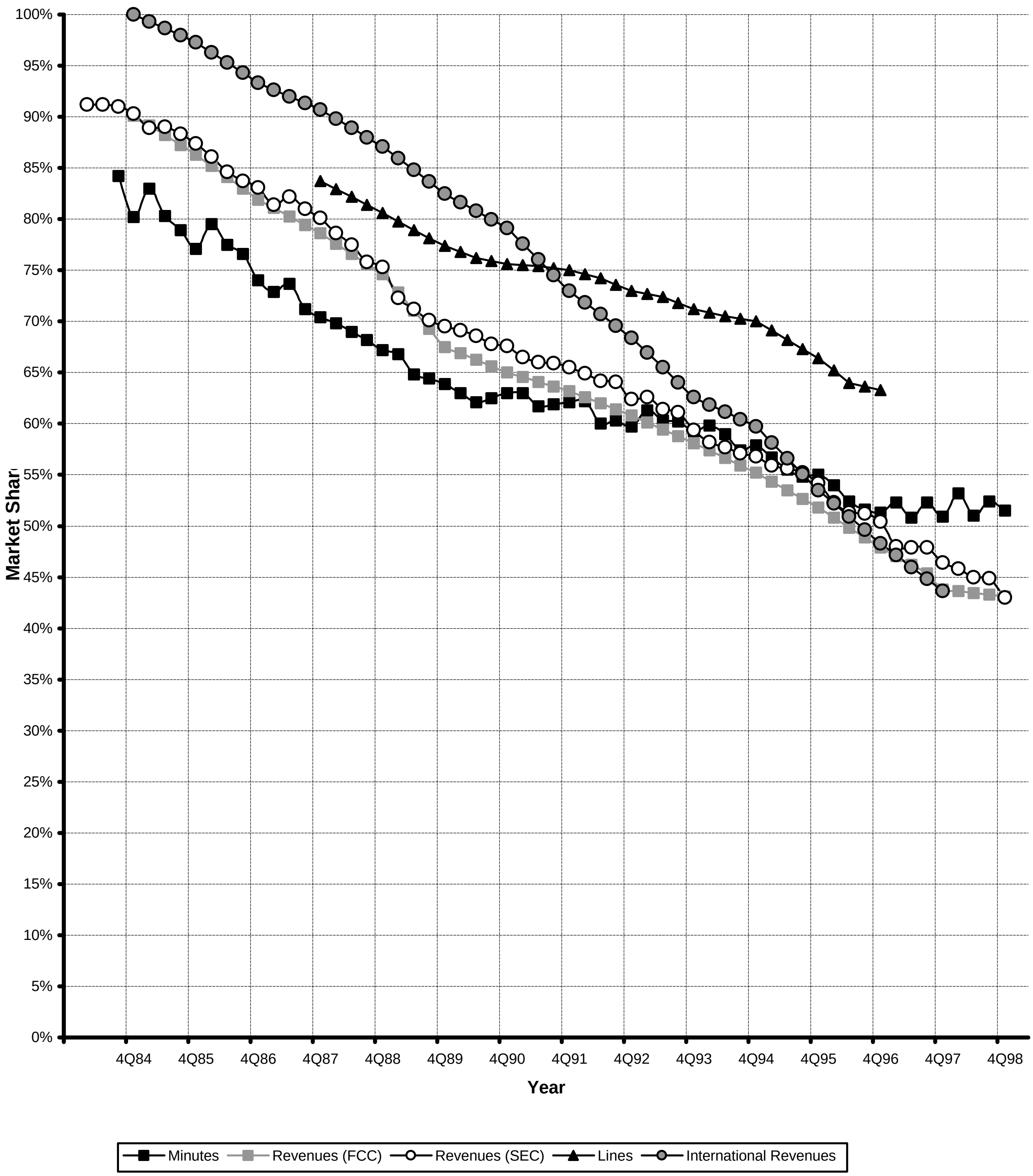
8/ Data for 1996 taken from the Annual Report to the Colorado Public Utilities Commission for telecommunications carriers regulated pursuant to §40-15-301 C.R.S.

9/ Primus Telecommunications, Inc. acquired Trescom International, Inc. in 1998.

10/ Estimated by FCC staff.

CHART 11.4

INDICATORS OF AT&T MARKET SHARE



Source: Industry Analysis Division, *Long Distance Market Shares.*

TABLE 11.5
RESIDENTIAL MARKET SHARE: 1995 - 1998

	AT&T	MCI WorldCom*	Sprint	Teleglobe (Excel)**	Other
Access Lines***					
1995	74.6 %	13.0 %	4.2 %	N.A	8.3 %
1996	69.9	14.1	5.0	2.8 %	8.2
1997	67.2	13.2	5.7	3.8	10.1
1998	62.6	15.1	5.7	3.6	13.0
Toll Revenue					
1995	68.5 %	14.6 %	5.6 %	N.A.	11.3 %
1996	63.3	16.0	6.6	N.A.	14.1
1997	61.1	16.6	5.6	3.8 %	13.0
1998	58.3	18.4	5.7	3.3	14.3
Direct Dial Minutes					
1995	69.5 %	16.1 %	5.8 %	N.A	8.6 %
1996	62.5	15.9	7.1	3.1 %	11.4
1997	62.4	14.9	6.5	3.7	12.5
1998	58.4	17.0	6.5	3.7	14.3

Source: PNR and Associates, Inc., *Bill Harvesting II, Bill Harvesting III* and *MarketShare Monitor.*

Market shares for past years have been revised to take into account mergers and acquisitions and changes in methodology.

* 1995: only includes MCI; 1996: includes MCI and LDDS; 1997 and 1998: includes all of MCI's and WorldCom's affiliates.

** 1996: only includes Excel; 1997 and 1998: includes all of Teleglobe's and Excel's affiliates.

*** In 1995 and 1996, the household's primary long distance carrier was identified by PNR; in 1997, a household's primary long distance carrier was determined based on calls made through long distance carriers; and in 1998, a household's primary long distance carrier was determined based on interlata calls.

TABLE 11.6

MARKET SHARE OF RESIDENTIAL TOLL REVENUE BY STATE: 1998*

	AT&T	MCI WorldCom	Sprint	Teleglobe (Excel)	Other	Sample Size
Alabama	53.6 %	20.3 %	5.4 %	4.2 %	16.5 %	454
Arizona	58.3	16.4	6.5	1.1	17.6	483
Arkansas	60.4	12.5	2.9	4.0	20.2	265
California	54.7	21.5	7.6	2.9	13.4	2,601
Colorado	60.5	16.2	5.1	3.9	14.3	427
Connecticut	41.8	22.8	6.2	0.7	28.5	282
Delaware	75.5	5.1	5.1	1.4	12.9	80
Dist. of Columbia	26.2	20.9	12.5	1.5	38.9	34
Florida	63.1	18.1	5.9	3.3	9.6	1,532
Georgia	58.6	18.4	5.3	4.6	13.1	691
Idaho	47.9	19.2	9.3	2.9	20.7	116
Illinois	63.2	16.8	4.4	2.3	13.3	1,114
Indiana	58.2	21.1	3.6	4.1	13.0	648
Iowa	48.7	24.4	2.8	3.1	21.0	320
Kansas	57.5	10.1	10.5	6.1	15.8	277
Kentucky	49.5	26.3	3.5	4.5	16.3	410
Louisiana	60.4	14.3	1.8	1.7	21.8	351
Maine	66.7	9.4	3.4	0.0	20.5	111
Maryland	56.7	17.1	6.4	4.5	15.2	505
Massachusetts	72.3	10.9	8.2	1.3	7.4	502
Michigan	54.7	24.4	4.6	3.3	13.0	945
Minnesota	55.4	20.9	4.1	4.1	15.4	530
Mississippi	64.0	11.4	5.2	1.9	17.5	253
Missouri	58.9	14.7	3.7	2.8	20.0	505
Montana	54.8	16.7	4.7	3.7	20.2	118
Nebraska	55.8	16.9	2.6	10.5	14.2	178
Nevada	58.9	12.5	16.6	4.0	7.9	139
New Hampshire	54.1	23.2	9.9	3.0	9.8	101
New Jersey	67.2	14.9	6.0	2.0	9.9	717
New Mexico	45.0	20.2	15.7	6.1	12.9	156
New York	61.0	17.5	5.8	3.7	12.1	1,587
North Carolina	64.4	12.6	7.8	2.8	12.3	714
North Dakota	52.3	31.3	0.0	7.6	8.8	84
Ohio	56.1	19.6	5.6	3.8	15.0	1,181
Oklahoma	57.5	16.7	1.0	5.1	19.6	326
Oregon	63.7	13.1	2.6	3.9	16.8	351
Pennsylvania	60.5	19.2	3.8	1.6	15.0	1,182
Rhode Island	75.0	8.0	3.9	2.7	10.4	90
South Carolina	59.3	11.7	7.5	5.1	16.4	344
South Dakota	54.3	20.0	0.6	4.6	20.4	90
Tennessee	57.7	17.7	7.6	2.9	14.1	527
Texas	54.3	19.9	6.0	3.2	16.6	1,635
Utah	42.7	20.4	9.4	1.9	25.6	186
Vermont	67.2	8.9	10.1	0.0	13.7	58
Virginia	55.5	21.5	7.0	4.3	11.7	616
Washington	59.3	19.1	4.8	3.6	13.2	556
West Virginia	57.2	22.1	3.1	4.6	13.1	194
Wisconsin	58.7	20.5	2.9	4.5	13.5	657
Wyoming	48.5	19.1	3.2	4.5	24.7	64
Total	58.3	18.4	5.7	3.3	14.3	25,287

Source: PNR and Associates, Inc., *MarketShare Monitor.*

* Market share is based on long distance carrier revenue. Residential toll revenue does not include taxes. Caution should be used in interpreting market shares for states with small sample sizes.

12 MINUTES OF CALLING:

1. Dial Equipment Minutes:

As in the case of telephone lines, there are several alternative measures of calling volumes. Most subscribers purchase service with unlimited local calling. As a result, most calls are not metered and estimates of total calling are subject to wide margins of error. Periodic studies are used within the telephone industry to estimate the number of calls and calling minutes for a variety of purposes. For example, periodic studies of dial equipment minutes (DEMs) are used to estimate the proportion of calling that is interstate and to allocate costs between interstate and intrastate services.

DEMs, which are shown in Table 12.1, are measured as calls enter and leave telephone switches; therefore, two DEMs are counted for every conversation minute. (Individual company and state data can be found in our *Monitoring Report* on the **FCC-State Link** web page.) Until recently, the volume of local calling grew at approximately the same rate as the number of local telephone lines. In contrast, the volume of long distance calling surged as prices fell. As a result, a greater portion of calls are long distance. Intrastate toll minutes increased from 8% of all minutes in 1980 to 11% in 1998. During that same period, interstate calling minutes increased from 8% of the total to 14%.

As shown in Table 12.2, the average telephone line is used primarily for local calling and is used about an hour per day for all calls (local, intrastate toll, and interstate toll). The level of local calling has remained relatively constant for a long period of time. However, in recent years it has begun to surge due to the introduction of facsimile machines, computer modems, and other devices that use telephone lines. Increases in local and long distance calling have caused the total usage per line to increase from 46 minutes in 1980 to 60 minutes in 1998.

2. Switched Access Minutes:

An alternative measure of interstate calling became available in 1984. Switched access minutes are those minutes transmitted by long distance carriers that also use the distribution networks of local telephone companies. The measure includes minutes associated with ordinary long distance calls and the "open end" of WATS and 800-like calls. It excludes calls made on private telecommunications systems, on leased lines, and minutes on the "closed end" of WATS and 800-like calls. On ordinary long distance calls, minutes are counted both where the call originates and where the call terminates.

Table 12.3 shows the total number of interstate switched access minutes handled by all long distance carriers. The number of minutes has grown steadily since mid-1984, stemming from a combination of overall economic growth and price reductions. Premium minutes have grown rapidly, reflecting both strong underlying traffic growth and the conversion of offices to equal access. Non-premium minutes (principally minutes handled by AT&T's competitors in areas where equal access has not yet been provided) continue to decline as the process of conversion to equal access is near completion.

Telephone industry traffic experts often argue that dial equipment minutes represent the best available information on the proportions of different types of calls, while access minutes are the most accurate available data on the volume of interstate calling. However, it is not clear why reported changes in access minutes are not entirely consistent with reported changes in dial equipment minutes.

TABLE 12.1

DIAL EQUIPMENT MINUTES
(Minutes Shown in Billions)

	Local	Intrastate Toll	Interstate Toll	Total
1980	1,458	141	133	1,733
1981	1,492	151	144	1,787
1982	1,540	158	154	1,853
1983	1,587	166	169	1,923
1984	1,639	198	208	2,045
1985	1,673	222	250	2,145
1986	1,699	237	270	2,207
1987	1,713	253	295	2,261
1988	1,795	269	321	2,384
1989	1,829	286	344	2,459
1990	1,846	298	353	2,497
1991	1,859	302	366	2,527
1992	1,926	311	381	2,618
1993	2,027	316	396	2,739
1994	2,126	327	420	2,873
1995	2,224	346	454	3,025
1996	2,402	373	490	3,265
1997	2,695	407	528	3,630
1998	2,986	422	555	3,962
Increase Over Prior Year				
1981	2 %	7 %	8 %	3 %
1982	3	5	7	4
1983	3	5	10	4
1984	3	19	23	6
1985	2	12	20	5
1986	2	7	8	3
1987	1	7	9	2
1988	5	6	9	5
1989	2	6	7	3
1990	1	4	3	2
1991	1	1	4	1
1992	4	3	4	4
1993	5	2	4	5
1994	5	3	6	5
1995	5	6	8	5
1996	8	8	8	8
1997	12	9	8	11
1998	11	4	5	9
Percent Distribution				
1980	84 %	8 %	8 %	100 %
1981	83	8	8	100
1982	83	9	8	100
1983	83	9	9	100
1984	80	10	10	100
1985	78	10	12	100
1986	77	11	12	100
1987	76	11	13	100
1988	75	11	13	100
1989	74	12	14	100
1990	74	12	14	100
1991	74	12	14	100
1992	74	12	15	100
1993	74	12	14	100
1994	74	11	15	100
1995	74	11	15	100
1996	74	11	15	100
1997	74	11	15	100
1998	75	11	14	100

Source: National Exchange Carrier Association.

TABLE 12.2

LINE USAGE PER DAY
(Dial Equipment Minutes per Local Loop)

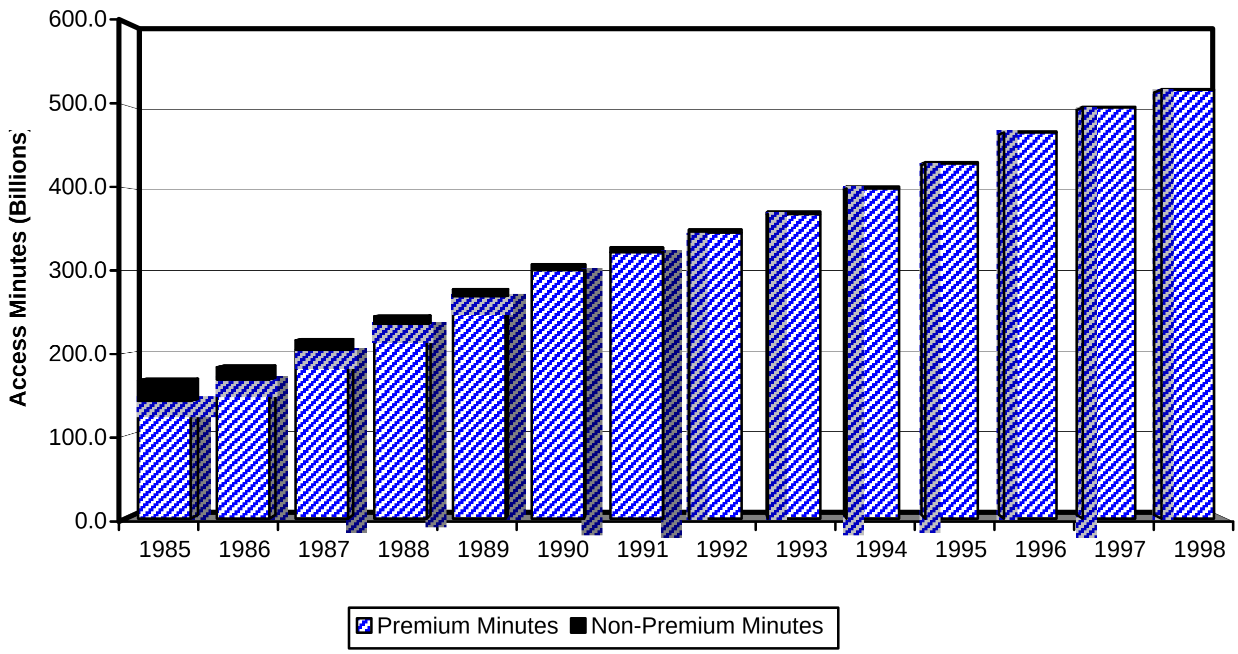
	Local	Intrastate Toll	Interstate Toll	Total
1980	39	4	4	46
1981	39	4	4	46
1982	39	4	4	47
1983	39	4	4	48
1984	40	5	5	50
1985	40	5	6	51
1986	39	5	6	51
1987	38	6	7	50
1988	39	6	7	51
1989	38	6	7	51
1990	37	6	7	50
1991	37	6	7	50
1992	37	6	7	50
1993	37	6	7	51
1994	38	6	8	51
1995	38	6	8	52
1996	39	6	8	54
1997	42	6	8	57
1998	45	6	8	60
Increase Over Prior Year				
1981	-1 %	4 %	5 %	0 %
1982	1	3	5	2
1983	0	2	7	1
1984	1	17	21	4
1985	-1	9	17	2
1986	-0	5	6	1
1987	-3	3	5	-1
1988	1	2	5	2
1989	-1	3	4	-0
1990	-2	1	-1	-2
1991	-2	-1	1	-1
1992	0	-0	1	0
1993	2	-1	1	2
1994	1	-0	3	1
1995	1	2	4	1
1996	3	3	3	3
1997	8	5	3	7
1998	7	0	2	6

TABLE 12.3

INTERSTATE SWITCHED ACCESS MINUTES
(Figures Shown in Billions)

	Premium Minutes	Non-Premium Minutes	Total Minutes
1985	142.4	24.7	167.1
1986	168.5	14.6	183.1
1987	203.9	11.9	215.7
1988	235.4	9.2	244.6
1989	269.1	8.0	277.1
1990	300.4	7.1	307.4
1991	322.2	5.8	328.0
1992	345.5	4.2	349.8
1993	368.3	3.0	371.2
1994	399.3	2.1	401.4
1995	429.4	1.6	431.0
1996	466.8	1.2	468.0
1997	497.1	0.7	497.8
1998	518.5	0.4	518.9

CHART 12.1
INTERSTATE SWITCHED ACCESS MINUTES



Source: Industry Analysis Division, *Long Distance Market Shares* and National Exchange Carrier Association.

13 PRICE INDICES FOR TELEPHONE SERVICES:

The Bureau of Labor Statistics (BLS) collects a variety of information on telephone service as part of three separate programs -- the Consumer Price Index (CPI), the Producer Price Index (PPI), and the Consumer Expenditure Survey. They can be found on the internet at http://stats/bls.gov/blshome.html on the World Wide Web. The following material illustrates the range of information available from price indices.

1. Long-Term Trends in Price Indices:

A price index for telephone service was first published in 1935. Since that time, telephone prices have tended to increase at a slower pace than most other prices. Table 13.1 shows long-term changes in the Consumer Price Indices for all items, all services, telephone services, each of the seven major categories that currently constitute the overall CPI, and several services that are often characterized as being public utilities.

2. Comprehensive Price Indices:

The CPI index of telephone services is based on a market basket intended to represent the telephone related expenditures of a typical urban household. It includes both local, long distance, and cellular services. The annual rate of change is shown in Table 13.2 for the overall CPI (which measures the impact of inflation on consumers) and the CPI for telephone services. In addition, Table 13.2 shows the Gross Domestic Product chain-type price index (which measures inflation throughout the economy) prepared by the Bureau of Economic Analysis.

3. Price Index for Local Service:

The CPI index of local telephone charges is based on a broadly defined market basket that includes: monthly service charges, message unit charges, leased equipment, installation, service enhancements (such as tone dialing and call waiting), taxes, and subscriber line charges. In contrast, the PPI index of monthly residential rates is much more narrowly defined. It is based only on monthly service charges for residential service, optional touch-tone service, and subscriber line charges. It excludes taxes, charges for special services such as call waiting, and all other expenditures. The annual rates of change for these indices of local costs are presented in Table 13.3.

4. Price Indices for Long Distance Service:

Price indices are available for intrastate toll and interstate toll services. These series are also presented in Table 13.3.

5. Price Index Limitations:

Price indices are less reliable when industries are changing rapidly. For example, in 1992, long distance carriers began to increase basic rates while greatly expanding their range of discount offerings. The fixed market basket of toll calls measured for the CPI did not fully reflect these discounts. In 1995, BLS made major changes to the PPI telephone series, and there are no data after July 1995 comparable with prior data. Because of these sorts of difficulties, measures of average revenues are sometimes used as alternatives to price indices.

TABLE 13.1
LONG-TERM CHANGES FOR VARIOUS PRICE INDICES
(Annual Rates of Change)

	1936 - 1999	1989 - 1999
CPI all items	4.0 %	3.2 %
CPI all services	4.4	3.7
CPI telephone services***	2.0	0.9
CPI major categories:		
- food & beverages	*	3.1
- housing	*	3.0
- apparel	2.9	1.4
- transportation	3.7	2.8
- medical care	5.1	5.5
- recreation **	*	1.9
- other goods & services	*	5.9
CPI public transportation	4.9	4.3
CPI utility natural gas service	3.5	2.0
CPI electricity	2.1	1.2
CPI sewer & water maintenance	*	4.7
CPI postage	4.1	3.5

Source: Bureau of Labor Statistics.

* Series not established until after 1935.

** Series not established until 1993. Figure reflects annual change between 1993 and 1999.

*** The CPI telephone service index was revised in December of 1997.

TABLE 13.2
ANNUAL CHANGES IN MAJOR PRICE INDICES

	GDP Chain-type Price Index	CPI - All Items	CPI - Telephone Services
1978	7.4 %	9.0 %	0.9 %
1979	8.3	13.3	0.7
1980	9.6	12.5	4.6
1981	8.3	8.9	11.7
1982	5.1	3.8	7.2
1983	3.6	3.8	3.6
1984	3.5	3.9	9.2
1985	3.0	3.8	4.7
1986	2.2	1.1	2.7
1987	3.1	4.4	-1.3
1988	3.7	4.4	1.3
1989	3.6	4.6	-0.3
1990	4.1	6.1	-0.4
1991	2.8	3.1	3.5
1992	2.2	2.9	-0.3
1993	2.7	2.7	1.8
1994	2.0	2.7	0.7
1995	2.1	2.5	1.2
1996	1.7	3.3	2.1
1997	1.6	1.7	0.2
1998	1.1	1.6	0.3 *
1999	1.6 **	2.7	0.4

Sources: Bureau of Labor Statistics and Bureau of Economic Analysis.
* The CPI telephone service index was revised in December of 1997.
** Advance estimate.

