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FCC RELEASES STUDY ON TELEPHONE TRENDS

The FCC has released *Trends in Telephone Service*. This report is designed 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. Highlights from the sections in the report on local competition, telephone rates, subscribership, international calling and toll free numbers are shown below:

The report shows incumbent local exchange carriers (ILECs) claimed 96% of local service revenue in 1998, down from 98% in 1997. CAPs/CLECs reported $2.4 billion of local service in 1998, up from $80 million in 1993. Local service competitors are deploying fiber in their networks at a faster rate than are ILECS; they increased their amount of fiber in place almost five-fold from the end of 1995 to the end of 1998.

Local phone rates have remained steady as seen in the report. The average monthly local residential charge for service was $19.85 in October 1998 as compared to $19.24 in 1990; for a business with a single phone line, the representative charge for service was $41.28 in October 1998 as compared to $41.21 in 1990.

Twenty million households have been added to the nation's telephone system since November 1983. As of March 1999, 98.5 million households had telephone service.

The number of calls made from the United States to other countries increased from 200 million in 1980 to 4.2 billion in 1997. In 1997, Americans spent about $15 billion on international calls. On average, carriers billed $0.67 per minute for international calls in 1997, a decline of 50% since 1980.

There are currently three toll free prefixes in use - 800, 888, 877 - with almost 20 million toll free numbers assigned as of the end of August 1999. Two new codes - 866 and 855 - are expected to be placed in service in early 2000.

This report is available for reference in the FCC's Reference Information Center, Courtyard Level, 445 12th, S.W. Copies may be purchased by calling International Transcription Services, Inc. (ITS) at (202) 857-3800. The report can be downloaded [file names: TREND299.ZIP, TREND299.PDF] from the **FCC-State Link** internet site at http://www.fcc.gov/ccb/stats on the World Wide Web.

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For further information, contact the Industry Analysis Division, Common Carrier Bureau, at (202) 418-0940, or for users of TTY equipment, call 202-418-0484.

TRENDS IN TELEPHONE SERVICE

Industry Analysis Division
Common Carrier Bureau
Federal Communications Commission
September 1999

This report is available for reference in the FCC's Reference Information Center, Courtyard Level, 445 12th Street, S.W. Copies may be purchased by calling International Transcription Services, Inc. (ITS) at (202) 857-3800. The report can be downloaded [file names TREND299.ZIP, TREND299.PDF] from the **FCC-State Link** internet site at http://www.fcc.gov/ccb/stats on the World Wide Web.

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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 on the World Wide Web. In addition, to facilitate further information gathering by consumers and others, we have listed additional sources of information in the appendix.

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.

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[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

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

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 07/01/99 To 12/31/99							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
Ameritech	$3.50	$5.42	$5.41	$1.04	$1.50	$1.78	$0.24	11,624	1,743	4,