CHART 13.1

CPI: ALL ITEMS AND TELEPHONE SERVICES

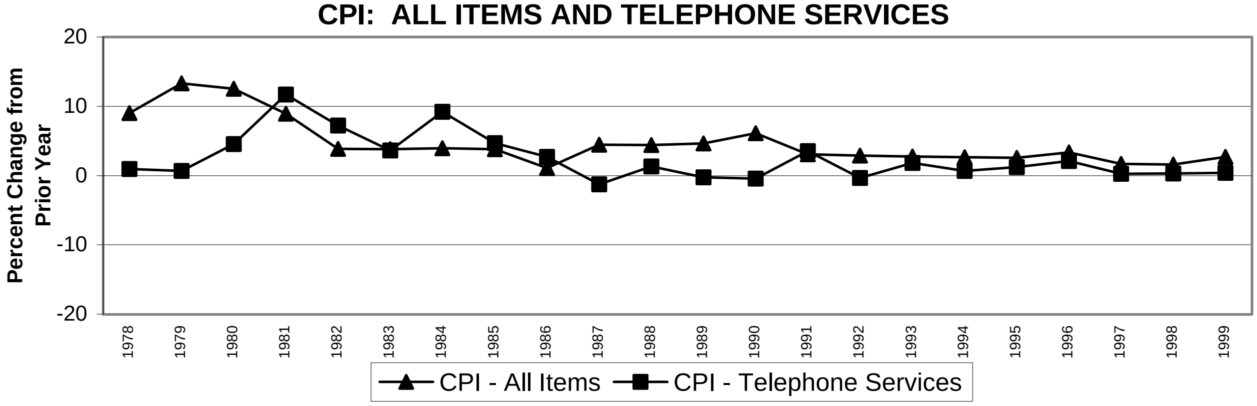


TABLE 13.3
ANNUAL CHANGES IN PRICE INDICES FOR LOCAL AND LONG DISTANCE TELEPHONE SERVICES

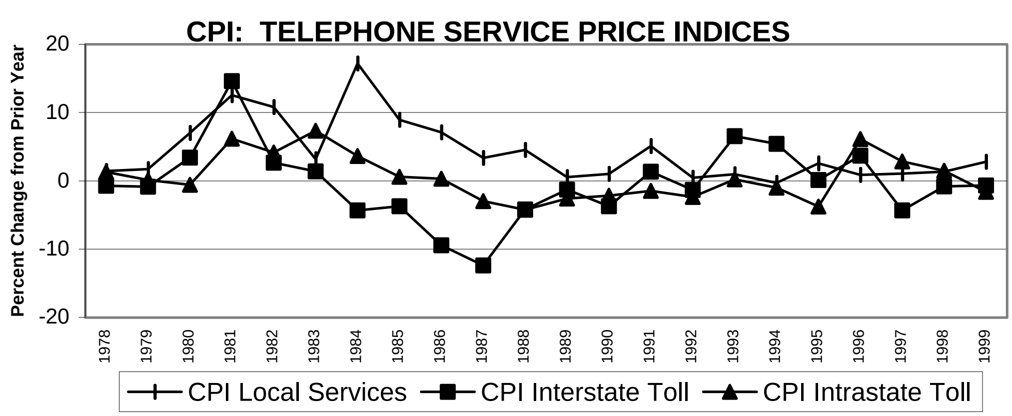
	Local Residential Service		Toll Service *			
			Interstate		Intrastate	
	CPI	PPI	CPI	PPI	CPI	PPI
1978	1.4 %	3.1 %	-0.7 %	0.0 %	1.3 %	0.1 %
1979	1.7	1.6	-0.8	-0.9	0.1	-0.7
1980	7.0	7.1	3.4	5.5	-0.6	2.3
1981	12.6	15.6	14.6	15.9	6.2	8.0
1982	10.8	9.0	2.7	3.9	4.2	1.7
1983	3.1	0.2	1.4	0.0	7.4	3.9
1984	17.2	10.4	-4.3	-5.1	3.6	3.8
1985	8.9	12.4	-3.7	-3.0	0.6	2.1
1986	7.1	8.9	-9.4	-10.0	0.3	-3.5
1987	3.3	2.6	-12.4	-11.8	-3.0	-3.0
1988	4.5	4.6	-4.2	-2.1	-4.2	-3.8
1989	0.6	1.9	-1.3	-1.7	-2.6	0.5
1990	1.0	1.5	-3.7	-0.1	-2.2	-2.2
1991	5.1	2.1	1.3	-1.3	-1.5	-2.6
1992	0.5	-0.2	-1.3	1.0	-2.4	1.3
1993	1.0	0.8	6.5	3.8	0.2	-1.1
1994	-0.3	0.7	5.4	6.1	-1.0	-1.4
1995	2.6	**	0.1	**	-3.8	**
1996	0.9	0.2	3.7	2.5	6.1	0.5
1997	1.0	0.2	-4.3	3.6	2.8	-4.0
1998	1.3	-0.1	-0.8	0.0	1.5	-3.3
1999	2.8		-0.7		-1.6	

Source: Bureau of Labor Statistics.

* CPI toll indices represent rates for households. Through 1994, PPI toll indices represent rate changes for both business and residential consumers. Since 1995, PPI indices reflect rates for residential customers.

** The PPI telephone indices were revised in June of 1995. The series are not comparable. Due to substantial month to month variation in the new PPI indices, PPI price levels are determined using a five-month weighted average.

CHART 13.2



14 PRICE LEVELS:

1. Local Rate Levels:

The price indices maintained by the Bureau of Labor Statistics indicate percentage changes in the price of telephone services. BLS does not publish actual rate levels. Calculations of average rates are based on surveys by FCC staff. These surveys use the same sampling areas and weights used by BLS in constructing the Consumer Price Index.

Table 14.1 presents average local rates for residential customers in urban areas. In October 1999, the monthly charge was $19.87, while the average charge for connecting phone service was $43.90.

Table 14.2 presents average local rates for a business with a single phone line in an urban area. In October 1999, the representative monthly charge was $41.00 while the charge for connecting phone service was $72.48.

The Rural Utilities Service (RUS), formerly the Rural Electrification Administration, is an agency of the U.S. Department of Agriculture. RUS, through its telecommunications lending program, finances the construction of telecommunications infrastructure in rural America. In performing its loan monitoring and servicing functions, it collects information about the telephone companies that are its borrowers. Included in the information collected are the rates RUS borrowers charge business and residential customers. RUS can be found on the internet at <http://www.usda.gov/rus/>. Table 14.3 presents the national average rates of RUS borrowers from 1994 through 1997. These rates do not include subscriber line charges, surcharges, 911 charges, or taxes. In addition, they do not include any charges that may be imposed on customers that are more than a certain distance from the telephone company's central office. These mileage charges can be substantial.

2. Long Distance Rates:

In Table 14.4, AT&T's basic schedule prices for directly dialed long distance calls are shown for January 1984 and January 2000. Higher charges apply to other types of calls such as those using operator assistance. Lower prices are available through calling plans and other volume discounts. In 1993, AT&T first began to charge different rates to residential and business customers. Since 1984, AT&T's basic schedule charges for directly dialed interstate calls have been reduced about 35% for residential callers and 20% for business callers.

Table 14.5 contains average revenue per minute for interstate calls. From 1984 to 1994, AT&T's average revenue per minute declined from 32 cents per minute to 18 cents per minute -- a drop of 40%. Table 14.5 also shows revenue-per-minute estimates calculated by the FCC staff for all carriers. These estimates show that billed revenue per minute has continued to decline for both international and domestic services. Table 14.6 shows revenue per minute for 1930 - 1998.

For comparison, the table also shows the per-minute charges restated to 1998 dollars. In 1930, about two-thirds of interstate calls covered less than 200 miles and consumers made almost no international calls. Today, about two-thirds of interstate calls are greater than 200 miles and more than 5% of calls are to international points.

TABLE 14.1
AVERAGE RESIDENTIAL RATES FOR LOCAL SERVICE IN URBAN AREAS, 1986-1999
(As of October 15)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999**
Representative Monthly Charge *	$12.58	$12.44	$12.32	$12.30	$12.36	$13.03	$13.05	$13.16	$13.19	$13.62	$13.71	$13.67	$13.75	$13.75
Subscriber Line Charges	2.04	2.66	2.67	3.53	3.55	3.56	3.55	3.55	3.55	3.54	3.54	3.53	3.52	3.58
Additional Monthly Charge for Touch-tone Service	1.57	1.52	1.54	1.52	1.33	1.06	0.97	0.94	0.77	0.44	0.30	0.25	0.10	0.09
Taxes and Other Charges	1.51	1.56	1.58	1.70	2.00	2.12	2.15	2.29	2.31	2.41	2.40	2.42	2.39	2.45
Total Monthly Charge	**17.70**	**18.18**	**18.11**	**19.05**	**19.24**	**19.77**	**19.72**	**19.95**	**19.81**	**20.01**	**19.95**	**19.88**	**19.76**	**19.87**
Basic Connection Charge	45.63	44.04	42.94	43.06	43.06	42.00	41.50	41.38	41.28	40.91	41.11	41.04	41.24	41.26
Additional Connection Charge for Touch-tone Service	1.34	1.31	1.55	1.76	1.77	1.27	1.22	1.23	0.85	0.23	0.23	0.17	0.12	0.12
Taxes	2.28	2.20	2.11	2.44	2.32	2.30	2.29	2.30	2.33	2.44	2.36	2.46	2.38	2.52
Total Connection Charge	**49.25**	**47.55**	**46.60**	**47.26**	**47.15**	**45.57**	**45.01**	**44.92**	**44.46**	**43.58**	**43.70**	**43.67**	**43.74**	**43.90**
Additional Charge if Drop Line and Connection Block Needed	n.a.	n.a.	6.04	6.07	6.89	6.89	6.50	7.29	6.74	5.90	5.74	5.65	5.64	5.76
Lowest-cost Inside Wiring Maintenance Plan	0.58	0.85	0.89	1.07	1.07	1.20	1.25	1.31	1.45	1.52	1.78	1.68	2.22	2.65

* Rate is based upon flat-rate service where available, and measured/message service with 100 five-minute, same-zone, business-day calls elsewhere.
** Preliminary, subject to revision.

TABLE 14.2
AVERAGE LOCAL RATES FOR BUSINESSES WITH A SINGLE LINE IN URBAN AREAS
(As of October 15, 1989-1999)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999**
Monthly Representative Service Charge*	$31.06	$30.97	$32.29	$32.45	$32.70	$32.25	$32.48	$32.58	$32.76	$32.44	$32.22
Subscriber Line Charges	3.55	3.57	3.57	3.56	3.57	3.57	3.57	3.54	3.54	3.54	3.52
Extra for Touch-tone	2.43	2.35	1.84	1.71	1.67	1.21	0.97	0.82	0.38	0.32	0.25
Other Mandatory Payments	4.21	4.32	4.42	4.57	4.63	4.61	4.79	4.87	4.99	4.97	5.01
Total Monthly Charge	**41.25**	**41.21**	**42.12**	**42.29**	**42.57**	**41.64**	**41.80**	**41.81**	**41.67**	**41.28**	**41.00**
Monthly Charge for Flat-rate Service	$33.04	$33.29	$34.12	$34.06	$34.85	$34.39	$34.45	$34.42	$34.68	$34.39	$33.84
Subscriber Line Charges	3.65	3.69	3.70	3.70	3.70	3.70	3.69	3.61	3.61	3.56	3.50
Extra for Touch-tone	2.12	2.11	1.87	1.84	1.76	1.12	1.00	0.89	0.53	0.49	0.47
Other Mandatory Payments	4.90	4.98	5.22	5.34	5.50	5.36	5.58	5.55	5.58	5.63	5.56
Total Monthly Charge for Flat-rate Service	**43.71**	**44.07**	**44.91**	**44.94**	**45.81**	**44.57**	**44.71**	**44.47**	**44.39**	**44.07**	**43.37**
Number of Sample Cities with Flat-rate Service	59	56	54	54	54	53	53	53	53	54	54
Monthly Charge for Measured/Message Service	$16.18	$16.17	$16.76	$16.55	$16.60	$16.74	$17.06	$17.26	$17.28	$17.16	$17.12
200 Five-minute Business-day Same-zone Calls	16.11	16.19	16.70	17.23	17.57	17.38	17.15	17.10	17.18	17.14	17.06
Subscriber Line Charges	3.54	3.55	3.55	3.54	3.55	3.55	3.54	3.51	3.51	3.53	3.52
Extra for Touch-tone	2.48	2.39	1.87	1.73	1.68	1.22	0.98	0.83	0.39	0.33	0.25
Other Mandatory Payments	4.41	4.53	4.56	4.77	4.86	4.83	5.01	5.13	5.22	5.19	5.27
Total Monthly Charge for Measured/Message Service	**42.72**	**42.83**	**43.44**	**43.82**	**44.26**	**43.72**	**43.75**	**43.84**	**43.57**	**43.35**	**43.22**
Number of Sample Cities with Measured/Message Service	83	83	84	84	84	87	87	86	85	85	85
Cost of a Five-minute Business-day Same-zone Call	$0.09	$0.09	$0.09	$0.09	$0.09	$0.09	$0.09	$0.09	$0.09	$0.09	$0.09
Basic Connection Charge	$71.05	$71.36	$72.75	$72.55	$71.41	$69.88	$67.87	$68.47	$68.67	$65.83	$67.87
Additional Connection Charge for Touch-tone Service	1.70	1.89	1.13	1.19	1.17	0.92	0.27	0.17	0.17	0.12	0.12
Tax	4.06	4.15	4.32	4.33	4.25	4.13	4.17	4.20	4.45	4.13	4.49
Total Connection Charge	**76.81**	**77.40**	**78.20**	**78.07**	**76.83**	**74.93**	**72.31**	**72.85**	**73.29**	**70.09**	**72.48**
Additional Charge if Drop Line and Connection Block Needed	5.92	7.87	6.90	6.83	6.64	6.49	7.28	6.98	6.54	6.54	6.65
Lowest-cost Inside Wiring Maintenance Plan	$1.78	$1.91	$2.05	$2.03	$2.08	$2.26	$2.39	$2.63	$2.84	$3.04	$3.51

* Rate is based upon flat-rate service where available, and measured/message service with 200 five-minute, same-zone, business-day calls elsewhere.
** Preliminary, subject to revision.

TABLE 14.3
AVERAGE MONTHLY LOCAL RATES OF RUS BORROWERS

Year	Average Business Rate	Average Residential Rate	Percentage of US Access Lines
1994	$20.88	$11.05	5.03%
1995	$20.84	$10.94	3.79%
1996	$21.41	$11.17	3.83%
1997	$21.72	$11.51	3.83%

* Average rates do not include subscriber line charges, surcharges, 911 charges, or taxes.

TABLE 14.4

CHANGES IN THE PRICE OF DIRECTLY DIALED FIVE-MINUTE LONG DISTANCE CALLS

(AT&T Basic Rate Schedules)

Calling Distance (in airline miles, rate center to rate center)		Residential* January 1984	Residential* January 2000	Residential* Percentage Change	Business** January 1984	Business** January 2000	Business** Percentage Change
1 - 10	Day	$0.96	$1.30	35.4 %	$0.96	$2.02	110.4 %
	Evening	0.57	0.80	40.4	0.57	2.02	254.4
	Night & Weekend	0.38	0.65	71.1	0.38	2.02	431.6
11 - 22	Day	1.28	$1.30	1.6	1.28	2.02	57.8
	Evening	0.76	0.80	5.3	0.76	2.02	165.8
	Night & Weekend	0.51	0.65	27.5	0.51	2.02	296.1
23 - 55	Day	1.60	$1.30	-18.8	1.60	2.02	26.3
	Evening	0.96	0.80	-16.7	0.96	2.02	110.4
	Night & Weekend	0.64	0.65	1.6	0.64	2.02	215.6
56 - 124	Day	2.05	$1.30	-36.6	2.05	2.02	-1.5
	Evening	1.22	0.80	-34.4	1.22	2.02	65.6
	Night & Weekend	0.82	0.65	-20.7	0.82	2.02	146.3
125 - 292	Day	2.14	$1.30	-39.3	2.14	2.02	-5.6
	Evening	1.28	0.80	-37.5	1.28	2.02	57.8
	Night & Weekend	0.85	0.65	-23.5	0.85	2.02	137.6
293 - 430	Day	2.27	$1.30	-42.7	2.27	2.02	-11.0
	Evening	1.36	0.80	-41.2	1.36	2.02	48.5
	Night & Weekend	0.90	0.65	-27.8	0.90	2.02	124.4
431 - 925	Day	2.34	$1.30	-44.4	2.34	2.02	-13.7
	Evening	1.40	0.80	-42.9	1.40	2.02	44.3
	Night & Weekend	0.93	0.65	-30.1	0.93	2.02	117.2
926 - 1910	Day	2.40	$1.30	-45.8	2.40	2.02	-15.8
	Evening	1.44	0.80	-44.4	1.44	2.02	40.3
	Night & Weekend	0.96	0.65	-32.3	0.96	2.02	110.4
1911 - 3000	Day	2.70	$1.30	-51.9	2.70	2.02	-25.2
	Evening	1.62	0.80	-50.6	1.62	2.02	24.7
	Night & Weekend	1.08	0.65	-39.8	1.08	2.02	87.0
3001 - 4250	Day	2.80	$1.30	-53.6	2.80	2.02	-27.9
	Evening	1.68	0.80	-52.4	1.68	2.02	20.2
	Night & Weekend	1.12	0.65	-42.0	1.12	2.02	80.4
4251 - 5750	Day	2.91	$1.30	-55.3	2.91	2.02	-30.6
	Evening	1.74	0.80	-54.0	1.74	2.02	16.1
	Night & Weekend	1.16	0.65	-44.0	1.16	2.02	74.1

Source: AT&T tariffs and Industry Analysis Division, *Reference Book of Rates, Price Indices, and Expenditures for Telephone Service.*

***** AT&T initiated a new rate structure for residential customers on November 8, 1997. The new rate structure eliminates mileage bands and implements weekday peak and off-peak time bands and a weekend band. The new rates are shown in the old rate structure for the purposes of comparison.

****** AT&T initiated a new rate structure for business customers on November 5, 1997. The rate structure eliminates mileage, time-of-day, and day-of-week bands. The new rates are shown in the old rate structure for the purposes of comparison.

TABLE 14.5
AVERAGE REVENUE PER MINUTE

	AT&T	All Carriers **		
	All Interstate and International Switched Services *	All Interstate and International Switched Services	International Switched Services ***	All Interstate Switched Services
1984	$0.32			
1985	0.31			
1986	0.28			
1987	0.25			
1988	0.23			
1989	0.22			
1990	0.20			
1991	0.20			
1992	0.19	$0.19	$1.02	$0.15
1993	0.19	0.19	1.01	0.15
1994	0.18	0.18	0.94	0.13
1995	N/A	0.17	0.90	0.12
1996	N/A	0.16	0.77	0.12
1997	N/A	0.15	0.71	0.11
1998	N/A	0.14	0.58	0.11

Data for some prior years have been revised.

* Source: AT&T.

** Source: Industry Analysis Division, *Telecommunications Industry Revenue.*

*** Billed revenue per minute for international service differs in Table 7.1 and Table 14.5. Data in Table 7.1 is based on revenue billed by underlying carriers. Data for Table 14.5 is based on staff estimates of end-user revenue.

TABLE 14.6
INDICATORS OF LONG DISTANCE PRICES

	Average Revenue per Minute for Interstate and International Calls *	AT&T Charge per Minute for a 10-Minute Day Rate 200-Mile Call (Basic Rates)	Consumer Price Index: All Goods and Services	Restated in 1998 Dollars	
				Revenue per Minute	200-Mile Call Charge per Minute
1930	$0.27	$0.35	16.7	$2.68	$3.42
1931	0.27	0.35	15.2	2.89	3.75
1932	0.26	0.35	13.7	3.12	4.16
1933	0.28	0.35	13.0	3.45	4.39
1934	0.27	0.35	13.4	3.31	4.26
1935	0.27	0.35	13.7	3.16	4.16
1936	0.25	0.35	13.9	2.95	4.10
1937	0.22	0.35	14.4	2.45	3.96
1938	0.21	0.26	14.1	2.48	2.95
1939	0.22	0.26	13.9	2.53	2.99
1940	0.21	0.26	14.0	2.45	2.97
1941	0.21	0.26	14.7	2.30	2.83
1942	0.22	0.26	16.3	2.16	2.55
1943	0.21	0.22	17.3	1.98	2.07
1944	0.22	0.22	17.6	1.99	2.04
1945	0.21	0.22	18.0	1.92	1.99
1946	0.20	0.22	19.5	1.65	1.84
1947	0.19	0.22	22.3	1.40	1.61
1948	0.19	0.22	24.1	1.26	1.49
1949	0.19	0.22	23.8	1.29	1.51
1950	0.19	0.22	24.1	1.31	1.49
1951	0.20	0.22	26.0	1.26	1.38
1952	0.20	0.22	26.5	1.24	1.35
1953	0.21	0.22	26.7	1.27	1.34
1954	0.22	0.22	26.9	1.35	1.33
1955	0.23	0.22	26.8	1.40	1.34
1956	0.23	0.22	27.2	1.40	1.32
1957	0.24	0.22	28.1	1.38	1.28
1958	0.24	0.22	28.9	1.35	1.24
1959	0.24	0.22	29.1	1.35	1.23
1960	0.24	0.22	29.6	1.33	1.21
1961	0.25	0.22	29.9	1.36	1.20
1962	0.25	0.22	30.2	1.36	1.19
1963	0.25	0.22	30.6	1.32	1.17
1964	0.25	0.22	31.0	1.31	1.16
1965	0.24	0.22	31.5	1.24	1.14
1966	0.24	0.22	32.4	1.22	1.11
1967	0.24	0.22	33.4	1.18	1.07
1968	0.24	0.22	34.8	1.11	1.03
1969	0.24	0.22	36.7	1.07	0.98

* 1984 through 1991 were supplied by AT&T. Starting with 1992, data are from Industry Analysis Division, *Telecommunications Industry Revenue*.

TABLE 14.6
INDICATORS OF LONG DISTANCE PRICES - CONTINUED

	Average Revenue per Minute for Interstate and International Calls *	AT&T Charge per Minute for a 10-Minute Day Rate 200-Mile Call (Basic Rates)	Consumer Price Index: All Goods and Services	Restated in 1998 Dollars: Revenue per Minute	Restated in 1998 Dollars: Basic Rate 200-Mile Call Charge per Minute
1970	$0.23	$0.22	38.8	$0.97	$0.90
1971	0.25	0.21	40.5	0.99	0.85
1972	0.24	0.23	41.8	0.95	0.91
1973	0.25	0.23	44.4	0.93	0.86
1974	0.26	0.25	49.3	0.85	0.82
1975	0.27	0.25	53.8	0.83	0.75
1976	0.29	0.32	56.9	0.82	0.90
1977	0.28	0.33	60.6	0.77	0.87
1978	0.29	0.33	65.2	0.72	0.84
1979	0.29	0.33	72.6	0.65	0.75
1980	0.30	0.33	82.4	0.59	0.66
1981	0.33	0.35	90.9	0.59	0.63
1982	0.34	0.41	96.5	0.58	0.69
1983	0.35	0.41	99.6	0.57	0.67
1984	0.32	0.41	103.9	0.51	0.64
1985	0.31	0.39	107.6	0.47	0.59
1986	0.28	0.31	109.6	0.42	0.47
1987	0.25	0.27	113.6	0.35	0.38
1988	0.23	0.25	118.3	0.32	0.34
1989	0.22	0.23	124.0	0.29	0.31
1990	0.20	0.22	130.7	0.25	0.27
1991	0.20	0.21	136.2	0.24	0.25
1992	0.19	0.21	140.3	0.22	0.24
1993	0.19	0.22	144.5	0.22	0.25
1994	0.18	0.24	148.2	0.20	0.26
1995	0.17	0.27	152.4	0.18	0.29
1996	0.16	0.28	156.9	0.17	0.29
1997	0.15	0.29	160.5	0.15	0.29
1998	0.14	0.28	163.0	0.14	0.28

* 1984 through 1991 were supplied by AT&T. Starting with 1992, data are from Industry Analysis Division, *Telecommunications Industry Revenue*.

15 RATE OF RETURN:

Beginning in the mid-1980s, local exchange carriers that file access tariffs with the Commission were required to file rate of return reports (FCC Form 492). The first reports were filed for the monitoring period October 1, 1985 - December 31, 1986. Carriers filed reports for each subsequent two-year monitoring period (1987-88 and 1989-90).

In 1991, carriers that became subject to price-cap incentive regulation began filing reports on a yearly basis. Non-price-cap carriers continued to file reports for each two-year monitoring period (1991-1992, 1993-1994, 1995-1996, and 1997-1998) as well as annual reports for 1991, 1993, 1995, and 1997. Rate of return reports were previously required for AT&T but have been discontinued. Table 15.1 is a summary of rates of return for 1991-1998 for price-cap carriers.

The rates of return were posted at the time of the carrier's individual Form 492 filings. They do not reflect revisions filed at a later date, by the carriers. Thus, they are not necessarily the official versions relevant for rate-of-return enforcement and other regulatory purposes, but they do illustrate general industry trends. Copies of the individual carrier's Form 492 reports are on file in the FCC's Reference Information Center, Courtyard Level, 445 12th Street S.W., Washington, D.C.

TABLE 15.1

INTERSTATE RATE OF RETURN SUMMARY
YEARS 1991 THROUGH 1998
PRICE-CAP COMPANIES

(Final Reports for 1991 Through 1997 and Initial Report for 1998)

As of August 20, 1999.

	Reporting Entity	1998	1997	1996	1995	1994	1993	1992	1991
	AT&T Communications 1/					13.26 %	13.5 %	12.8 %	13.4 %
1	**Ameritech Operating Companies**	22.72 %	18.22 %	18.27 %	16.78 %	13.39	14.80	12.79	13.00
	Bell Atlantic Companies 2/								
2	Bell Atlantic	14.09	14.73	11.24	13.74	14.00	14.01	12.50	12.83
3	Bell Atlantic (NYNEX) 3/	11.40	13.72	15.23	12.12	11.79	12.6	12.50	
	New England Telephone and Telegraph Co.								8.54
	New York Telephone								9.82
4	**BellSouth Telephone Companies**	20.80	17.91	16.40	15.78	15.92	13.68	12.80	12.62
	SBC Communications, Inc. 4/								
5	Southwestern Bell Telephone Company 5/	9.91	10.32	11.63	13.38	13.01	12.91	11.80	10.75
6	Nevada Bell 5/	16.02	19.47	17.75	17.31	17.92	17.44	14.51	12.98
7	Pacific Bell 5/	15.48	11.98	17.68	15.76	14.93	12.89	12.68	11.85
8	Southern New England Telephone Company	10.99	12.70	11.64	11.58	11.34	11.52	12.90	8.56
9	**U S WEST Communications, Inc. 6/**	16.53	15.41	13.64	12.00	12.40	13.62	12.41	12.40
	GTE 7/ 8/ 9/								
10	GTE South Inc. (Kentucky - COKY) 10/	5.81	6.62	4.49	4.79	5.56			
11	GTE South Inc. (N. Carolina - CONC) 10/	12.56	16.63	11.98	14.16	10.75			
12	GTE South Inc. (S. Carolina - COSC) 10/	26.22	25.09	17.40	12.32	9.77			
13	GTE South Inc. (Virginia - COVA) 10/	35.55	33.65	30.90	23.18	23.45			
14	GTE Systems of The South (Alabama - COAL) 10/	7.67	15.31	9.69	11.88	12.58			
	GSTC - South (East South Contel) 10/						15.09	9.90	9.67
15	GTE North Inc. (Illinois - COIL) 11/	40.56	41.14	36.34	24.21	26.48			
16	GTE North Inc. (Indiana - COIN) 11/	34.13	33.26	29.02	23.27	22.44			
17	GTE Midwest Inc. (COIA + COSI = COIT) 11/	37.23	35.04	30.39	22.39	18.31			
18	GTE Midwest Inc. (Missouri - COMO + COCM + COEM = COMT) 11/	12.53	12.39	11.97	9.57	10.79			
19	GTE Arkansas, Inc. (COAR + COSA = COAT) 11/	16.35	16.13	19.13	18.24	17.44			
20	Contel of Minnesota - COMN 11/	34.22	33.81	32.38	23.81	22.12			
	GSTC - Central (Central Contel) 11/						16.28	10.24	11.22
21	GTE North Inc. (COPA + COQS = COPT) 12/	45.76	36.83	40.55	36.38	32.60	22.33	17.11	12.79
22	GTE Alaska, Inc. (Alaska - GTAK)	27.56	29.58	19.44	22.48	24.78	16.13	14.84	14.69
23	GTE California Inc. (California - GTCA)	16.99	17.68	13.72	6.95	9.08	7.05	10.73	12.45
24	GTE California, Inc. (California - COCA) 13/	22.87	19.16	17.63	16.03	12.19			
25	GTE California, Inc. (Arizona - COAZ) 13/	15.70	14.17	4.15	2.95	6.24			
26	GTE California, Inc. (Nevada - CONV) 13/	23.58	31.44	25.50	19.15	27.39			
	Contel of California, Inc. 13/						15.43	8.51	11.87
27	GTE Florida Inc. (Florida - GTFL)	14.64	19.14	15.17	8.56	7.36	7.36	9.52	12.64
28	GTE Hawaiian Telephone Co. Inc. (Hawaii - GTHI)	14.86	10.55	9.42	7.87	8.15	9.18	8.98	11.75
29	GTE North/GTE South (GTIL + GLIL = GAIL)	22.72	21.59	18.36	14.69	17.12	13.77	12.60	12.65
30	GTE North/Contel Systems of South (GTIN + GLIN = GAIN)	28.53	23.61	26.23	18.80	18.21	14.50	14.17	14.16
31	GTE North/Contel Systems of South (GTMI + GLMI = GAMI)	13.02	15.33	14.85	11.45	11.10	9.82	14.21	12.89
32	GTE Midwest Inc. (IOWA - GTIA) 14/	22.97	25.59	22.68	16.49	19.05			
33	Contel of Minnesota - GTMN 14/	(0.71)	4.01	(13.13)	(10.88)	(0.04)			
	GTE North Inc. (Total IA+MN GTE) 14/						13.16	13.69	9.97
34	GTE Midwest Inc. (Missouri - GTMO)	16.24	17.88	19.84	17.18	18.20	13.48	13.99	13.30
35	GTE Midwest Inc. (Nebraska - GTNE)	29.69	27.35	28.86	21.67	20.35	13.84	12.74	8.70
36	GTE North Inc. (Ohio - GTOH)	21.56	24.37	21.20	17.21	16.90	12.66	12.91	10.55
37	GTE North Inc. (Pennsylvania - GTPA)	14.64	20.62	18.91	14.02	14.81	11.72	12.42	12.82
38	GTE North Inc. (Wisconsin - GTWI)	15.92	18.75	17.99	13.96	13.65	13.85	13.00	10.43
39	GTE Northwest Inc. (Oregon - GTOR) 15/ 17/	26.57	28.23	23.50	18.89	16.20			
40	GTE Northwest Inc. (Washington- GTWA) 15/	27.43	24.41	21.60	15.87	13.67			
41	GTE Northwest Inc. (West Coast CA - GNCA) 15/	(7.13)	(25.83)	(24.03)	(16.99)	(15.37)			
	GTE Northwest Inc. (Total OR+WA+NWCA GTE) 15/						9.90	10.82	11.83
42	GTE Northwest Inc. (Idaho - GTID) 16/	30.85	30.52	23.94	20.78	19.60			
	GTE Northwest Inc. (Montana - GTMT) 16/					15.37			
	GTE Northwest Inc. (Total ID + MT GTE) 16/						16.00	17.34	14.53
43	GTE Northwest Inc. (Washington - COWA) 17/	30.36	31.85	29.43	22.24	18.07			
	GTE Northwest Inc. (Contel Oregon - COOR) 16/ 17/					9.18			
	GTE Systems of Northwest (Northwest Contel) 17/						18.1	10.3	8.96
44	GTE South Inc. (Alabama - GTAL) 18/	17.29	23.49	17.68	11.39	11.83			
45	GTE South Inc. (Kentucky - GTKY) 18/	22.07	20.57	18.46	13.89	10.96			
46	GTE South Inc. (North Carolina - GTNC) 18/	27.45	24.48	23.83	14.99	19.02			
47	GTE South Inc. (South Carolina - GTSC) 18/	30.28	24.06	25.70	18.93	17.60			
48	GTE South Inc. (Virginia - GTVA) 18/	20.15	23.76	11.07	10.91	9.29			
	GTE South Inc. (Total South GTE) 18/						11.91	12.61	11.50
49	GTE Southwest Inc. (Arkansas - GTAR) 19/	4.20	3.21	(1.97)	(1.57)	0.65			
50	GTE Southwest Inc. (New Mexico - GTNM) 19/	31.04	24.21	24.60	17.18	10.00			
51	GTE Southwest Inc. (Oklahoma - GTOK) 19/	14.17	14.90	10.77	6.70	6.44			
52	GTE Southwest Inc. (Texas - GTTX) 19/	16.74	14.81	11.53	7.11	7.24			
	GTE Southwest Inc. (Total Southwest GTE) 19/						9.00	11.52	10.22

TABLE 15.1

INTERSTATE RATE OF RETURN SUMMARY
YEARS 1991 THROUGH 1998
PRICE-CAP COMPANIES - CONTINUED

(Final Reports for 1991 Through 1997 and Initial Report for 1998)

As of August 20, 1999.

	Reporting Entity	1998	1997	1996	1995	1994	1993	1992	1991
53	GTE Southwest Inc. (Texas - COTX) 12/	14.94	18.10	22.42	14.62	8.29	17.89	9.64	10.22
54	GTE Southwest Inc. (New Mexico - CONM) 20/	46.37	48.69	42.53	47.29	27.57			
	Contel of THE West dba GTE West (Arizona Only - COWZ) 20/					14.86			
	GTE West (West Contel) 20/						17.26	13.81	10.51
55	Micronesian Telecomms. Corp. (N. Mariana Is. - GTMC) 21/	33.06	21.17	15.49	7.49	2.53			
	GTE New York (New York Contel) 22/						12.10	8.60	9.90
	GSTC - North (East North Contel) 22/						15.51	10.15	10.36
	Sprint								
56	Central Telephone of Nevada 23/	17.79	17.07	20.42	20.46	18.90	14.23	12.44	
57	Sprint - Florida	26.14	20.05						
	Central Telephone of Florida 23/			17.85	17.16	15.93	14.66	11.44	
	United Telephone Co. of Florida			19.79	19.28	17.63	14.44	12.27	13.00
58	Sprint Local Telephone Cos. - Eastern (NJ & PA)	14.59	17.36	17.42	14.87	16.12	13.98	12.32	11.71
59	Sprint Local Telephone Cos. - Midwest (MO,KS,MN,NE,WY,TX)	19.63	19.97						
	Central Telephone of Texas 23/			21.58	21.81	18.39	16.19	14.94	
	United Telephone - Midwest (MO,KS,MN,NE,WY,TX)			21.52	19.64	17.44	13.92	15.35	14.57
60	Sprint Local Telephone Cos. - North Carolina	13.18	16.54						
	Central Telephone of North Carolina 23/			15.75	15.36	14.19	11.97	11.29	
	Carolina Telephone And Telegraph Company			15.38	17.77	15.39	11.10	10.14	11.43
61	Sprint Local Telephone Cos. - Northwest	30.80	30.59	34.55	34.17	29.32	19.39	17.72	17.27
62	Sprint Local Telephone Cos. - Southeast (TN, VA & SC)	15.87	17.62						
	Central Telephone of Virginia 23/			17.46	15.87	14.30	15.55	12.91	
	United Telephone - Southeast (TN, VA & SC)			20.66	19.05	19.17	13.39	13.48	13.66
63	United Telephone Co. of Indiana, Inc.	24.20	26.13	24.30	20.33	18.41	15.55	14.93	14.06
64	United Telephone Co. of Ohio	17.33	13.91	16.12	15.93	16.54	13.15	12.33	12.75
	Central Telephone of Illinois 23/ 24/		18.92	18.40	19.55	18.87	10.18	11.54	
	All Other Companies								
65	Aliant Communications Company 25/	15.02	12.27	14.95	16.09	15.47	14.95	12.36	
66	Cincinnati Bell Telephone Company 26/	17.81	20.04						
67	Citizens Telecommunications Cos. (Tariff 1) 27/	17.87	9.77	15.42					
68	Citizens Telecommunications Cos. (Tariff 2) 27/	14.29	13.25	13.58					
69	Frontier Telephone of Rochester, Inc. 28/ 29/	18.37	13.19	10.20	11.87	12.02	11.63	12.11	11.82
70	Frontier Tier 2 Concurring Companies 29/	45.45	31.93	26.91	19.32	17.69	16.4		
71	Frontier Communications of Minnesota & Iowa 29/ 30/	29.28	28.26	23.71	21.90	19.65	15	13.7	13.71

	1998	1997	1996	1995	1994	1993	1992	1991
Maximum Rate of Return	46.37 %	48.69 %	42.53 %	47.29 %	32.60 %	22.33 %	17.72 %	17.27 %
Minimum Rate of Return	(7.13)	(25.83)	(24.03)	(16.99)	(15.37)	7.05	8.51	8.54
Weighted Arithmetic Mean	16.46	15.60	15.15	14.02	13.58	13.12	12.42	11.78
Standard Deviation	5.11	3.96	3.64	3.03	2.59	1.76	0.96	1.49

NOTES FOR TABLE 15.1.

1/ AT&T Communications filed individual reports for 1991 - 1994 ninety days after end of each calendar year. The local telephone companies filed final reports for each year fifteen months after the calendar year.
2/ Bell Atlantic filed revised reports August 12, 1999 reflecting the reassignment of expenses and revenues associated with Internet Service Provider (ISP)-bound traffic to the intrastate jurisdiction.
3/ In 1992, NYNEX started to file a combined report.
4/ Southwestern Bell Telephone Co., Nevada Bell and Pacific Bell filed revised reports June 25, 1999 reflecting the reassignment of expenses and revenues associated with ISP-bound traffic to the intrastate jurisdiction.
5/ Southern New England Telephone Company merged with SBC October 1998. Southwestern Bell, Nevada Bell, and Pacific Bell filed a revised 1998 report May 3, 1999.
6/ US WEST Communications, Inc. filed a revised report June 16, 1999 to correct the state and local composite tax rate.
7/ It should be noted that GTE in 1993 consolidated various study areas so that some individual company reports may not be totally consistent with prior years.
8/ In 1994, GTE reported many study areas by state. For the GTE companies, GTE of Alaska, California, Florida, Hawaii, Illinois, Indiana, Michigan, Missouri, Nebraska, Ohio, Pennsylvania, and Wisconsin are the only study areas that appear consistent between 1993 and 1994.
9/ GTE companies filed revised reports May 28, 1999 to properly report the expenses associated with funding the USAC-USF.
10/ In 1994, GSTC - South (East South Contel) was separated and became GTE South, Inc., (Kentucky only - COKY); GTE South, Inc., (N. Carolina only - CONC); GTE South, Inc. (S. Carolina only - COSC); GTE South, Inc., (Virginia only - COVA); and GTE Systems of the South (COAL only). The property for Georgia which was also included in 1993 was sold and was not included in 1994.
11/ In 1994, GSTC - Central Region (Central Contel) was separated and became GTE North, Inc., (Illinois Contel); GTE North, Inc., (Indiana Contel); GTE Midwest, Inc., (Contel Iowa COIA + COSI); GTE Midwest, Inc., (Contel Missouri - COMO + COCM + COEM); Total Contel Arkansas (COAR + COSA); and Contel of Minnesota - COMN. In 1996, Total Contel Arkansas name changed to GTE Arkansas, Inc.
12/ For the GTE Contel companies, GTE Pennsylvania (Contel) and GTE Texas (Contel) are the two companies that appear consistent between 1993 and 1994. In 1995, GTE of Pennsylvania (Contel) name changed to GTE North, Inc., (COPA + COQS); and GTE Texas (Contel) name changed to GTE Southwest, Inc., (Texas Contel).
13/ In 1994, Contel of California, Inc., was separated and became Contel of California (California only - COCA); Contel of California (AZ only - COAZ); and Contel of Nevada (NV only - CONV). Names were changed to GTE California, Inc., (California Contel), GTE California, Inc. (Arizona Contel), and GTE California, Inc., (Nevada Contel) in 1996.
14/ In 1994, GTE of the North, Inc., (Total IA + MN GTE) was separated and became GTE Midwest, Inc. (Iowa only - GTIA) and Contel Minnesota - GTMN.
15/ In 1994, GTE of the Northwest, Inc., (Total OR+WA+NWCA GTE) was separated and became GTE of the Northwest, Inc. (Oregon only - GTOR); GTE of the Northwest, Inc., Washington only - GTWA); and West Coast Telephone Co. of California --GNCA. In 1995, GTE of the Northwest, Inc. (Contel Oregon - COOR) merged with GTE of the Northwest, Inc. (Oregon only -- GTOR).
16/ In 1994, GTE of the Northwest, Inc., (Total ID + MT GTE) was separated and became GTE of the Northwest, Inc. (Idaho only - GTID) and GTE of the Northwest, Inc., (Montana only - GTMT). GTE of the Northwest, Inc.. (Montana only - GTMT) did not file a 1995 report since their property was sold.
17/ In 1994, GTE Systems of Northwest (Northwest Contel) was separated and became GTE Northwest, Inc., (Contel Oregon - COOR); and GTE Northwest, Inc., (Contel Washington only - COWA). In 1995, GTE of the Northwest, Inc., (Contel Oregon - COOR) merged with GTE of the Northwest, Inc. (Oregon only - GTOR).
18/ In 1994, GTE South, Inc., (Total South GTE) was separated and became GTE South, Inc. (Alabama only - GTAL); GTE South, Inc., (Kentucky only - GTKY); GTE South, Inc., (North Carolina only - GTNC); GTE South, Inc., (South Carolina only - GTSO); and GTE South, Inc., (Virginia only - GTVA). The properties for Georgia, Tennessee, and West Virginia which were included in GTE South, Inc., in 1993, were included in 1994 because these properties were sold.
19/ In 1994, GTE Southwest, Inc., (Total Southwest GTE) was separated and became GTE Southwest, Inc. (Arkansas only - GTAR); GTE Southwest, Inc., (New Mexico only - GTNM); GTE Southwest, Inc., (Oklahoma only GTOK); and GTE Southwest Inc., (Texas only - GTTX).
20/ In 1994, GTE West (West Contel) was separated and became Contel of the West (New Mexico only - CONM); and Contel of the West dba GTE West (Arizona only - COWZ). Utah which was included in 1993 was not included in 1994; their property was sold. Contel of the West dba GTE West (Arizona only - COWZ) property was sold so did not file a 1995 report. In 1995, Contel of the West (New Mexico only - CONM) changed its name to GTE Southwest, Inc., (Contel New Mexico).
21/ Micronesian Telecommunications Corp. filed a rate of return report for the first time in 1994.
22/ GTE New York (New York Contel) and GSTC - North (East North Contel) did not file in 1994; their property was sold.
23/ The Centel companies and Lincoln Telephone and Telegraph Company reported subject to price caps beginning 7/1/93. Rate of return for 1993 is for the filing period July through December. For 1992, information for these companies is from their final non-price-cap report filed 9/30/93 for the two-year 1992 monitoring period, 1991-1992.
24/ Sold to Galatin River, October 31, 1998.
25/ In 1996, Lincoln Telephone and Telegraph Company changed its name to Aliant Communications Company.
26/ Cincinnati Bell Telephone Company went price-cap in 1997.
27/ The Citizens Telecommunications Cos. became price-cap July 1, 1996; reporting period for 1996 is July 1, 1996 - December 31, 1996. Rates for 1996 are from the initial report.
28/ Rochester Telephone Corporation and Southern New England Telephone Company reported subject to price caps beginning 7/1/91. The rate of return report for each is for the filing period July 1, 1991 through December 31, 1991.

NOTES FOR TABLE 15.1 - CONTINUED.

29/ The Rochester Telephone Corporation, Rochester Telephone subsidiaries and Frontier Communications of Minnesota & Iowa (name changed in 1994 from Vista Communications Co. of Minnesota and Iowa) did not have any changes to their original report so they did not file a final report on March 31, 1995 for 1993.

30/ Vista Telephone Companies, now known as Frontier Communications of Minnesota and Iowa, filed by Rochester Telephone Company as of 7/1/92. For 1992, the rate of return is for 7/1/92-12/31/92 when they reported subject to price-cap regulation. For 1991, Vista filed a rate of return report for Vista Telephone Company of Iowa and Vista Telephone Company of Minnesota.

16 RESIDENTIAL TELEPHONE USAGE:

Bill harvesting data collected by PNR and Associates, Inc. (PNR) provide information on phone usage in the long distance residential market, as opposed to the overall market for toll service. PNR, an economic research and consulting firm located in Jenkinstown, Pennsylvania, conducts nationwide surveys of residential telephone usage and household expenditures on telephone service. These surveys, in which households are asked to mail copies of their phone bills for one month to PNR, are called bill harvesting studies. PNR has donated databases containing information on residential phone usage to the Commission.

The bill harvesting data reflect calls itemized on residential telephone bills. Thus, 800 calls made from the residence are not included, nor are collect calls made from the residence. In contrast, 800 calls received, and shown on the household monthly bill, are included, as are collect calls received.

Table 16.1 shows the percentage of residential long distance telephone usage that is intrastate, interstate and international. In 1998, 36% of residential toll phone calls were interstate as opposed to 49% of minutes. Table 16.2 shows the average number of minutes on household telephone bills and the percentage of households that make long distance telephone calls in a given month. In 1998, the average household had 144 minutes of toll calling and the median household had 79 minutes. Eighty-seven percent of households made at least one interstate, intrastate or international toll call.

Table 16.3 shows the distribution of residential long distance calls by call duration. The average residential call lasts almost nine minutes, although one-third of toll calls last one minute or less. Table 16.4 shows the distance distribution of long distance calls. The average distance of an interstate call is 691 miles, as opposed to 55 miles for an intrastate call. Table 16.5 shows that the average duration of both interstate and intrastate calls increases with the distance of the call.

Table 16.6 shows the percentage of residential long distance minutes by day of week. In the 1998 survey, 32% of residential minutes were on weekdays between 7:00 a.m. and 7:00 p.m, and 36% of residential minutes were on weekends.

TABLE 16.1
DISTRIBUTION OF RESIDENTIAL TOLL CALLS AND MINUTES

Type	1995	1996	1997	1998
Calls				
Intralata-Intrastate	41 %	40 %	38 %	38 %
Intralata-Interstate	1	1	1	1
Interlata-Intrastate	19	18	19	19
Interlata-Interstate	37	35	37	36
International	1	1	1	1
Others*	2	5	5	4
Total Calls in Sample	197,787	165,465	483,685	578,850
Minutes				
Intralata-Intrastate	28 %	29 %	27 %	27 %
Intralata-Interstate	1	1	1	1
Interlata-Intrastate	18	18	18	18
Interlata-Interstate	50	47	49	49
International	2	1	1	1
Others*	1	4	4	3
Total Minutes in Sample	1,493,674	1,210,675	3,673,315	4,330,888

Source: PNR and Associates Inc., *Bill Harvesting II* , *Bill Harvesting III* and *MarketShare Monitor.*

* 800 calls billed to residential customers, 900 calls and calls that cannot be classified.
Figures may not total due to rounding.

TABLE 16.2
AVERAGE RESIDENTIAL MONTHLY TOLL CALLING IN 1998

Type	Average Minutes	Percent Of Households With Toll Calls During Month
Intralata-Intrastate	40	57
Intralata-Interstate	1	3
Interlata-Intrastate	26	43
Interlata-Interstate	71	68
International	2	4
Others*	5	12
All Types	144	87

Source: PNR and Associates, Inc., *MarketShare Monitor* .

Sample Size: 29,990 households.
* 800 calls billed to residential customers, 900 calls and calls that cannot be classified.
Figures may not total due to rounding.

TABLE 16.3
DURATION OF RESIDENTIAL LONG DISTANCE CALLS*

Duration of Call (In Minutes)	1995	1996	1997	1998
1	32.0 %	32.6 %	33.3 %	34.0 %
2	11.2	11.3	11.3	11.6
3	6.7	7.3	7.4	7.6
4	4.8	4.8	4.9	4.8
5	4.0	4.0	4.0	3.9
6	3.3	3.3	3.2	3.2
7	2.9	2.9	2.8	2.8
8	2.7	2.6	2.5	2.5
9	2.3	2.4	2.3	2.2
10	2.3	2.2	2.1	2.0
11-15	8.2	8.1	8.0	7.7
16-20	5.8	5.6	5.4	5.1
21-25	4.0	3.7	3.7	3.5
26-30	2.8	2.5	2.6	2.5
31-45	4.1	4.0	3.9	3.8
46-60	1.6	1.5	1.5	1.5
Greater Than 60	1.3	1.1	1.2	1.2
Average Duration	9.4	8.9	8.9	8.7
Median Duration	4.0	3.0	3.0	3.0

Source: PNR and Associates Inc., *Bill Harvesting II* , *Bill Harvesting III* and *MarketShare Monitor* .

Sample Size: 110,734 calls for 1995, 94,830 for 1996, 295,498 for 1997, and 364,942 in 1998.

* Direct dial calls carried by long distance carriers. Includes intrastate, interstate and international calls. Excludes intrastate calls carried by local exchange carriers.

TABLE 16.4
DISTANCE OF RESIDENTIAL LONG DISTANCE CALLS IN 1998*

Distance of Call (In Miles)	Interstate	Intrastate	All Calls
1 - 10	1.5 %	7.3 %	5.0 %
11 - 22	4.5	30.5	20.2
23 - 55	7.0	33.6	23.1
56 - 124	7.6	17.3	13.5
125 - 292	16.1	9.3	12.0
293 - 430	9.4	1.6	4.7
431 - 925	24.8	0.3	10.0
926 - 1,910	21.9	0.0	8.7
Greater Than 1,910	7.3	0.0	2.9
Average Distance	691	55	307
Median Distance	493	29	61

Source: PNR and Associates Inc., *MarketShare Monitor.*

Sample Size: 500,802 calls.
* Direct dial calls carried by long distance carriers and local exchange carriers. Includes only domesti calls.

TABLE 16.5
DURATION OF RESIDENTIAL LONG DISTANCE CALL BY DISTANCE IN 1998*

Distance of Call (In Miles)	Average Duration Interstate Calls (Minutes)	Average Duration Intrastate Calls (Minutes)	Average Duration All Calls (Minutes)
1 - 10	4.2	4.2	4.2
11 - 22	5.0	4.9	4.9
23 - 55	6.2	5.6	5.7
56 - 124	8.4	7.5	7.7
125 - 292	9.8	8.9	9.4
293 - 430	10.9	9.5	10.6
431 - 925	11.7	10.6	11.7
926 - 1,910	11.8	N/A	11.8
Greater Than 1,910	11.2	N/A	11.1
Average Minutes	10.3	6.0	7.7
Median Minutes	4.0	2.0	2.7

Source: PNR and Associates Inc., *MarketShare Monitor.*

Sample Size: 500,802 calls.
* Direct dial calls carried by long distance carriers and local exchange carriers. Includes only domesti calls.
N/A Not Applicable.

TABLE 16.6

DISTRIBUTION OF RESIDENTIAL LONG DISTANCE MINUTES BY DAY OF WEEK IN 1998*

Day	7:00 AM-6:59 PM	7:00 PM-6:59 AM	Total
Monday	7.0 %	6.4 %	13.5 %
Tuesday	6.4	6.5	12.9
Wednesday	6.5	6.3	12.8
Thursday	7.2	6.4	13.6
Friday	6.6	4.8	11.4
Saturday	10.2	4.3	14.5
Sunday	13.6	7.7	21.3
Total	57.6	42.4	100.0

Source: PNR and Associates Inc., *MarketShare Monitor* .

Sample Size: 364,942 calls.

* Direct dial calls carried by long distance carrier. Includes intrastate, interstate and international calls. Excludes intrastate calls carried by local exchange carriers.

17 SUBSCRIBERSHIP:

Under contract with the FCC, the Bureau of the Census includes questions on telephones as part of its Current Population Survey. This survey, which monitors demographic trends between the decennial censuses, has several strengths: it is conducted regularly by an expert agency, the sample is very large, and the questions are consistent. Thus, changes in the results can be compared over time with a great deal of confidence.

More than twenty million households have been added to the nation's telephone system since these surveys began in November 1983 -- reflecting both an increase in the total number of households and a small, but statistically significant, increase in the percentage of households that subscribe to telephone service.

Because of smaller sample sizes, state-by-state data are subject to greater sampling errors than the national data shown in Table 17.1. Consequently, the state-by-state data shown in Table 17.2 are based on annual average penetration rates. Additional information can be found in the *Telephone Penetration* and *Telephone Subscribership* reports available on the **FCC-State Link** web page.

Prior to 1980, historical estimates of telephone penetration were based on a comparison of the number of residential main stations to the number of households. These estimates became less reliable at that point because of the emergence of an increasing number of households with multiple phone lines. In the 1980 decennial census, the question "Do you have a telephone?" was added to the long-form questionnaire. The 1980 and 1990 percentages in Table 17.3 are based on those responses. With the telephone companies no longer owning the telephone instruments, however, it is possible for someone to have a telephone but not have service. This may account for some of the discrepancy between the 1990 percentages in Tables 17.1 and 17.3.

For other countries of the world, telephone development is often measured as the number of access lines per 100 people. This measure includes both residential and business lines. Historical estimates for the United States, using the decennial census population counts, are shown in Table 17.3.

To help evaluate the effect of the Commission's lifeline program on telephone penetration, Table 17.4 compares penetration rates for states with and without lifeline programs at the beginning of 1998. (In 1998, the lifeline program was expanded to all states. However, the subscribership data being analyzed for March 1998 was probably too close to the implementation date of that change in the program to expect any impact to be apparent.) As can be seen in the table, penetration increases have been greater on average in states with lifeline programs than in states without lifeline programs, both for all households and for low-income households. Between March 1984 and March 1998, the overall average penetration rate for states with lifeline programs increased by 2.6%, which is statistically significant. The increase for states without programs is 0.9%, which is not statistically significant. For households with incomes under $10,000 (expressed in 1984 dollars), which would be the households primarily affected by the lifeline programs, the average increase was 6.3% for states with programs, again statistically significant, versus 2.5% for states without programs, also statistically significant.

The Bureau of the Census also includes questions on computers and internet use as part of its Current Population Survey. Using this information, the National Telecommunications and Information Administration (NTIA) has released its third report examining which American households have access to telephones, computers, and the Internet, and which do not. Chart 17.1 shows the percent of households with a telephone, computer, and Internet use for 1994, 1997 and 1998. The percent of households may differ from Table 17.1 since a different monthly survey was used. The NTIA report, *Falling Through the Net: Defining the Digital Divide*, finds that the number of Americans connected to the nation's information infrastructure is soaring. According to NTIA, a digital divide exists with minorities, low-income persons, the less educated, and children of single-parent households, especially in rural areas. NTIA's web site can be accessed at <http://www.ntia.doc.gov>.

TABLE 17.1

HOUSEHOLD TELEPHONE SUBSCRIBERSHIP IN THE UNITED STATES

	Households (Millions)	Households with Telephones (Millions)	Percentage with Telephones	Households without Telephones (Millions)	Percentage without Telephones
1983 November	85.8	78.4	91.4 %	7.4	8.6 %
1984 March	86.0	78.9	91.8	7.1	8.2
July	86.6	79.3	91.6	7.3	8.4
November	87.4	79.9	91.4	7.5	8.6
1985 March	87.4	80.2	91.8	7.2	8.2
July	88.2	81.0	91.8	7.2	8.2
November	88.8	81.6	91.9	7.2	8.1
1986 March	89.0	82.1	92.2	6.9	7.8
July	89.5	82.5	92.2	7.0	7.8
November	89.9	83.1	92.4	6.8	7.6
1987 March	90.2	83.4	92.5	6.8	7.5
July	90.7	83.7	92.3	7.0	7.7
November	91.3	84.3	92.3	7.0	7.7
1988 March	91.8	85.3	92.9	6.5	7.1
July	92.4	85.7	92.8	6.7	7.2
November	92.6	85.7	92.5	6.9	7.5
1989 March	93.6	87.0	93.0	6.6	7.0
July	93.8	87.5	93.3	6.3	6.7
November	93.9	87.3	93.0	6.6	7.0
1990 March	94.2	87.9	93.3	6.3	6.7
July	94.8	88.4	93.3	6.4	6.7
November	94.7	88.4	93.3	6.3	6.7
1991 March	95.3	89.2	93.6	6.1	6.4
July	95.5	89.1	93.3	6.4	6.7
November	95.7	89.4	93.4	6.3	6.6
1992 March	96.6	90.7	93.9	5.9	6.1
July	96.6	90.6	93.8	6.0	6.2
November	97.0	91.0	93.8	6.0	6.2
1993 March	97.3	91.6	94.2	5.7	5.8
July	97.9	92.2	94.2	5.7	5.8
November	98.8	93.0	94.2	5.8	5.8
1994 March	98.1	92.1	93.9	6.0	6.1
July	98.6	92.4	93.7	6.2	6.3
November	99.8	93.7	93.8	6.2	6.2
1995 March	99.9	93.8	93.9	6.1	6.1
July	100.0	94.0	94.0	6.0	6.0
November	100.4	94.2	93.9	6.2	6.1
1996 March	100.6	94.4	93.8	6.2	6.2
July	101.2	95.0	93.9	6.1	6.1
November	101.3	95.1	93.9	6.2	6.1
1997 March	102.0	95.8	93.9	6.2	6.1
July	102.3	96.1	93.9	6.2	6.1
November	102.8	96.5	93.8	6.3	6.2
1998 March	103.4	97.4	94.1	6.1	5.9
July	103.4	97.3	94.1	6.1	5.9
November	104.1	98.0	94.2	6.1	5.8
1999 March	104.8	98.5	94.0	6.3	6.0
July	105.1	99.2	94.4	5.9	5.6
November	105.4	99.1	94.1	6.3	5.9

Source: Industry Analysis Division, *Telephone Subscribership in the United States*.

TABLE 17.2

TELEPHONE PENETRATION BY STATE
(Annual Average Percentage of Households with Telephone Service)

State	1984	1999	Change
Alabama	88.4 %	91.5 %	3.0 % *
Alaska	86.5	94.6	8.1 *
Arizona	86.9	93.2	6.3 *
Arkansas	86.6	88.9	2.3
California	92.5	95.7	3.3 *
Colorado	93.2	96.7	3.5 *
Connecticut	95.5	96.5	1.0
Delaware	94.3	95.7	1.5
District of Columbia	94.9	92.4	-2.5 **
Florida	88.7	92.6	3.9 *
Georgia	86.2	92.1	5.9 *
Hawaii	93.5	96.3	2.8 *
Idaho	90.7	93.8	3.1 *
Illinois	94.2	91.8	-2.4 **
Indiana	91.6	93.8	2.3 *
Iowa	96.2	95.8	-0.4
Kansas	94.3	93.8	-0.5
Kentucky	88.1	92.8	4.6 *
Louisiana	89.7	91.5	1.9
Maine	93.4	97.2	3.8 *
Maryland	95.7	95.3	-0.4
Massachusetts	95.9	95.4	-0.5
Michigan	92.8	94.2	1.3
Minnesota	95.8	96.9	1.1
Mississippi	82.4	88.0	5.6 *
Missouri	91.5	95.6	4.1 *
Montana	91.0	95.3	4.3 *
Nebraska	95.7	95.9	0.2
Nevada	90.4	93.1	2.8
New Hampshire	94.3	97.0	2.7 *
New Jersey	94.8	93.9	-0.8
New Mexico	82.0	89.8	7.8 *
New York	91.8	95.3	3.5 *
North Carolina	88.3	93.9	5.6 *
North Dakota	94.6	97.3	2.6 *
Ohio	92.4	94.7	2.3 *
Oklahoma	90.3	91.2	0.9
Oregon	90.6	95.2	4.6 *
Pennsylvania	94.9	97.1	2.3 *
Rhode Island	93.6	94.3	0.6
South Carolina	83.7	92.9	9.3 *
South Dakota	93.2	92.7	-0.5
Tennessee	88.5	94.5	6.0 *
Texas	88.4	92.4	4.0 *
Utah	92.5	95.6	3.1 *
Vermont	92.3	95.3	3.1
Virginia	93.1	93.2	0.1
Washington	93.0	95.9	2.9 *
West Virginia	87.7	92.7	5.0 *
Wisconsin	95.2	95.7	0.5
Wyoming	89.9	95.0	5.2 *
Total United States	91.6	94.2	2.6 *

Source: Industry Analysis Division, *Telephone Subscribership in the United States.*

* Increase is statistically significant at the 95% confidence level.
** Decrease is statistically significant at the 95% confidence level.

Changes may not be the same as calculated differences, due to rounding.

TABLE 17.3

HISTORICAL TELEPHONE PENETRATION ESTIMATES

Year	Percentage of Households with Telephones	Access Lines per 100 Population
1920	35.0 %	9.6
1930	40.9	12.5
1940	36.9	12.7
1950	61.8	21.7
1960	78.3	27.6
1970	90.5	35.0
1980	92.9	46.2
1990	94.8	54.8

Sources: FCC staff estimates based on data from the Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970,* Part 2, page 783, for all percentage data except 1980 and 1990, which are from the decennial censuses. Access line data for 1920 through 1970 are estimated by multiplying the number of telephones by the proportion of main plus equivalent main stations to total telephones for the Bell System. Prior to 1950, the 1950 proportion is used. For 1980 and 1990, access lines reported by USTA are used.

TABLE 17.4

COMPARISON OF PENETRATION RATES FOR STATES WITH AND WITHOUT LIFELINE PROGRAMS

	March 1984	March 1998	Change
All Households			
States with Lifeline Programs	91.5 %	94.1 %	2.6 % *
States without Lifeline Programs	93.3	94.3	0.9
Total United States	91.8	94.1	2.3 *
Households with Incomes Under $10,000 #			
States with Lifeline Programs	79.3 %	85.6 %	6.3 % *
States without Lifeline Programs	83.6	86.1	2.5
Total United States	80.1	85.7	5.6 *

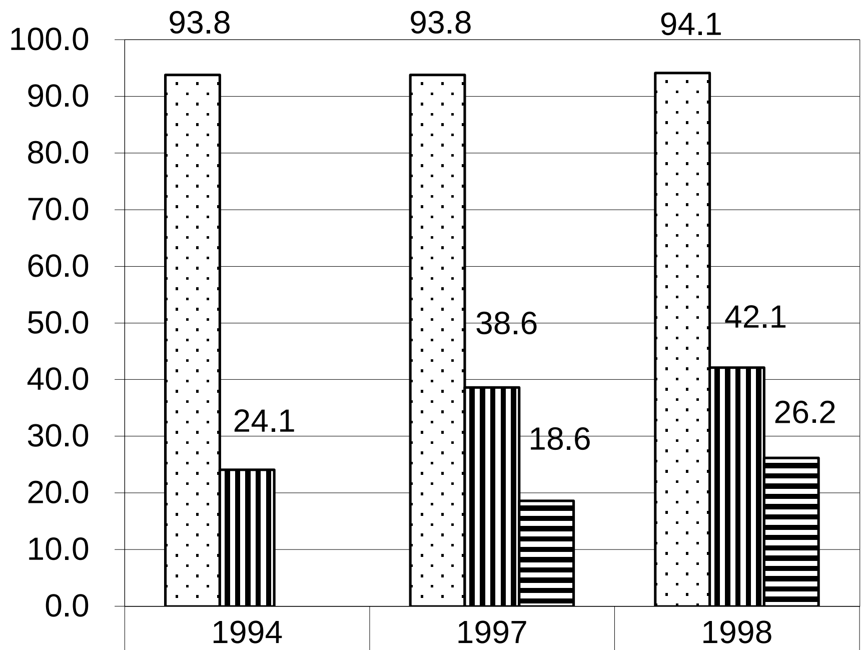
Source: Industry Analysis Division, *Telephone Penetration by Income by State.*

* Change is statistically significant at the 95% confidence level.

Income expressed in March 1984 dollars. $10,000 in March 1984 dollars is equivalent to $15,809 in March 1998 dollars.

Changes may not be the same as calculated differences, due to rounding.

CHART 17.1
PERCENT OF U.S. HOUSEHOLDS WITH A TELEPHONE, COMPUTER, AND INTERNET USE



	1994	1997	1998
Telephone	93.8	93.8	94.1
Computer	24.1	38.6	42.1
Internet Use		18.6	26.2

Source: National Telecommunications and Information Administration (NTIA) and U.S. Census Bureau, Current Population Surveys.

18 TECHNOLOGY DEVELOPMENT:

1. Central Office Technology:

During the 1980s, telephone companies replaced most of their older electromechanical switches with computerized equipment. In the telephone industry, these computers are referred to as stored program control switches. Switches with the most current technologies are fully digital. That is, computers are used to switch calls and telephone conversations are converted to a digital form before being passed through the switch and later reconverted to their original analog form. Some offices are of an intermediate variety: the switching function is done by computer but the calls continue to be processed in their analog form. The spread of these technologies throughout the Bell operating companies (BOCs) is shown in Table 18.1.

Newer signaling systems have been developed which permit calls to be set up more quickly and efficiently. In the late 1980s, telephone company switching offices began to be converted to the newest signaling system, Signaling System 7. This was followed by an integrated systems digital network (ISDN). One of the attractions of ISDN is that ordinary local telephone lines (copper loops) can transport high-speed data between computers and handle more than one telephone conversation at a time. The number of BOCs switching offices and the lines served by offices with these features are shown in Table 18.2. Of course, not all of the lines served by ISDN-compatible switching offices are actually receiving ISDN service.

The newest service available, xDSL (Digital Subscriber Loop) service, offers broadband digital capability using special terminal equipment that enhances the capability of existing copper access lines. Limited data on the proliferation of xDSL terminal equipment by incumbent carriers are contained in Table 8 of our most recent *Fiber Deployment Update*. Increased use of ISDN services for internet access along with the availability of xDSL services should tend to drive down the cost of ISDN services further.

2. Transmission Technology:

The BOCs file data on technology as part of their ARMIS reports. (ARMIS is an acronym for the Automated Reporting Management Information System.) The data contained in Tables 18.1 - 18.3 are from the BOC's ARMIS 4307 reports. The individual carrier's data can be obtained from the ARMIS web page at <http://www.fcc.gov/ccb/ARMIS/db/>. Selected holding company statistics from the ARMIS 4307 can be found in our *Infrastructure Report* on the **FCC-State Link** web page. Each telephone company has a network of transmission paths or carrier links tying together their switching offices. As indicated in Table 18.3, fiber optic cables have rapidly replaced copper to provide these links. From 1990 to 1998, the proportion of fiber has grown from 60% to 97%.

Although fiber technology was first used for interoffice transmission facilities, the technology is now being deployed closer to customers. The number of working channels provides an approximation of the number of transmission paths between customers and the telephone company offices serving those customers. Although the number of fiber channels nearly tripled during the first half of the 1990s, in 1998 copper wire still linked about 82% of customers to the first point of switching.

The National Exchange Carrier Association conducts a biennial Access Market Survey of some 1,100 small, mostly rural telephone companies. The survey focuses on the small companies efforts to bring advanced services to its customers. Table 18.4 shows selected network capabilities of survey respondents by state. In addition to the number of central offices and access lines, the table also gives the percentage of companies with such broadband technologies as ISDN, SONET, Frame Relay, ATM, xDSL and Internet.

2. Telecommunications Patents:

Another measure of developing technology is the number of U.S. patents. The U.S. Patent and Trademark Office maintains a file of over 6 million distinct U.S. patents granted. These patents are categorized by technology. Chart 18.1 shows the number of patents granted for telecommunications from 1990 to 1998, and the first half of 1999. The information presented profile U.S. patent activity in the general field of telecommunications. It includes all U.S. patent documents, excepting reissue patents, granted between January 1990 and June 30, 1999 which have been classified as follows:

> Class 370, *Multiplex Communications*, is the generic class for multiplexing or duplexing systems, methods, or apparatus.
>
> Class 375, *Pulse or Digital Communications*, is the generic class for pulse or digital communication systems using electrical or electromagnetic signals. Such communication includes transmitting an intelligence bearing signal from one point to another in the form of discrete variations in some parameter of the electrical or electromagnetic signal.
>
> Class 379, *Telephonic Communications*, includes systems, processes and instruments for the two-way electrical transmission of intelligible audio information having arbitrary content over a link including an electrical conductor, between spaced apart locations, so as to enable conversation therebetween, and intended for the private use of a listener or a group of listeners. Also included are switching, signaling or signal transmission systems, processes and instruments peculiar to, or specified as for a telephone or a telephone system.
>
> Class 455, *Telecommunications*, is the generic class for modulated carrier wave communications.

Data for prior years differ from the February 1999 *Trends* report. Revisions to prior-year data reflect annual reclassification of patent categories. For example, if a patent type was reclassified in 1998, the data for prior years have been recalculated based on this reclassification.

TABLE 18.1

CENTRAL OFFICES AND ACCESS LINES BY TECHNOLOGY
(Bell Operating Companies)

Year-End	Total Offices	Electromechanical Offices		Analog Stored Program Controlled Offices		Digital Stored Program Controlled Offices	
1980	9,195	6,842	74.4 %	2,353	25.6 %	0	0.0 %
1981	9,198	6,647	72.3	2,527	27.5	24	0.3
1982	9,173	6,357	69.3	2,736	29.8	80	0.9
1983	9,156	6,075	66.3	2,910	31.8	171	1.9
1984	9,102	5,714	62.8	3,041	33.4	347	3.8
1985	9,124	5,244	57.5	3,020	33.1	860	9.4
1986	9,167	4,604	50.2	2,943	32.1	1,620	17.7
1987	9,190	3,819	41.6	2,833	30.8	2,538	27.6
1988	9,300	3,031	32.6	2,692	28.9	3,577	38.5
1989	9,338	2,416	25.9	2,519	27.0	4,403	47.2
1990	9,872	1,646	16.7	2,410	24.4	5,816	58.9
1991	9,951	1,148	11.5	2,167	21.8	6,636	66.7
1992	10,069	615	6.1	1,924	19.1	7,530	74.8
1993	10,089	296	2.9	1,554	15.4	8,239	81.7
1994	10,023	95	0.9	1,133	11.3	8,795	87.7
1995	10,051	60	0.6	976	9.7	9,015	89.7
1996	9,966	1	0.0	718	7.2	9,247	92.8
1997	9,965	0	0.0	548	5.5	9,417	94.5
1998	9,788	0	0.0	431	4.4	9,357	95.6

ACCESS LINES SERVED BY TYPE OF OFFICE
(Thousands)

Year-End	All Offices	Electromechanical Offices		Analog Stored Program Controlled Offices		Digital Stored Program Controlled Offices	
1980	81,032	44,930	55.4 %	36,092	44.5 %	10	0.0 %
1981	82,581	40,425	49.0	42,099	51.0	57	0.1
1982	83,819	36,813	43.9	46,803	55.8	203	0.2
1983	86,186	32,652	37.9	52,919	61.4	615	0.7
1984	88,630	30,074	33.9	56,404	63.6	2,151	2.4
1985	91,455	24,778	27.1	58,532	64.0	8,145	8.9
1986	93,630	19,491	20.8	59,252	63.3	14,886	15.9
1987	96,593	14,205	14.7	59,442	61.5	22,946	23.8
1988	99,564	8,707	8.7	60,364	60.6	30,493	30.6
1989	102,684	5,646	5.5	58,846	57.3	38,192	37.2
1990	105,641	3,216	3.0	56,973	53.9	45,452	43.0
1991	107,389	1,876	1.7	53,450	49.8	52,062	48.5
1992	109,995	717	0.7	48,959	44.5	60,324	54.8
1993	113,368	264	0.2	41,912	37.0	71,192	62.8
1994	117,345	115	0.1	33,191	28.3	84,040	71.6
1995	122,266	63	0.1	29,031	23.7	93,172	76.2
1996	125,846	1	0.0	24,561	19.5	101,283	80.5
1997	131,722	0	0.0	21,219	16.1	110,503	83.9
1998	136,426	0	0.0	16,688	12.2	119,738	87.8

Sources: 1980-89 reported in CC Docket 89-624.
1990-98 reported in ARMIS 43-07.
Because of the differing sources, the data for 1989 and earlier years may not be consistent with the data for 1990 and later years.

TABLE 18.2

FEATURES AVAILABLE IN CENTRAL OFFICES
(Bell Operating Companies)

Year-End	Total Offices	Equal Access Offices		Signaling System 7 Offices *		ISDN Offices **	
1980	9,195	0	0.0 %	0	0.0 %	0	0.0 %
1981	9,198	0	0.0	0	0.0	0	0.0
1982	9,173	0	0.0	0	0.0	0	0.0
1983	9,156	0	0.0	0	0.0	0	0.0
1984	9,102	124	1.4	0	0.0	0	0.0
1985	9,124	1,891	20.7	0	0.0	0	0.0
1986	9,167	3,623	39.5	0	0.0	0	0.0
1987	9,190	4,823	52.5	29	0.3	4	0.0
1988	9,300	6,071	65.3	435	4.7	82	0.9
1989	9,338	6,788	72.7	931	10.0	179	1.9
1990	9,872	7,950	80.5	2,428	24.6	600	6.1
1991	9,951	8,601	86.4	3,670	36.9	920	9.2
1992	10,069	9,281	92.2	5,392	53.6	1,219	12.1
1993	10,089	9,697	96.1	6,688	66.3	1,874	18.6
1994	10,023	9,933	99.1	8,334	83.1	2,400	23.9
1995	10,051	9,978	99.3	8,977	89.3	2,868	28.5
1996	9,966	9,845	98.8	9,286	93.2	3,329	33.4
1997	9,965	9,936	99.7	9,688	97.2	3,902	39.2
1998	9,788	9,765	99.8	9,643	98.5	4,146	42.4

EQUIPPED ACCESS LINES BY TYPE OF OFFICE
(Thousands)

Year-End	All Offices	Equal Access Offices		Signaling System 7 Offices *		ISDN Offices **	
1980	81,032	0	0.0 %	0	0.0 %	0	0.0 %
1981	82,581	0	0.0	0	0.0	0	0.0
1982	83,819	0	0.0	0	0.0	0	0.0
1983	86,186	146	0.2	0	0.0	0	0.0
1984	88,630	9,350	10.5	0	0.0	0	0.0
1985	91,455	49,241	53.8	0	0.0	0	0.0
1986	93,630	70,543	75.3	0	0.0	0	0.0
1987	96,593	81,743	84.6	1,035	1.1	12	0.0
1988	99,564	91,809	92.2	10,325	10.4	47	0.0
1989	102,684	97,410	94.9	21,917	21.3	111	0.1
1990	105,641	102,429	97.0	40,026	37.9	13,970	13.2
1991	107,389	105,415	98.2	57,322	53.4	20,565	19.2
1992	109,995	109,007	99.1	76,486	69.5	28,376	25.8
1993	113,368	112,993	99.7	92,493	81.6	39,875	35.2
1994	117,345	117,266	99.9	109,465	93.3	56,546	48.2
1995	122,266	122,210	100.0	116,568	95.3	71,274	58.3
1996	125,846	125,845	100.0	122,344	97.2	85,435	67.9
1997	131,722	131,722	100.0	130,778	99.3	95,956	72.8
1998	136,426	136,426	100.0	136,246	99.9	106,834	78.3

Sources: 1980-89 reported in CC Docket 89-624.
1990-98 reported in ARMIS 43-07.
Because of the differing sources, the data for 1989 and earlier years may not be entirely consistent with the data for 1990 and later years.

* Signaling System 7 Switch (SS7-317)
** ISDN basic access line capacity reported for 1990-1998.

TABLE 18.3

LOCAL TRANSMISSION TECHNOLOGY
(Bell Operating Companies)

DIGITAL TRANSMISSION LINKS

Year-End	Total	Copper		Fiber		Radio	
1990	2,895,117	1,092,041	37.7 %	1,737,984	60.0 %	65,092	2.2 %
1991	3,271,023	1,039,316	31.8	2,154,043	65.9	77,664	2.4
1992	3,564,847	864,931	24.3	2,610,185	73.2	89,731	2.5
1993	4,159,574	805,290	19.4	3,264,106	78.5	90,175	2.2
1994	4,495,728	568,197	12.6	3,846,394	85.6	81,137	1.8
1995	5,828,645	485,909	8.3	5,274,173	90.5	68,563	1.2
1996	7,955,574	433,758	5.5	7,477,395	94.0	44,421	0.6
1997	10,067,498	413,204	4.1	9,610,601	95.5	43,693	0.4
1998	13,558,832	420,488	3.1	13,099,829	96.6	38,515	0.3

* 1990 contains some analog links.

WORKING TELECOMMUNICATIONS CHANNELS
(Thousands)

Year-End	Total	Copper		Fiber		Radio	
1990	122,564 *	106,373	86.8 %	3,546	2.9 %	0	0.0 %
1991	118,654	114,047	96.1	4,605	3.9	2	0.0
1992	120,848	114,609	94.8	6,238	5.2	1	0.0
1993	124,191	115,496	93.0	8,694	7.0	1	0.0
1994	130,192	118,437	91.0	11,754	9.0	0	0.0
1995	136,231	122,975	90.3	13,255	9.7	0	0.0
1996	142,824	125,595	87.9	17,228	12.1	1	0.0
1997	149,429	128,436	86.0	20,992	14.0	0	0.0
1998	160,621	131,867	82.1	28,753	17.9	0	0.0

Source: ARMIS 43-07 report.

* Includes some other channels.

TABLE 18.4

STATUS OF SELECTED NETWORK CAPABILITIES OF SURVEY RESPONDENTS
(As of Second Quarter 1999)

State	Companies	Offices	Access Lines	% Central Offices		Percentage of Companies with Broadband Technologies 1/					
				Eq. Acc. 2/	SS7	ISDN	SONET	Frame Relay	ATM	xDSL	Internet 3/
Alabama	22	98	168,684	97%	80%	41%	45%	9%	0%	5%	73%
Alaska	23	105	233,436	24%	9%	26%	26%	17%	9%	30%	65%
Arizona	10	44	26,000	98%	44%	20%	20%	10%	0%	0%	60%
Arkansas	21	105	114,116	98%	53%	38%	38%	5%	5%	5%	76%
California	12	48	67,710	83%	56%	33%	33%	0%	0%	8%	75%
Colorado	24	60	41,468	93%	58%	17%	17%	0%	0%	4%	50%
Connecticut	1	3	21,522	100%	100%	100%	100%	0%	0%	100%	100%
Florida	3	6	26,442	100%	100%	100%	67%	0%	0%	0%	100%
Georgia	28	108	299,913	94%	77%	54%	54%	7%	0%	4%	75%
Guam	1	17	74,876	100%	18%	100%	100%	0%	0%	0%	0%
Hawaii	1	3	179	100%	67%	0%	0%	0%	0%	0%	0%
Idaho	16	67	44,631	91%	32%	19%	25%	0%	0%	19%	63%
Illinois	21	91	117,552	97%	96%	29%	29%	19%	10%	19%	62%
Indiana	32	80	113,851	100%	90%	53%	56%	28%	6%	22%	84%
Iowa	137	311	198,160	99%	84%	26%	34%	5%	4%	14%	87%
Kansas	29	225	104,005	97%	87%	38%	59%	10%	3%	17%	86%
Kentucky	14	108	159,386	94%	94%	29%	64%	14%	0%	14%	86%
Louisiana	17	97	129,264	95%	97%	18%	35%	0%	0%	0%	88%
Maine	19	122	139,148	99%	64%	32%	63%	0%	5%	16%	53%
Maryland	1	1	7,294	100%	100%	0%	100%	0%	0%	0%	0%
Massachusetts	1	1	1,208	100%	100%	0%	0%	0%	0%	0%	100%
Michigan	32	99	108,540	95%	67%	19%	22%	13%	9%	16%	72%
Minnesota	76	290	296,568	95%	86%	33%	32%	28%	8%	14%	67%
Mississippi	14	45	56,954	89%	71%	21%	14%	14%	7%	0%	86%
Missouri	32	150	88,071	94%	89%	41%	41%	0%	9%	16%	69%
Montana	14	189	92,634	98%	87%	36%	79%	7%	21%	43%	100%
Nebraska	36	144	75,387	100%	81%	17%	28%	8%	0%	3%	81%
Nevada	7	29	29,050	86%	76%	14%	57%	14%	14%	57%	29%
New Hampshire	7	22	36,451	95%	86%	71%	57%	0%	0%	14%	71%
New Mexico	11	77	40,990	97%	78%	36%	55%	27%	0%	18%	82%
New York	29	71	134,336	96%	85%	45%	59%	10%	14%	14%	72%
North Carolina	15	63	268,715	94%	97%	53%	60%	33%	27%	13%	80%
North Dakota	22	228	142,484	97%	76%	32%	23%	36%	18%	36%	91%
Ohio	31	72	197,851	100%	92%	23%	45%	10%	10%	19%	81%
Oklahoma	33	270	192,008	99%	86%	42%	21%	9%	9%	12%	67%
Oregon	26	58	74,833	92%	63%	23%	38%	12%	0%	27%	77%
Pennsylvania	20	131	524,254	100%	98%	60%	60%	15%	10%	30%	65%
South Carolina	15	54	121,293	98%	89%	60%	87%	13%	27%	7%	100%
South Dakota	25	174	98,934	98%	91%	52%	44%	40%	16%	20%	84%
Tennessee	20	118	314,308	96%	99%	55%	80%	0%	0%	5%	80%
Texas	44	330	246,381	98%	86%	34%	41%	5%	5%	7%	75%
Utah	7	37	23,908	97%	89%	14%	29%	0%	0%	14%	86%
Vermont	9	45	63,300	100%	80%	67%	56%	22%	11%	11%	78%
Virginia	15	49	75,930	98%	94%	40%	40%	0%	7%	7%	87%
Washington	16	43	69,605	88%	81%	38%	31%	6%	0%	13%	44%
West Virginia	6	13	15,684	100%	92%	17%	33%	0%	0%	0%	33%
Wisconsin	76	257	416,984	99%	90%	34%	33%	12%	7%	8%	84%
Wyoming	5	30	23,755	90%	90%	0%	80%	0%	0%	40%	60%
Totals	1,076	4,988	5,918,053	93%	79%	34%	40%	11%	6%	14%	76%

Source: National Exchange Carrier Association, *Keeping America Connected: The Broadband Challenge*; survey of nearly 1,100 small, mostly rural telephone companies.

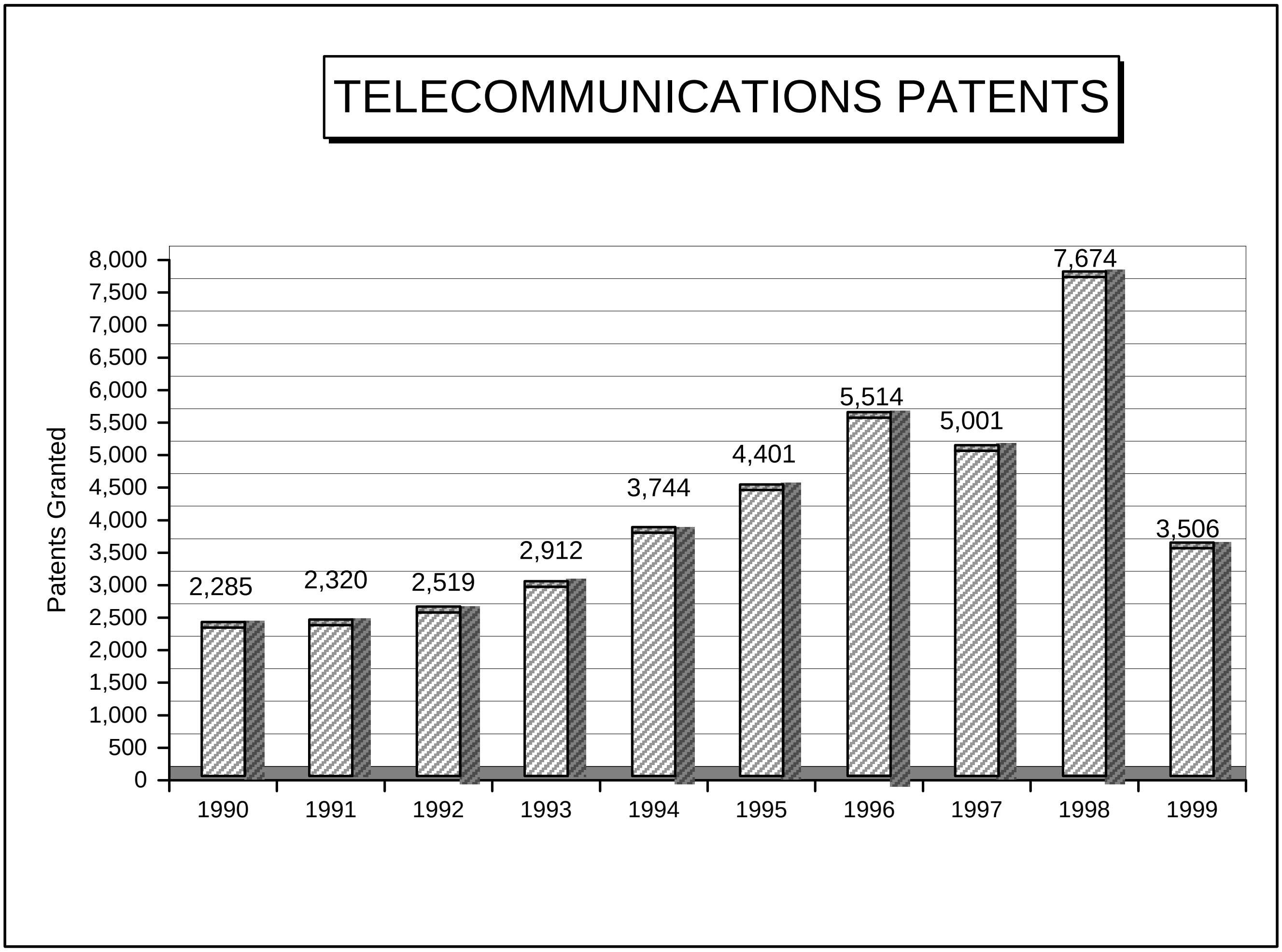
*Because some companies did not return surveys and the default of digital was "no", the total number of switches used to compute digital were those companies that completed the survey and those companies that had indicated they were digital in past surveys.

1/ Services shown as "Percent of Companies" indicates that the service is available at those companies, not that all customers at each of those companies subscribe to that service.

2/ Equal access gives customers a choice of long distance carrier. Although not a new service, NECA continues to track progress toward the goal of 100% equal access capability.

3/ Internet Service Provider (ISP) functions shown are provided on a non-regulated basis.

CHART 18.1



Source: U.S. Patent and Trademark Office, *Technology Profile Report - Telecommunications,* Classes 370, 375, 379 and 455.

1996 total reflects one-time change in law affecting patents.
1999 data reflects patents as of June 30, 1999.

19 TELECOMMUNICATIONS INDUSTRY REVENUES:

Since 1993, all carriers with interstate revenues have been required to file an annual Telecommunications Relay Service (TRS) Fund Worksheet. Because revenues derived from providing access to the interstate network are considered to be interstate, virtually all carriers are required to file information. Starting in 1997, larger carriers were required to file universal service worksheets, which contain similar information but with breakouts for revenue from service provided for resale and for service provided to end users. Table 19.1 shows how TRS and Universal Service Worksheet data were combined to estimate total industry telecommunication revenue of $246 billion in 1998. A large share of access revenues, for example, represents payments from toll carriers to traditional local exchange carriers for access and are included as local service carrier's carrier revenue. Table 19.2 shows how local, wireless and toll revenues have changed over time. The table highlights how some significant changes in the revenue levels from 1996 to 1997 are due to major reporting changes. The number of carriers paying into the TRS fund by type of carrier are shown in Table 19.3. Table 19.4 contains revenue for 1992 – 1993 by type of carrier. Additional revenue detail can be found in the latest *Monitoring* and *Telecommunications Industry Revenue* reports.

The publication *Carrier Locator: Interstate Service Providers* lists 4,144 carriers that filed a TRS Worksheet in 1999. It also contains an address and contact telephone number for each carrier. (The 1999 TRS worksheets contained data for 1998. A *Carrier Locator* for worksheets filed in 2000 will be published this summer and available on the **FCC-State Link** at that time. It will be compiled from a new telecommunications reporting worksheet filed with the administrators for local number portability, numbering administration, Telecommunications Relay Services, and universal service mechanisms.)

Table 19.5 provides estimates of industry telephone revenue by state for 1995-1998 Table 19.5 also provides estimates for end-user and carrier's carrier revenue for 1998. Nationwide telephone revenue from *Telecommunications Industry Revenue: 1998* is allocated to each state using data from the *Statistics of Communication Common Carriers* and from the *Statistical Abstract of the United States*.

TABLE 19.1
TELECOMMUNICATIONS INDUSTRY REVENUE: 1998
(Dollar Amounts Shown in Millions)

	Universal Service Worksheet Data			TRS Worksheet Data ***	Total
	Carrier's Carrier Revenue *	End User Revenue *	International - to - International Revenue **		
Local Service	$29,207	$74,761	$0	$595	$104,563
Wireless Service	3,045	33,537	4	189	36,775
Toll Service	13,252	89,154	1,116	1,532	105,055
Service reported as					
Intrastate	18,788	122,538		783	142,108
Interstate	26,715	74,914	1,121	1,535	104,284
Total	$45,503	$197,452	$1,121	$2,317	$246,392

Source: Industry Analysis Division, *Telecommunications Industry Revenue.*

Note: Detail may not add to totals due to rounding.

* Carrier's carrier revenue is reported on the Universal Service Worksheet as sales to other universal service contributors for resale. This includes, for example, access services that local exchange carriers provide to toll carriers. Sales to *de minimis* carriers, customers, governments, non-profits and any other non-contributors are treated as end-user revenue. Filers contribute to the universal service funding mechanisms based on their end-user revenues.

** Revenue from calls that both originate and terminate in foreign points are reported as end-user revenue, but are not included in the universal service contribution bases.

*** Many carriers were exempted from universal service filing requirements because their potential contributions to the universal service support mechanisms were expected to be *de minimis* --- that is, their contribution for the year was expected to be less than $10,000. 1998 revenues for these carriers was estimated based on 1997 revenue information that they filed in 1998 TRS worksheets.

TABLE 19.2

TELECOMMUNICATIONS REVENUE REPORTED BY TYPE OF SERVICE
(Dollar Amounts Shown in Millions)

	TRS Data					Universal Service & TRS Data	
	1992	1993	1994	1995	1996	1997	1998
Local Exchange	$39,235	$40,176	$42,245	$45,194	$48,717	$53,771	$59,245
Pay Telephone *						2,182	2,536
Local Private Line **	1,049	1,088	1,138	1,226	1,616	8,282	10,403
Other Local ***	7,687	8,002	8,302	10,428	10,543	2,847	2,179
Subscriber Line Charges **						8,327	11,052
Access **	29,353	30,832	32,759	33,911	35,641	21,423	18,449
Universal Service Surcharges on Local Service Bills ****							103
Additional revenue from TRS Worksheets						595	595
Total Local Service	77,324	80,098	84,443	90,759	96,516	97,426	104,563
Wireless Service	7,285	10,237	14,293	18,759	26,049	32,760	36,240
Universal Service Surcharges on Wireless Service Bills ****							345
Additional revenue from TRS Worksheets						189	189
Total Wireless Service	7,285	10,237	14,293	18,759	26,049	32,950	36,775
Operator *	9,465	10,772	10,539	11,170	10,975	12,002	12,205
Non-Operator Switched Toll	54,448	60,591	61,468	65,217	73,751	72,059	74,168
Long Distance Private Line	7,783	8,067	9,043	9,719	10,665	10,504	11,952
Other Long Distance	4,048	3,095	3,428	3,523	4,299	4,695	3,386
Universal Service Surcharges on Toll Service Bills ****							1,810
Additional revenue from TRS Worksheets						1,532	1,532
Total Toll Service	75,744	82,525	84,478	89,629	99,691	100,793	105,055
Non-Telecommunications Formerly Reported as Other Local and Wireless ***	(6,944)	(7,518)	(8,324)	(9,071)	(10,474)		
Total Telecommunications ***	153,409	165,342	174,890	190,076	211,782	231,168	246,392
Non-Telecommunications ***						25,633	27,944
Total Reported Revenue	$160,353	$172,860	$183,214	$199,147	$222,256	$256,801	$272,019
Service Reported as:							
Intrastate	89,323	96,927	102,603	112,923	127,849	133,654	142,108
Interstate	71,030	75,933	80,611	86,224	94,407	97,514	104,284

Source: Industry Analysis Division, *Telecommunications Industry Revenue.*

Note: Some data for prior years have been revised. Detail may not add to totals due to rounding.

* TRS filers generally reported pay telephone revenue as local service revenue, access revenue or operator toll revenue. The Universal Service Worksheet contains a separate category for pay telephone revenue.

** TRS Worksheet filers generally reported special access revenue as access revenue. Using Universal Service Worksheet data as the primary source instead of TRS worksheet data explains the jump in local private line revenue and the fall in access revenue shown for 1997. TRS Worksheet filers included subscriber line charges with other access charges. Universal Service Worksheet filers report subscriber line charges in a separate category. The jump from 1997 to 1998 represents PICC charges levied by ILECs as well as $1.2 billion of PICC pass-through charges levied by toll carriers.

*** Significant amounts of enhanced service, billing and collection, CPE and other non-telecommunications revenues were reported in the TRS mobile and other local service categories through 1996. Universal Service Worksheet filers report these revenues in the non-telecommunications category. For prior years, the amounts of non-telecommunications revenue reported as mobile and other local revenue were estimated as 70% of the amounts that Tier 1 LECs reported in ARMIS as miscellaneous and nonregulated revenues (currently Account 5200 + Account 5280) and 10% of amounts reported as mobile service revenue.

**** Charges on end-user bills identified as recovering state or federal universal service contributions are reported separately from local, wireless and toll revenue. Reported amounts are apportioned between local, wireless and toll service based on the proportions of local, wireless and toll intrastate and interstate revenue by types of carrier.

TABLE 19.3

NUMBER OF CARRIERS PAYING INTO THE TELECOMMUNICATIONS RELAY SERVICE FUND BY TYPE OF CARRIER

Service Provider Category *	1992	1993	1994	1995	1996	1997	1998
Incumbent Local Exchange Carriers **		1,281	1,347	1,347	1,376	1,410	1,348
Pay Telephone Providers		163	197	271	533	509	615
Competitive Access Providers (CAPs) and Competitive Local Exchange Carriers (CLECs)		20	30	57	94	129	212
Local Resellers					8	11	54
Other Local Exchange Carriers					17	7	10
Competitors of ILECs		20	30	57	119	147	276
Local Service Providers		1,464	1,574	1,675	2,028	2,066	2,239
Wireless Telephony -- Cellular Service Carriers & Personal Communications Service (PCS) and Specialized Mobile Radio (SMR) Telephone		798	790	792	853	732	808
Paging Service Providers		126	117	138	200	137	303
SMR Dispatch and Other Mobile Service Providers					163	99	142
Wireless Data Service Providers					1	1	5
Wireless Service Providers		924	907	930	1,217	969	1,258
Interexchange Carriers (IXCs)		83	97	130	149	151	171
Operator Service Providers (OSPs)		35	29	25	27	32	24
Prepaid Calling Card Providers				8	16	18	20
Satellite Service Carriers					22	13	13
Toll Resellers		171	206	260	345	340	388
Other Toll Carriers		32	34	30	28	15	31
Toll Service Providers		321	366	453	587	569	647
All Filers	2,558	2,709	2,847	3,058	3,832	3,604	4,144

Source: Industry Analysis Division, *Carrier Locator*.

* The first time carriers were asked to select a type of carrier category that best identified them was when they filed 1993 data in their 1994 TRS worksheets. Several carrier types have been added since that time. Satellite service providers, for example, used to identify themselves as other toll providers.

** Fewer incumbent local exchange carriers filed in 1998 than in 1997 because of the consolidation of study areas.

TABLE 19.4

GROSS REVENUE REPORTED BY TYPE OF CARRIER
(Dollars Shown in Millions)

	TRS Worksheet Categories					Universal Service & TRS Data	
Service Provider Category *	1992	1993	1994	1995	1996	1997	1998
Incumbent Local Exchange Carriers **	$91,584	$95,228	$98,431	$102,820	$107,905	$105,154	$108,234
Pay Telephone Providers	183	175	300	349	357	933	1,101
Competitive Access Providers (CAPs) and Competitive Local Exchange Carriers (CLECs)	69	191	281	623	1,011	1,919	3,348
Local Resellers						206	410
Other Local Exchange Carriers						157	36
Private Carriers						112	147
Shared Tenant Service Providers						87	93
Competitors of ILECs	69	191	281	623	1,011	2,481	4,034
Local Service Providers	91,835	95,595	99,011	103,792	109,273	108,568	113,369
Wireless Telephony -- Cellular Service Carriers & Personal Communications Service (PCS) and Specialized Mobile Radio (SMR) Telephone**	6,718	9,215	13,259	17,208	23,778	29,944	33,139
Paging Service Providers **						2,861	3,161
SMR Dispatch and Other Mobile Service Providers	670	964	938	1,419	2,121	225	731
Wireless Service Providers	7,387	10,179	14,197	18,627	25,900	33,030	37,032
Interexchange Carriers (IXCs)	57,341	61,118	66,381	70,938	79,057	79,080	83,443
Operator Service Providers (OSPs)	558	695	536	500	461	603	590
Prepaid Calling Card Providers				16	238	519	888
Satellite Service Carriers						1,011	475
Toll Resellers	1,293	1,869	2,840	4,220	6,564	8,010	9,885
Other Toll Carriers	2,186	711	709	773	577	348	710
Toll Service Providers	61,378	64,393	70,466	76,447	86,896	89,570	95,992
Non-Telecommunications Revenue in Prior-Year Data **	(6,944)	(7,518)	(8,324)	(9,071)	(10,474)		
Other Adjustments ***	(248)	2,693	(461)	280	187	0	0
Total Telecommunications Revenue	$153,409	$165,342	$174,890	$190,076	$211,782	$231,168	$246,392

Source: Industry Analysis Division, *Telecommunications Industry Revenue.*

* Filers are asked to select a service provider category that best describes their operations. The choices have changed over the years. For example, most satellite service providers identified themselves as other toll carriers in their 1997 TRS worksheets because there was no separate category for satellite service providers.

** Significant amounts of enhanced service, billing and collection, customer premises equipment (CPE) and other non-telecommunications revenues were reported on TRS worksheets by incumbent local exchange carriers (ILECs) and wireless carriers through 1996. Universal Service Worksheet filers report these revenues in the non-telecommunications category. For prior years, the amounts of non-telecommunications revenue reported as mobile and other local revenue were estimated as 70% of the amounts that Tier 1 ILECs reported in their ARMIS filings as miscellaneous and nonregulated revenues (currently Account 5200 + Account 5280) and 10% of amounts reported as mobile service revenue.

*** Other adjustments include some amounts withheld to preserve confidentiality and revisions made after the initial publication of the data.

TABLE 19.5
TELEPHONE REVENUE BY STATE
(Revenue in Millions of Dollars)

	1995	1996	1997	1998				
State Name	Total	Total	Total	Carrier's Carrier	End User	Total	Percent Of Total	Percent Change 1995-1998
Alabama	$2,668	$2,946	$3,205	$593	$2,801	$3,394	1.38 %	27.2 %
Alaska	464	518	561	115	475	590	0.24	27.3
Arizona	2,842	3,249	3,667	764	3,194	3,958	1.61	39.3
Arkansas	1,534	1,719	1,885	373	1,632	2,005	0.81	30.8
California	22,379	25,100	27,236	5,271	23,422	28,692	11.64	28.2
Colorado	3,128	3,526	4,006	810	3,449	4,260	1.73	36.2
Connecticut	2,765	2,943	3,266	578	2,595	3,173	1.29	14.8
Delaware	492	567	627	108	576	685	0.28	39.2
Dist. of Columbia	886	955	1,049	210	875	1,085	0.44	22.4
Florida	11,582	12,972	14,161	2,974	12,068	15,042	6.10	29.9
Georgia	5,335	6,004	6,849	1,393	6,076	7,469	3.03	40.0
Hawaii	775	841	930	193	777	969	0.39	25.1
Idaho	791	908	967	218	792	1,010	0.41	27.6
Illinois	7,916	8,920	10,069	1,878	9,069	10,948	4.44	38.3
Indiana	3,804	4,192	4,536	962	3,848	4,810	1.95	26.4
Iowa	1,888	2,039	2,163	491	1,776	2,268	0.92	20.1
Kansas	1,829	2,017	2,165	424	1,879	2,304	0.93	25.9
Kentucky	2,353	2,629	2,861	621	2,440	3,060	1.24	30.1
Louisiana	2,703	2,946	3,192	589	2,843	3,432	1.39	26.9
Maine	869	976	996	226	879	1,105	0.45	27.2
Maryland	3,767	4,234	4,625	817	4,095	4,911	1.99	30.4
Massachusetts	4,988	5,455	6,010	1,131	5,207	6,338	2.57	27.1
Michigan	6,444	7,246	7,983	1,486	7,036	8,523	3.46	32.3
Minnesota	3,064	3,461	3,864	828	3,287	4,115	1.67	34.3
Mississippi	1,584	1,734	1,877	340	1,677	2,017	0.82	27.3
Missouri	3,623	4,017	4,389	961	3,652	4,613	1.87	27.3
Montana	640	709	756	155	626	780	0.32	21.9
Nebraska	1,296	1,428	1,540	328	1,260	1,587	0.64	22.5
Nevada	1,099	1,324	1,489	282	1,310	1,592	0.65	44.9
New Hampshire	989	1,118	1,208	249	997	1,246	0.51	25.9
New Jersey	7,091	7,927	8,707	1,706	7,660	9,366	3.80	32.1
New Mexico	1,121	1,262	1,370	298	1,135	1,433	0.58	27.9
New York	14,983	16,026	17,120	3,328	14,606	17,935	7.28	19.7
North Carolina	5,394	6,104	6,613	1,520	5,777	7,297	2.96	35.3
North Dakota	481	587	596	125	474	599	0.24	24.4
Ohio	7,457	8,219	8,823	1,775	7,622	9,396	3.81	26.0
Oklahoma	1,996	2,179	2,410	442	2,110	2,552	1.04	27.8
Oregon	2,238	2,502	2,720	597	2,308	2,905	1.18	29.8
Pennsylvania	7,961	8,867	9,588	1,961	8,348	10,309	4.18	29.5
Rhode Island	686	761	839	157	702	859	0.35	25.3
South Carolina	2,653	2,849	3,053	643	2,749	3,393	1.38	27.9
South Dakota	488	584	602	131	504	635	0.26	30.1
Tennessee	3,467	3,880	4,302	818	3,735	4,553	1.85	31.3
Texas	12,871	14,563	15,943	3,899	13,677	17,576	7.13	36.6
Utah	1,112	1,284	1,443	295	1,262	1,557	0.63	40.0
Vermont	424	547	575	123	479	602	0.24	41.8
Virginia	5,061	5,646	6,179	1,279	5,296	6,576	2.67	29.9
Washington	3,995	4,438	4,613	1,037	4,043	5,080	2.06	27.1
West Virginia	1,143	1,240	1,337	265	1,118	1,383	0.56	21.0
Wisconsin	3,258	3,621	3,927	760	3,474	4,234	1.72	30.0
Wyoming	366	402	449	93	369	462	0.19	26.3
United States	188,744	210,180	229,442	46,620	198,063	244,682	99.31	29.6
Guam	N.A.	85	97	20	83	103	0.04	N.A.
N. Mariana Isl.	15	18	21	6	24	30	0.01	102.3
Puerto Rico	1,244	1,405	1,606	305	1,162	1,467	0.60	17.9
Virgin Islands	74	93	101	23	87	109	0.04	48.3
Grand Total	$190,076	$211,782	$231,168	$46,973	$199,419	$246,392	100.00 %	29.6 %

Source: Industry Analysis Division, *State-By-State Telephone Revenue and Universal Service Data.*

Figures may not add to totals due to rounding.

20 TELEPHONE LINES:

Within the telephone industry there are several alternative, but closely related, definitions of telephone lines or loops. While these differences often make it difficult to reconcile data from different statistical series, they are not usually large enough to affect comparisons among companies or trends over time. Since 1970, over 90% of households and virtually all businesses have subscribed to telephone service. Therefore, line growth over time, averaging about 3% per year, has historically reflected growth in the population and the economy. In recent years, the growth in lines has increased as households have added additional lines.

Table 20.1 shows the nation's total number of telephone lines using three alternative measures. One measure is the number of local loops, which is a way of counting lines that is used to determine the amount of Universal Service Fund payments to local exchange carriers. A second measure is the number of presubscribed lines, which were used before 1998 to determine the amount of payments by the interexchange carriers to support the Universal Service Fund and the Lifeline and LinkUp programs. The third measure, access lines, are estimates for the whole industry based on data filed with the Commission by large local exchange carriers.

Table 20.2 shows the number of local exchange carriers and loops in each state, and shows breakdowns by loops for price-cap and average-schedule companies. Table 20.3 shows the number of loops by holding companies.

Table 20.4 compares the number of residential local loops with the number of households with telephone service. The difference between these series is an approximate measure of the number of additional residential access lines. Table 20.4 shows that the percentage of additional lines for households with telephone service has increased dramatically, from about 3% in 1988 to about 22% in 1998.

TABLE 20.1

Total U.S. Telephone Lines *

Year	Presubscribed Lines	Annual Growth (%)	Local Loops	Annual Growth (%)	Access Lines	Annual Growth (%)
1980			102,216,367			
1981			105,559,222	3.3 %		
1982			107,519,214	1.9		
1983			110,612,689	2.9		
1984			112,550,739	1.8	113,880,538	
1985			115,985,813	3.1	117,434,802	3.1 %
1986			118,289,121	2.0	120,781,565	2.8
1987	121,466,500		122,789,249	3.8	124,678,710	3.2
1988	124,360,829	2.4 %	127,086,765	3.5	126,953,616	1.8
1989	128,482,479	3.3	131,504,568	3.5	130,915,695	3.1
1990	132,408,608	3.1	136,114,201	3.5	134,743,029	2.9
1991	135,286,582	2.2	139,412,884	2.4	139,672,703	3.7
1992	138,725,040	2.5	143,341,581	2.8	142,428,028	2.0
1993	142,809,280	2.9	148,106,159	3.3	147,095,681	3.3
1994	148,479,328	4.0	153,447,946	3.6	151,607,529	3.1
1995	152,601,177	2.8	159,659,411	4.0	158,219,924	4.4
1996	158,672,243	4.0	166,443,124	4.2	165,420,650	4.6
1997	NA	NA	173,858,146	4.5	173,705,523	5.0
1998	NA	NA	179,822,123	3.4	180,471,261	3.9

Source: Presubscribed lines and local loops: National Exchange Carrier Association.
Access Lines: *Statistics of Communications Common Carriers*, 1998/1999 edition. Table 6.10, inflating the reporting carriers' access lines to represent the total industry.

* Year-end data.

TABLE 20.2

TELEPHONE LOOPS BY STATE
(As of December 31, 1998)

STATE NAME	Study Areas	Price Cap: Bell Company Loops	Price Cap: Other Company Loops	Non-Price Cap: Average Schedule Company Loops	Non-Price Cap: Other Company Loops	Total Loops
Alabama	30	1,965,770	309,040	50,859	139,054	2,464,723
Alaska	25	0	22,258	4,808	381,462	408,528
Arizona	16	2,687,683	152,964	0	30,310	2,870,957
Arkansas	28	979,814	213,153	24,252	204,955	1,422,174
California	22	17,427,132	4,598,938	0	195,796	22,221,866
Colorado	28	2,637,426	0	3,154	116,249	2,756,829
Connecticut	2	2,188,763	0	22,883	0	2,211,646
Delaware	1	558,152	0	0	0	558,152
Dist. of Columbia	1	934,397	0	0	0	934,397
Florida	12	6,507,857	4,276,627	0	173,980	10,958,464
Georgia	36	4,181,693	28,512	86,777	708,089	5,005,071
Hawaii	2	0	717,732	0	108	717,840
Idaho	21	508,665	152,187	4,708	41,282	706,842
Illinois	56	7,013,269	936,702	42,080	217,234	8,209,285
Indiana	42	2,239,222	1,200,000	93,380	56,579	3,589,181
Iowa	154	1,066,349	343,159	208,837	23,066	1,641,411
Kansas	39	1,385,402	140,252	20,636	103,404	1,649,694
Kentucky	19	1,208,974	742,433	148,621	33,763	2,133,791
Louisiana	20	2,347,702	0	9,749	171,983	2,529,434
Maine	20	688,700	0	34,179	101,778	824,657
Maryland	2	3,629,056	0	6,968	0	3,636,024
Massachusetts	3	4,510,477	0	2,899	1,121	4,514,497
Michigan	39	5,433,171	779,441	34,109	167,128	6,413,849
Minnesota	88	2,205,811	406,897	228,304	151,967	2,992,979
Mississippi	19	1,280,362	6,110	23,235	59,842	1,369,549
Missouri	44	2,590,300	684,519	22,623	153,120	3,450,562
Montana	18	358,852	8,653	3,868	152,118	523,491
Nebraska	41	526,026	87,212	28,793	372,644	1,014,675
Nevada	14	348,674	899,398	0	29,448	1,277,520
New Hampshire	12	789,855	0	2,087	52,012	843,954
New Jersey	3	6,252,611	212,925	0	9,878	6,475,414
New Mexico	15	786,574	96,740	0	41,693	925,007
New York	44	11,553,051	1,016,967	20,582	253,188	12,843,788
North Carolina	26	2,459,133	1,806,923	239,351	436,895	4,942,302
North Dakota	24	250,274	0	69,117	90,586	409,977
Ohio	42	4,092,482	2,285,168	68,667	439,001	6,885,318
Oklahoma	39	1,664,971	118,118	5,608	229,469	2,018,166
Oregon	33	1,366,840	558,936	11,491	141,534	2,078,801
Pennsylvania	36	6,346,577	1,081,026	540,916	243,533	8,212,052
Rhode Island	1	661,033	0	0	0	661,033
South Carolina	27	1,467,777	313,926	73,060	393,441	2,248,204
South Dakota	31	273,563	0	92,603	51,866	418,032
Tennessee	25	2,684,626	353,114	134,941	196,148	3,368,829
Texas	57	9,802,614	2,277,946	9,328	526,700	12,616,588
Utah	13	1,081,672	22,575	4,648	29,194	1,138,089
Vermont	10	339,570	0	4,146	58,155	401,871
Virginia	21	3,474,493	987,813	94,133	18,503	4,574,942
Washington	23	2,489,593	919,500	4,026	249,466	3,662,585
West Virginia	10	824,403	146,378	8,229	7,528	986,538
Wisconsin	88	2,175,880	567,991	209,092	439,062	3,392,025
Wyoming	10	240,854	7,513	0	41,496	289,863
United States	1,432	138,488,145	29,479,746	2,697,747	7,735,828	178,401,466
Guam	1	0	0	0	75,051	75,051
N. Mariana Isl.	1	0	20,639	0	0	20,639
Puerto Rico	2	0	0	0	1,261,733	1,261,733
Virgin Islands	1	0	0	0	63,234	63,234
Grand Total	1,437	138,488,145	29,500,385	2,697,747	9,135,846	179,822,123

Source: NECA universal service filings.

TABLE 20.3

TELEPHONE LOOPS BY HOLDING COMPANY*
(As of December 31, 1998)

Holding Companies	Loops
SBC Communications	57,341,694
Bell Atlantic Corporation	40,562,375
BellSouth Telecommunications, Inc.	24,103,894
GTE Corporation	20,109,998
U S WEST, Inc.	16,480,182
Sprint Corporation (United)	7,620,650
ALLTEL Corporation	2,174,934
Century Telephone Enterprises, Inc.	1,242,468
Frontier Corporation	1,070,637
Cincinnati Bell, Inc.	987,374
Citizens Utility Company	973,459
Telephone & Data Systems, Inc.	547,619
C-TEC Corporation	276,778
ATU Telecommunications	230,374
North State Telephone Company	126,149
Roseville Telephone Company	117,860
Rock Hill Telephone Company	113,482
The Concord Telephone Company	110,525
Lufkin-Conroe Communications, Inc.	109,385
MJD Communications	103,835
Madison River Telephone Company	87,810
Consolidated Communications, Inc.	87,210
Conestoga Telephone & Telegraph Company	76,085
Horry Telephone Cooperative, Inc.	75,821
Guam Telephone Authority	75,051
North Pittsburgh Telephone Company	73,226
Virgin Islands Telephone Corporation	63,234
Hargray Communication Group, Inc.	60,158
Denver & Ephrata Telephone Company	57,064
Farmers Telephone Cooperative, Inc.	54,080
Matanuska Telephone Association	51,760
Pioneer	50,640
Gulf Coast Service, Inc.	49,423
GT Com	46,901
SRT Service Corporation	45,342
Lynch Corporation	38,720
Mankato Citizens Telephone Company	38,160
CFW Communications Company	37,156
Coastal Utilities, Inc.	36,821
East Ascension Telephone Company, Inc.	36,659
The Chillicothe Telephone Company	35,990
Fort Bend Communication Company	35,326
Atlantic Telephone Membership Corporation	35,171
Twin Lakes Telephone Cooperative	34,921
Golden West Telecommunications Cooperative	34,597
Chorus Communications Group	34,392
Telephone Electronics Corporation	34,257
Ben Lomand	33,985
Great Plains Communications, Inc.	33,532
Lexington Communications, Inc.	33,462
Skyline Telephone Membership Corporation	32,956
Smithville Telephone Company, Inc.	31,895
Guadalupe Valley Telephone Cooperative	31,828
Yadkin Valley Telephone	29,301
Wood County Telephone Company	29,080
Eastex Telephone Cooperative, Inc.	28,571
Ollig Utilities Company	27,694
South Central Rural Telephone Cooperative, Inc.	26,488
Brandenburg Telephone Company	26,060
All Other Companies	3,667,624
Total	179,822,123

Source: NECA universal service filings.

* Loops are for holding companies with more than 25,000 loops.

TABLE 20.4

ADDITIONAL RESIDENTIAL LINES
FOR HOUSEHOLDS WITH TELEPHONE SERVICE
(End-of-Year Data in Millions)

Year	Loops 1/			Households with Telephone Service 2/	Additional Residential Lines	Percentage of Additional Lines for Households with Telephones
	Residential	Non-Residential	Total Loops			
1988	87.7	38.5	126.2	85.4	2.3	2.7 %
1989	90.0	40.6	130.6	87.4	2.6	3.0
1990	92.2	42.9	135.1	88.4	3.9	4.4
1991	95.9	42.5	138.4	89.4	6.5	7.3
1992	99.3	43.0	142.3	91.0	8.3	9.1
1993	101.8	45.2	147.0	93.0	8.8	9.4
1994	105.1	47.2	152.3	93.7	11.4	12.2
1995	108.1	50.4	158.5	94.2	13.9	14.8
1996	111.5	53.5	165.0	95.1	16.4	17.2
1997	115.6	56.8	172.5	96.5	19.1	19.8
1998	119.9	58.5	178.4	98.0	21.9	22.3

Source: FCC staff estimates.

1/ Total loops are from the Universal Service Fund subscriber line counts provided by the National Exchange Carrier Association. Guam, the Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands totals have been removed. Total loops have been divided between residential and non-residential using the ratio of residential to non-residential access lines reported in *Statistics of Communications Common Carriers.* Those totals also exclude Puerto Rico, but cover only the carriers that file ARMIS reports (of which there are none for Guam, the Northern Mariana Islands, and the U.S. Virgin Islands). Loop counts beginning in 1996 have been increased by estimated competitive local exchange carrier lines from ALTS and New Paradigm Resources Group.

2/ *Current Population Survey* (U.S. Department of Commerce, Bureau of the Census.)

21 TELEPHONE NUMBERS:

In 1994, many area codes were nearing exhaustion as demand for telephone numbers continued to rise. Adding new area codes was difficult because some older telephone equipment was designed to recognize only area codes with a middle digit of 0 or 1, and the supply of those area codes was dwindling. On January 1, 1995, the restriction on the middle digit was removed, and 640 new area codes were made available. During 1995, fourteen new area codes were assigned -- the largest single-year expansion of area codes in decades. Twenty new area codes were added in 1996, forty-three in 1997, twenty in 1998, and twenty-two codes were added in 1999. At this time, twenty-one codes are scheduled to be added in 2000 and five in 2001. The changes in area codes from 1984 to 2001 are shown in Table 21.1. Area codes are assigned by the North American Numbering Plan Administration (NANPA), which is part of Lockheed Martin IMS.

On May 1, 1993, procedures for routing 800 calls were changed and 800 numbers were made "portable." The new system enables customers to change service providers while still retaining the same 800 number. There has been tremendous growth in the 800 market. The growth of 800 telephone numbers is shown in Table 21.2. In March 1996, a second toll-free calling code -- 888 -- was placed in service. The 888 code assignments are shown in Table 21.3. The third toll-free calling code -- 877 -- went into effect April 4, 1998. The 877 code assignments are shown in Table 21.4. The next two toll-free codes scheduled for service are 866 and 855, scheduled for April 1, and April 8, 2000, respectively. Database Service Management, Inc., a subsidiary of Telcordia Technologies, Inc., maintains the database on toll-free numbers.

TABLE 21.1

AREA CODE ASSIGNMENTS
(1984-2001)

Location	Date	Previous Code	Added Code
California	1/84	213	818
New York	9/84	212	718
Colorado	3/88	303	719
Florida	4/88	305	407
Massachusetts	7/88	617	508
Illinois	11/89	312	708
New Jersey	11/90	201	908
Texas	11/90	214	903
California	9/91	415	510
Maryland	10/91	301	410
California	11/91	213	310
New York	1/92	212	917
New York	1/92	718	917
Georgia	5/92	404	706
New York	7/92	212	718
Texas	11/92	512	210
California	11/92	714	909
Ontario	10/93	416	905
North Carolina	11/93	919	910
Michigan	12/93	313	810
Pennsylvania	1/94	215	610
Alabama	1/95	205	334
Washington	1/95	206	360
Arizona	3/95	602	520
Colorado	4/95	303	970
Florida (Tampa)	5/95	813	941
Virginia	7/95	703	540
Georgia (Atlanta)	8/95	404	770
Connecticut	8/95	203	860
Florida (Miami)	9/95	305	954
Tennessee	9/95	615	423
Bermuda	10/95	809	441
Oregon	11/95	503	541
South Carolina	12/95	803	864
Florida (North)	12/95	904	352
Missouri	1/96	314	573
Illinois (Chicago)	1/96	708	847
Puerto Rico	3/96	809	787
Ohio	3/96	216	330
Minnesota	3/96	612	320
Antigua	4/96	809	268
Florida (Southeast)	5/96	407	561
Barbados	7/96	809	246
St. Lucia	7/96	809	758
Virginia	7/96	804	757

TABLE 21.1

AREA CODE ASSIGNMENTS - CONTINUED
(1984-2001)

Location	Date	Previous Code	Added Code
Montserrat	7/96	809	664
Illinois (Chicago)	8/96	708	630
Cayman Islands	9/96	809	345
Texas (Dallas)	9/96	214	972
Ohio	9/96	513	937
Bahamas	10/96	809	242
St. Kitts & Nevis	10/96	809	869
Illinois	10/96	312	773
British Columbia	10/96	604	250
Texas (Houston)	11/96	713	281
California (Southern)	1/97	310	562
Indiana	2/97	317	765
California	3/97	619	760
Anguilla	3/97	809	264
Arkansas	4/97	501	870
Washington St.	4/97	206	253
Washington St.	4/97	206	425
Jamaica	5/97	809	876
Michigan	5/97	810	248
Texas	5/97	817	254
Texas	5/97	817	940
Turks & Caicos	6/97	809	649
Trinidad/Tobago	6/97	809	868
Maryland	6/97	301	240
Maryland	6/97	410	443
New Jersey	6/97	201	973
New Jersey	6/97	908	732
U.S. Virgin Islands	6/97	809	340
California	6/97	818	626
Florida	6/97	904	850
Guam	7/97	NA	671
Commonwealth of the Northern Mariana Is.	7/97	NA	670
Texas	7/97	210	830
Texas	7/97	210	956
Kansas	7/97	913	785
Wisconsin	7/97	414	920
California	8/97	415	650
Ohio	8/97	216	440
Massachusetts	9/97	617	781
Massachusetts	9/97	508	978
Tennessee	9/97	615	931
Mississippi	9/97	601	228
Utah	9/97	801	435
Dominica	10/97	809	767
British Virgin Islands	10/97	809	284

TABLE 21.1

AREA CODE ASSIGNMENTS - CONTINUED
(1984-2001)

Location	Date	Previous Code	Added Code
Missouri	10/97	816	660
Yukon & NW Terr.	10/97	403	867
Yukon & NW Terr.	10/97	819	867
Grenada	10/97	809	473
California	11/97	916	530
Oklahoma	11/97	405	580
Ohio	12/97	614	740
Michigan	12/97	313	734
North Carolina	12/97	910	336
Georgia (Atlanta)	1/98	770	678
Pennsylvania	2/98	412	724
Florida	3/98	305	786
California	3/98	510	925
South Carolina	3/98	803	843
North Carolina	3/98	704	828
North Carolina	3/98	919	252
Alabama	3/98	205	256
California	4/98	714	949
Colorado	2/98	303	720
St. Vincent & Grenadines	6/98	809	784
Quebec	6/98	514	450
California (Los Angeles)	6/98	213	323
Florida	7/98	813	727
California	7/98	408	831
Minnesota	7/98	612	651
Louisiana	8/98	504	225
California	11/98	209	559
Pennsylvania	12/98	717	570
Nevada	12/98	702	775
Texas (Houston)	1/99	281	832
Texas (Houston)	1/99	713	832
Alberta	1/99	403	780
California	2/99	805	661
Texas	2/99	512	361
Arizona	3/99	602	480
Arizona	3/99	602	623
New York (Manhattan)	7/99	212	646
Kentucky	4/99	502	270
Mississippi	4/99	601	662
Missouri	5/99	314	636
Michigan	6/99	616	231
Pennsylvania	6/99	215	267
Pennsylvania	6/99	610	484
California	6/99	619	858
New Jersey	6/99	609	856

TABLE 21.1

AREA CODE ASSIGNMENTS - CONTINUED
(1984-2001)

Location	Date	Previous Code	Added Code
Texas (Dallas)	7/99	214	469
Texas (Dallas)	7/99	972	469
Wisconsin	9/99	414	262
Florida	9/99	941	863
Louisiana	10/99	318	337
Florida	11/99	407	321
Tennessee	11/99	423	865
New York	11/99	516	631
Oregon	1/00	503	971
California	2/00	909	951
Texas	2/00	409	979
Texas	2/00	409	936
Minnesota	2/00	612	952
Minnesota	2/00	612	763
Virginia	3/00	703	571
Kentucky	4/00	606	859
New York	4/00	718	347
Michigan	5/00	810	586
New York	6/00	914	845
California	6/00	619	935
Washington	8/00	360	564
Georgia	8/00	912	478
Georgia	8/00	912	229
Michigan	8/00	517	989
Ohio	10/00	330	234
California	10/00	760	442
North Carolina	11/00	704	980
Michigan	11/00	734	278
California	12/00	707	369
Connecticut	1/01	860	959
Connecticut	1/01	203	475
Michigan	2/01	248	947
Michigan	2/01	313	679
California	10/01	707	627

Source: North American Numbering Plan Administration (NANPA).

TABLE 21.2

TELEPHONE NUMBERS ASSIGNED FOR 800 SERVICE

Year	Month	Working 800 Numbers	Misc. * 800 Numbers	Total 800 Numbers Assigned	Spare 800 Numbers Still Available
1993	April	2,448,985	642,725	3,091,710	4,618,290
	May	2,511,933	708,192	3,220,125	4,489,875
	June	2,589,123	722,006	3,311,129	4,398,871
	July	2,675,483	705,416	3,380,899	4,329,101
	August	2,738,259	701,009	3,439,268	4,270,732
	September	2,818,262	639,547	3,457,809	4,252,191
	October	2,891,994	660,544	3,552,538	4,157,462
	November	3,083,250	728,514	3,811,764	3,898,236
	December	3,155,955	731,438	3,887,393	3,822,607
1994	January	3,257,540	580,216	3,837,756	3,872,244
	February	3,381,646	731,005	4,112,651	3,597,349
	March	3,516,620	743,813	4,260,433	3,449,567
	April	3,659,129	699,212	4,358,341	3,351,659
	May	3,793,865	738,767	4,532,632	3,177,368
	June	3,933,037	792,698	4,725,735	2,984,265
	July	4,099,174	699,803	4,798,977	2,911,023
	August	4,312,486	807,881	5,120,367	2,589,633
	September	4,506,014	841,381	5,347,395	2,362,605
	October	4,611,014	871,684	5,482,698	2,227,302
	November	4,817,854	875,416	5,693,270	2,016,730
	December	4,948,605	763,235	5,711,840	1,998,160
1995	January	5,096,646	807,294	5,903,940	1,806,060
	February	5,278,800	811,221	6,090,021	1,619,979
	March	5,528,723	793,771	6,322,494	1,387,506
	April	5,741,780	797,902	6,539,682	1,170,318
	May	5,980,848	843,093	6,823,941	886,059
	June	6,340,534	481,633	6,822,167	887,833
	July	6,402,785	443,717	6,846,502	863,498
	August	6,428,120	442,270	6,870,390	839,610
	September	6,503,018	437,215	6,940,233	769,767
	October	6,583,344	396,605	6,979,949	730,051
	November	6,647,880	310,043	6,957,923	752,077
	December	6,700,576	286,487	6,987,063	722,937
1996	January	6,766,607	297,001	7,063,608	646,392
	February	6,861,093	335,557	7,196,650	513,350
	March	6,907,098	293,244	7,200,342	509,658
	April	6,934,085	280,927	7,215,012	494,988
	May	6,943,620	333,140	7,276,760	433,240
	June	6,986,821	324,899	7,311,720	398,280
	July	7,022,309	339,900	7,362,209	347,791
	August	7,074,772	311,273	7,386,045	323,955
	September	7,119,167	310,562	7,429,729	280,271
	October	7,185,135	325,088	7,510,223	199,777
	November	7,242,377	337,502	7,579,879	130,121
	December	7,272,819	343,905	7,616,724	93,276

TABLE 21.2

TELEPHONE NUMBERS ASSIGNED FOR 800 SERVICE- CONTINUED

Year	Month	Working 800 Numbers	Misc. * 800 Numbers	Total 800 Numbers Assigned	Spare 800 Numbers Still Available
1997	January	7,333,632	323,804	7,657,436	52,564
	February	7,388,696	318,571	7,707,267	2,733
	March	7,402,769	305,362	7,708,131	1,869
	April	7,411,118	296,925	7,708,043	1,957
	May	7,411,291	294,320	7,705,611	4,389
	June	7,415,591	293,802	7,709,393	607
	July	7,421,288	283,794	7,705,082	4,918
	August	7,430,733	276,024	7,706,757	3,243
	September	7,427,717	280,668	7,708,385	1,615
	October	7,433,483	276,490	7,709,973	27
	November	7,423,662	276,576	7,700,238	9,762
	December	7,429,160	267,429	7,696,589	13,411
1998	January	7,431,789	264,143	7,695,932	14,068
	February	7,445,338	257,493	7,702,831	7,169
	March	7,455,240	249,964	7,705,204	4,796
	April	7,464,692	232,462	7,697,154	12,846
	May	7,476,270	228,409	7,704,679	5,321
	June	7,480,468	227,041	7,707,509	2,491
	July	7,485,866	221,078	7,706,944	3,056
	August	7,483,417	224,242	7,707,659	2,341
	September	7,489,271	219,080	7,708,351	1,649
	October	7,479,005	229,889	7,708,894	1,106
	November	7,478,913	228,892	7,707,805	2,195
	December	7,487,529	215,267	7,702,796	7,204
1999	January	7,498,435	194,520	7,692,955	17,045
	February	7,504,256	192,068	7,696,324	13,676
	March	7,498,527	204,515	7,703,042	6,958
	April	7,506,452	202,241	7,708,693	1,307
	May	7,504,523	204,751	7,709,274	726
	June	7,502,118	207,061	7,709,179	821
	July	7,512,928	196,345	7,709,273	727
	August	7,514,686	194,434	7,709,120	880
	September	7,523,302	185,363	7,708,665	1,335
	October	7,493,898	215,756	7,709,654	346
	November	7,499,343	210,266	7,709,609	391
	December	7,505,737	202,416	7,708,153	1,847
2000	January	7,486,650	223,367	7,710,017	-
	February	7,490,980	198,506	7,689,486	20,514

* Miscellaneous numbers include those in the 800 service management system maintained by Data Service Management, Inc., and categorized as reserved, assigned but not yet activated, recently disconnected, or suspended.

TABLE 21.3

TELEPHONE NUMBERS ASSIGNED FOR 888 SERVICE

Year	Month	Working 888 Numbers	Misc. * 888 Numbers	Total 888 Numbers Assigned	Spare 888 Numbers Still Available
1996	February	67,399	560,598	627,997	7,352,003
	March	267,874	568,574	836,448	7,143,552
	April	442,005	565,402	1,007,407	6,972,593
	May	707,374	542,428	1,249,802	6,730,198
	June	922,849	544,079	1,466,928	6,513,072
	July	1,157,770	549,845	1,707,615	6,272,385
	August	1,437,660	576,399	2,014,059	5,965,941
	September	1,641,519	590,345	2,231,864	5,748,136
	October	1,886,663	629,365	2,516,028	5,463,972
	November	2,074,600	622,375	2,696,975	5,283,025
	December	2,255,163	601,766	2,856,929	5,123,071
1997	January	2,457,250	591,533	3,048,783	4,931,217
	February	2,654,984	629,997	3,284,981	4,695,019
	March	2,857,608	661,164	3,518,772	4,461,228
	April	3,097,015	646,709	3,743,724	4,236,276
	May	3,399,856	657,615	4,057,471	3,922,529
	June	3,660,984	681,981	4,342,965	3,637,035
	July	3,990,769	696,331	4,687,100	3,292,900
	August	4,345,910	742,755	5,088,665	2,891,335
	September	4,776,688	774,431	5,551,119	2,428,881
	October	5,139,455	726,515	5,865,970	2,114,030
	November	5,353,989	699,223	6,053,212	1,926,788
	December	5,551,554	729,020	6,280,574	1,699,426
1998	January	5,760,023	719,289	6,479,312	1,500,688
	February	5,968,391	723,679	6,692,070	1,287,930
	March	6,167,479	728,415	6,895,894	1,084,106
	April	6,373,603	690,041	7,063,644	916,356
	May	6,493,156	672,776	7,165,932	814,068
	June	6,591,764	665,496	7,257,260	722,740
	July	6,705,902	661,085	7,366,987	613,013
	August	6,790,315	669,486	7,459,801	520,199
	September	6,898,718	612,254	7,510,972	469,028
	October	7,012,860	573,695	7,586,555	393,445
	November	7,054,472	572,759	7,627,231	352,769
	December	7,146,159	515,009	7,661,168	318,832
1999	January	7,196,336	510,057	7,706,393	273,607
	February	7,249,001	493,132	7,742,133	237,867
	March	7,278,531	495,904	7,774,435	205,565
	April	7,324,847	234,588	7,559,435	420,565
	May	7,385,748	216,196	7,601,944	378,056
	June	7,428,424	231,697	7,660,121	319,879
	July	7,487,759	231,884	7,719,643	260,357
	August	7,546,299	233,286	7,779,585	200,415
	September	7,601,867	211,318	7,813,185	166,815
	October	7,542,131	341,720	7,883,851	96,149
	November	7,592,293	342,918	7,935,211	44,789
	December	7,643,158	324,405	7,967,563	12,437
2000	January	7,615,927	363,960	7,979,887	113
	February	7,627,138	247,788	7,874,926	105,074

* Miscellaneous numbers include those in the 800 service management system maintained by Data Service Management, Inc., and categorized as reserved, assigned but not yet activated, recently disconnected, or suspended.

TABLE 21.4

TELEPHONE NUMBERS ASSIGNED FOR 877 SERVICE

Year	Month	Working 877 Numbers	Misc. * 877 Numbers	Total 877 Numbers Assigned	Spare 877 Numbers Still Available
1998	April	168,300	276,169	444,469	7,535,531
	May	354,303	256,712	611,015	7,368,985
	June	552,037	209,967	762,004	7,217,996
	July	759,971	179,830	939,801	7,040,199
	August	918,956	201,087	1,120,043	6,859,957
	September	1,072,046	206,714	1,278,760	6,701,240
	October	1,259,620	277,038	1,536,658	6,443,342
	November	1,386,726	292,264	1,678,990	6,301,010
	December	1,567,195	235,190	1,802,385	6,177,615
1999	January	1,712,675	233,863	1,946,538	6,033,462
	February	1,920,715	299,430	2,220,145	5,759,855
	March	2,141,228	329,044	2,470,272	5,509,728
	April	2,410,517	403,711	2,814,228	5,165,772
	May	2,678,075	407,450	3,085,525	4,894,475
	June	2,899,466	410,026	3,309,492	4,670,508
	July	3,140,981	491,644	3,632,625	4,347,375
	August	3,472,534	456,372	3,928,906	4,051,094
	September	3,755,361	436,433	4,191,794	3,788,206
	October	4,008,681	486,968	4,495,649	3,484,351
	November	4,304,159	505,179	4,809,338	3,170,662
	December	4,528,106	575,143	5,103,249	2,876,751
2000	January	4,882,111	573,482	5,455,593	2,524,407
	February	5,118,387	659,479	5,777,866	2,202,134

* Miscellaneous numbers include those in the 800 service management system maintained by Data Service Management, Inc., and categorized as reserved, assigned but not yet activated, recently disconnected, or suspended.

22 UNIVERSAL SERVICE:

High-cost support enables areas with very high costs to recover some of these costs from the support mechanisms, leaving less costs to be recovered through state rates. In this manner, the high-cost support mechanisms are intended to hold down local rates and thereby further one of the most important goals of federal and state regulation -- the preservation of universal telephone service.

The three high-cost support mechanisms include the universal service fund (USF), long-term support (LTS), and local switching support (LSS). USF provides assistance to companies with above average non-traffic sensitive local loop costs -- a term that refers to the costs of providing the loop connection between the customers and the central office. The second high-cost support mechanism, LTS, is also related to non-traffic-sensitive costs. LTS provides support to members of the NECA common line pool, to allow them to charge a below-cost carrier common line rate that is uniform for all companies in the pool. The third high-cost support mechanism, LSS, is related to traffic sensitive local switching costs. LSS provides support to LECs with study areas of 50,000 or fewer access lines to help defray the higher switching cost of small LECs.

Table 22.1 shows actual USF, LTS and LSS payments from 1986 to 1999. Table 22.2 shows projected USF, LTS, and LSS payments by state for 1999. It should be noted that these projections do not include subsequent quarterly true-ups.

Eligible schools and libraries receive telecommunications services, internet access, and internal connections at discounts that range from 20 percent to 90 percent. The level of the discount is based on eligibility for the national school lunch program, location in a rural area, and the total amount of money requested by all schools and libraries. These schools and libraries are eligible to receive support for services that qualify as telecommunications services, internet access, or internal connections.

The portion of universal service support designated for health care providers is designed to allow rural health care providers to purchase telecommunications services at the same rates that health care providers located in urban areas pay for these services. The Commission's universal service rules permit eligible health care providers to receive support for any telecommunications service and for distance charges for the distance between the rural health care provider and the nearest large city. The Commission defined "nearest large city" as the closest city in the state with a population of at least 50,000. In addition, any health care provider that cannot obtain toll-free Internet access is entitled to receive the lesser of $180 of toll charges per month, or the toll charges incurred for 30 hours per month, for telecommunications access to an Internet service provider.

Table 22.3 shows commitments to schools and libraries, by state and by type of service. Table 22.4 shows commitments to rural health care providers, by state.

Carriers contribute to universal service based on their end-user revenue. Table 22.5 shows interstate and intrastate contribution rates since the first quarter of 1998.

TABLE 22.1

UNIVERSAL SERVICE FUND AND LONG-TERM SUPPORT PAYMENT HISTORY
(In Millions of Dollars)

Year	High-Cost Loop Support		Long-Term Support		Local Switching Support		Total Support	
	Actual Payments	Cumulative Payments	Actual Payments	Cumulative Payments	Actual Payments	Cumulative Payments	Actual Payments	Cumulative Payments
1986	$55.6	$55.6	$0.0	$0.0	$0.0	$0.0	$55.6	$55.6
1987	125.7	181.3	0.0	0.0	0.0	0.0	125.7	181.3
1988	183.3	364.6	0.0	0.0	0.0	0.0	183.3	364.6
1989	264.6	629.1	235.7	235.7	0.0	0.0	500.3	864.8
1990	339.2	968.3	262.6	498.3	0.0	0.0	601.7	1,466.6
1991	484.8	1,453.1	271.7	770.0	0.0	0.0	756.5	2,223.1
1992	609.4	2,062.5	305.7	1,075.7	0.0	0.0	915.1	3,138.2
1993	705.1	2,767.6	322.7	1,398.4	311.0	311.0	1,338.8	4,477.0
1994	725.4	3,493.0	346.6	1,745.0	303.9	614.9	1,376.0	5,853.0
1995	749.5	4,242.6	382.3	2,127.3	325.3	940.2	1,457.1	7,310.1
1996	762.7	5,005.3	425.6	2,552.9	348.0	1,288.2	1,536.3	8,846.4
1997	793.6	5,798.9	469.5	3,022.4	350.6	1,638.8	1,613.7	10,460.1
1998	827.3	6,626.2	472.6	3,495.0	412.6	2,051.4	1,712.5	12,172.6
1999	864.1	7,490.3	473.1	3,968.1	383.1	2,434.5	1,720.3	13,892.9

Source: Industry Analysis Division, *Monitoring Report.*

TABLE 22.2

PROJECTED HIGH-COST SUPPORT PAYMENTS BY STATE: 1999*

(In Thousands of Dollars)

State	High-Cost Loop Support Fund	Long-Term Support	Local Switching Support	Total Support
Alabama	$21,763	$7,261	$8,464	$37,487
Alaska	36,947	16,783	14,703	68,433
Arizona	18,633	3,080	9,826	31,539
Arkansas	51,028	15,238	8,191	74,456
California	30,136	13,137	7,370	50,643
Colorado	28,273	11,987	3,824	44,084
Connecticut	0	161	763	924
Delaware	0	0	0	0
Dist. of Columbia	0	0	0	0
Florida	9,800	5,268	3,635	18,702
Georgia	37,700	17,682	12,319	67,702
Hawaii	360	0	515	876
Idaho	19,706	3,424	6,307	29,437
Illinois	20,580	6,149	11,860	38,589
Indiana	3,191	5,082	7,672	15,946
Iowa	3,715	7,164	13,838	24,717
Kansas	39,363	11,336	13,502	64,201
Kentucky	9,484	4,850	4,944	19,278
Louisiana	40,948	16,560	7,374	64,882
Maine	5,255	5,948	6,612	17,815
Maryland	0	90	445	535
Massachusetts	48	101	376	525
Michigan	16,786	9,722	7,909	34,417
Minnesota	11,760	12,030	17,085	40,875
Mississippi	18,334	5,024	3,381	26,740
Missouri	33,167	10,609	7,513	51,289
Montana	25,146	9,908	8,864	43,919
Nebraska	6,645	3,822	10,225	20,693
Nevada	4,237	907	5,707	10,851
New Hampshire	1,648	1,497	5,044	8,189
New Jersey	0	0	1,365	1,365
New Mexico	20,891	6,098	8,502	35,491
New York	13,228	6,737	18,308	38,274
North Carolina	14,361	11,931	5,618	31,910
North Dakota	5,064	5,922	10,495	21,480
Ohio	5,246	5,161	4,600	15,007
Oklahoma	27,824	16,246	13,226	57,296
Oregon	20,201	9,160	7,238	36,599
Pennsylvania	901	13,994	6,861	21,756
Rhode Island	0	0	0	0
South Carolina	21,094	10,986	10,598	42,679
South Dakota	4,236	4,989	9,096	18,321
Tennessee	10,845	10,288	8,049	29,182
Texas	73,724	29,351	16,482	119,557
Utah	3,936	1,473	5,996	11,406
Vermont	4,275	2,365	5,208	11,848
Virginia	4,688	3,308	4,367	12,363
Washington	23,980	13,134	5,897	43,011
West Virginia	18,515	1,051	3,573	23,139
Wisconsin	14,772	13,294	22,547	50,613
Wyoming	16,166	4,455	4,746	25,368
United States	798,602	374,761	381,040	1,554,403
Guam	426	1,927	0	2,353
N. Mariana Isl.	4,743	0	2,085	6,828
Puerto Rico	44,566	89,254	0	133,819
Virgin Islands	15,872	7,133	0	23,005
Grand Total	$864,208	$473,074	$383,125	$1,720,408

Source: Industry Analysis Division, *State-By-State Telephone Revenue and Universal Service Data.*

* Note that actual support payments are reported in Table 22.1, but are not available at the state level. Projected support payments do not include quarterly true-ups

TABLE 22.3

SCHOOLS AND LIBRARIES FUNDING COMMITMENTS BY STATE
(Funding Period: July 1, 1999 Through June 30, 2000
Funds Committed Through November 1, 1999)

State, District or Territory	Internet Access	Funding Commitments	Telecomm. & Dedicated	Funding Commitments	Internal Connections	Funding Commitments	Total	Total Funding Commitments
Alabama	$2,541,079	123	$5,697,553	347	$15,657,297	157	$23,895,929	627
Alaska	325,355	39	4,898,400	91	1,689,565	43	6,913,320	173
Arizona	975,290	91	4,096,809	186	25,074,205	163	30,146,304	440
Arkansas	2,552,994	24	3,757,776	308	2,842,472	146	9,153,242	478
California	5,100,376	319	39,257,888	992	143,552,809	1,088	187,911,073	2,399
Colorado	548,456	116	5,620,452	253	3,301,061	111	9,469,968	480
Connecticut	1,215,465	92	4,275,307	191	22,679,254	129	28,170,026	412
Delaware	39,655	7	1,269,009	76	32,652	7	1,341,316	90
District of Columbia	4,627	3	219,318	27	221,866	11	445,812	41
Florida	5,183,713	96	24,908,847	335	34,646,070	382	64,738,630	813
Georgia	3,658,673	92	13,919,275	244	39,373,641	247	56,951,589	583
Hawaii	202,926	7	1,498,309	350	3,427,964	195	5,129,199	552
Idaho	319,360	70	1,686,401	134	2,183,117	68	4,188,878	272
Illinois	2,113,419	332	20,638,361	937	126,600,135	525	149,351,915	1,794
Indiana	849,738	82	6,253,330	534	3,891,735	182	10,994,803	798
Iowa	863,895	300	3,204,767	624	2,242,992	194	6,311,653	1,118
Kansas	1,137,056	225	3,041,507	345	2,309,365	128	6,487,927	698
Kentucky	1,308,896	90	9,841,175	297	30,839,721	201	41,989,793	588
Louisiana	4,783,361	161	8,587,433	385	19,782,244	243	33,153,037	789
Maine	245,914	20	1,929,335	241	1,328,830	131	3,504,079	392
Maryland	611,440	53	10,230,079	172	8,855,598	78	19,697,116	303
Massachusetts	1,338,910	212	11,588,806	458	19,002,865	144	31,930,581	814
Michigan	5,062,422	332	21,415,108	964	48,166,862	609	74,644,392	1,905
Minnesota	1,034,738	104	10,659,308	344	12,656,948	149	24,350,994	597
Mississippi	1,890,010	124	11,457,089	336	15,731,828	250	29,078,927	710
Missouri	9,070,217	84	6,437,165	420	6,731,701	215	22,239,083	719
Montana	548,660	189	1,772,153	271	1,363,847	105	3,684,660	565
Nebraska	428,247	144	4,381,909	474	785,167	58	5,595,323	676
Nevada	87,282	12	1,581,188	41	122,812	4	1,791,281	57
New Hampshire	182,064	58	743,477	144	93,605	14	1,019,145	216
New Jersey	1,503,459	253	13,163,450	573	16,599,178	177	31,266,087	1,003
New Mexico	618,955	59	2,303,632	87	8,031,481	83	10,954,068	229
New York	21,020,130	463	72,573,989	1,495	118,431,582	516	212,025,700	2,474
North Carolina	3,602,303	149	13,649,337	286	16,915,691	193	34,167,331	628
North Dakota	163,457	53	966,081	142	567,145	62	1,696,682	257
Ohio	4,623,627	119	15,864,570	788	19,841,085	231	40,329,282	1,138
Oklahoma	2,466,654	274	6,600,626	478	17,333,022	365	26,400,303	1,117
Oregon	588,700	74	5,725,457	295	2,954,646	162	9,268,803	531
Pennsylvania	2,883,992	391	16,960,643	1,164	27,318,152	239	47,162,787	1,794
Rhode Island	387,045	30	3,378,823	101	3,523,617	34	7,289,484	165
South Carolina	187,023	9	11,464,999	160	17,683,799	236	29,335,821	405
South Dakota	454,385	101	867,175	137	492,179	58	1,813,739	296
Tennessee	19,246,314	150	10,078,304	298	30,258,003	126	59,582,621	574
Texas	4,449,833	424	34,655,021	842	76,440,437	509	115,545,292	1,775
Utah	1,956,462	41	2,675,238	94	473,346	12	5,105,046	147
Vermont	231,902	67	917,629	187	172,530	47	1,322,061	301
Virginia	1,546,635	110	12,442,817	316	9,212,252	148	23,201,704	574
Washington	623,123	84	9,948,106	373	18,613,338	326	29,184,567	783
West Virginia	2,297,803	173	2,570,387	456	4,755,444	139	9,623,633	768
Wisconsin	2,944,830	312	8,410,242	532	7,660,721	175	19,015,793	1,019
Wyoming	178,913	31	1,846,714	106	1,587,409	41	3,613,036	178
United States	126,199,780	6,968	491,930,775	19,431	994,053,281	9,856	1,612,183,836	36,255
American Somoa	1,046,886	1	477,318	1	1,179,617	1	2,703,821	3
Northern Marianas Is.	9,757	1	85,643	2	0	0	95,401	3
Puerto Rico	3,973,265	1	14,566,208	1	38,822,018	1	57,361,491	3
Grand Total	$131,229,689	6,971	$507,059,945	19,435	$1,034,054,915	9,858	$1,672,344,549	36,264

Source: Universal Service Administrative Company data.

TABLE 22.4

RURAL HEALTH CARE FUNDING COMMITMENTS BY STATE
(Funding Period: January 1, 1998 Through June 30, 1999
Funds Committed Through November 12, 1999)

State	Funding Commitment Amount	Health Care Providers
Alabama	$9,199	1
Alaska	34,054	1
Arizona	36,627	6
Arkansas	9,217	7
California	9,982	4
Colorado	59,471	8
Connecticut	0	0
Delaware	0	0
District of Columbia	0	0
Florida	0	0
Georgia	0	0
Hawaii	91,612	8
Idaho	5,278	1
Illinois	13,712	3
Indiana	0	0
Iowa	26,604	18
Kansas	37,641	16
Kentucky	0	0
Louisiana	0	0
Maine	2,494	2
Maryland	0	0
Massachusetts	0	0
Michigan	15,801	6
Minnesota	113,793	21
Mississippi	40,200	8
Missouri	45,890	5
Montana	113,115	19
Nebraska	11,688	9
Nevada	58,236	6
New Hampshire	10,444	5
New Jersey	0	0
New Mexico	43,034	5
New York	124,386	12
North Carolina	29,679	6
North Dakota	158,054	12
Ohio	28,866	4
Oklahoma	20,537	3
Oregon	6,346	3
Pennsylvania	0	0
Rhode Island	0	0
South Carolina	0	0
South Dakota	16,483	6
Tennessee	9,991	3
Texas	12,279	13
Utah	29,535	1
Vermont	3,790	3
Virginia	38,748	3
Washington	11,556	11
West Virginia	1,808	4
Wisconsin	0	0
Wyoming	1,023	1
Total	$1,281,175	244

Source: Universal Service Administrative Company data.

TABLE 22.5

UNIVERSAL SERVICE FUND FACTORS

Year Period	Factor for Interstate End-User Revenue: High-Cost & Low-Income Support	Factor for Interstate End-User Revenue: Schools, Libraries, & Rural Health Support	Factor for Interstate End-User Revenue: All Support	Factor for Intrastate End-User Revenue: High-Cost & Low-Income Support	Factor for Intrastate End-User Revenue: Schools, Libraries, & Rural Health Support	Factor for Intrastate End-User Revenue: All Support
1998 First Quarter	3.19%	0.72%	3.91%	0.00%	0.72%	0.72%
Second Quarter	3.14	0.76	3.90	0.00	0.76	0.76
Third Quarter	3.14	0.75	3.89	0.00	0.75	0.75
Fourth Quarter	3.18	0.75	3.93	0.00	0.75	0.75
1999 First Quarter	3.18	0.58	3.76	0.00	0.58	0.58
Second Quarter	3.05	0.57	3.62	0.00	0.57	0.57
Third Quarter	2.94	0.99	3.93	0.00	0.99	0.99
Fourth Quarter	2.89	1.10	3.99	0.00	1.10	1.10
2000 First Quarter	3.27	2.61	5.88	0.00	0.00	0.00

CHART 22.1
INTERSTATE UNIVERSAL SERVICE FUND FACTORS

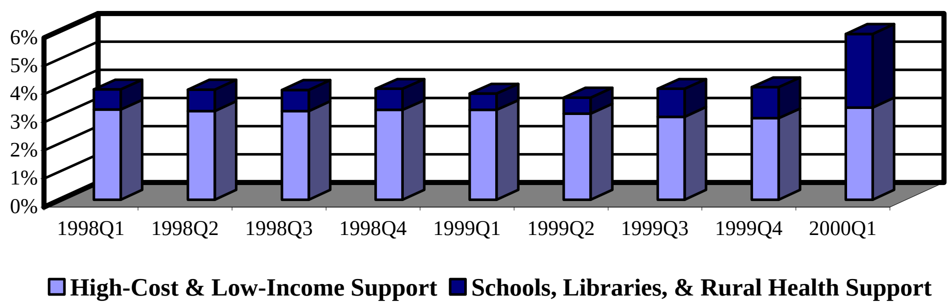
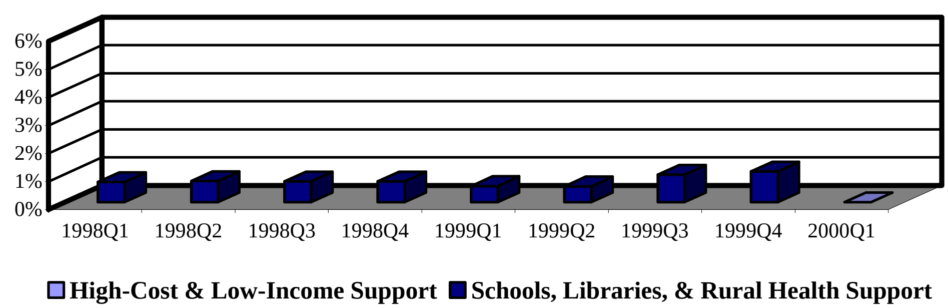


CHART 22.2
INTRASTATE UNIVERSAL SERVICE FUND FACTORS



Source: Industry Analysis Division, *Monitoring Report* and Proposed First Quarter 2000 Universal Service Contribution Factor, CC Docket No. 96-45, Public Notice, DA 99-2780.

23 APPENDIX A - SOURCES OF TELECOMMUNICATIONS INFORMATION

The information in this report and, in many cases, more detailed information can be downloaded from the **FCC-State Link** internet site at <http://www.fcc.gov/ccb/stats>.

Printed copies of statistical reports are available for reference in the FCC's Reference Information Center, Courtyard Level, 445 12th Street, S.W., and from the Commission's duplicating contractor, International Transcription Services, Inc. (ITS), 202-857-3800.

Additional information on regulated carriers, including investments, revenues, expenses, and earnings, is contained in the annual *Statistics of Communications Common Carriers*. The 1998/1999 edition can be purchased from the U.S. Government Printing Office (202-512-1800) and can be found on the **FCC-State Link**.

Filings with the Securities and Exchange Commission, such as the annual reports on Form 10-K, can be downloaded from the Edgar internet site at <http://www.sec.gov>.

The names, addresses and telephone numbers for companies in the telephone industry are published in the Industry Analysis Division's *Carrier Locator*, which can also be downloaded from the **FCC-State Link**.

The information on cellular telephone service shown in Tables 2.1 and 2.2 was prepared from data received from the Cellular Telecommunications Industry Association (CTIA), 1133 21st Street N.W., Washington, D.C. 20036, 202-785-0081. CTIA can be found on the internet at <http://www.wow-com.com>.

The information on consumer expenditures (Table 4.1), employment (Tables 5.1 and 5.2), and price indices (Tables 13.1 - 13.3) comes from the Bureau of Labor Statistics and can be found on the internet at <http://stats.bls.gov/blshome.htm>.

FCC rules require carriers to provide more detailed traffic data about international telephone service than about domestic service. Because of delays in international settlements, such information is typically received by the Commission much later than domestic data and is usually published separately. Tables 7.1 - 7.5 contain summary information on international telephone service. More detailed international data are available from *International Telecommunications Data* and *Trends in the International Telecommunications Industry*, both of which are published by the Industry Analysis Division and can also be found on the **FCC-State Link**.

Table 10.1, on carrier identification codes, and Table 21.1, on area codes, come from the North American Numbering Plan Administration (NANPA), which is part of Neustar, Inc. Additional information on NANPA can be found on the internet at <http://www.nanpa.com>.

Table 14.3 shows average monthly local rates of RUS Borrowers. Further information on rural telephone companies can be obtained from the Rural Utilities Service, U.S. Department of Agriculture. This agency can be found on the internet at <http://www.usda.gov/rus>.

PNR and Associates, Inc. (PNR) has donated databases containing information on residential phone usage to the Commission. PNR has granted the Commission permission to use these databases for research purposes and to publish the results. The 1995 survey is known as *Bill Harvesting II* and the 1996 survey, *Bill Harvesting III*. The expanded 1997 survey, which contains over twice as many observations, was conducted by both PNR and Associates, Inc. and by Market Facts, Inc. and is known as *TLC MarketShare Monitor*. Tables 11.5, 11.6, and 16.1 - 16.6 come from these databases. For additional information, PNR and Associates, Inc. can be contacted by phone at (215) 886-9200, and by e-mail at info@pnr.com. Their address is 101 Greenwood Avenue, Suite 502, Jenkinstown, PA 19046.

Tables 18.1-18.3 contain information from the ARMIS 4307 reports for the BOCs. Individual carrier information can be obtained from the ARMIS web page at <http://www.fcc.gov/ccb/ARMIS/db/>.

Chart 18.1 shows the number of patents granted for telecommunications. Additional information on U.S. patents can be found on the internet at <http://www.uspto.gov>.

Copies of NTIA's report *Falling Through the Net: Defining the Digital Divide* can be obtained through NTIA's web site at <http://www.ntia.doc.gov> contacting NTIA's Office of Public Affairs at (202) 482-7002.

The United States Telecom Association (USTA) (1401 H Street N.W., Washington D.C. 20005, 202-326-7300) represents most local telephone companies. Like many trade associations, it collects information from each of its members. Annually, it publishes and sells statistical publications such as *Statistics of the Local Exchange Carriers*. USTA can be found on the internet at <http://www.usta.org>.

Additional information on broadband capabilities of the small local telephone companies can be found in the publication, *Keeping America Connected: The Broadband Challenge*, published by the National Exchange Carrier Association (NECA). NECA (80 South Jefferson Road, Whippany NJ 07981-1009, 800-228-8597) can be found on the internet at <http://www.neca.org>.

24 APPENDIX B - CONTACTING THE REPORT AUTHORS

Trends in Telephone Service was prepared by the Industry Analysis Division, Common Carrier Bureau, Federal Communications Commission. Principal authors of the report can be contacted at their electronic mail addresses or by calling the Industry Analysis Division at 202-418-0940. Users of TTY equipment should call 202-418-0484.

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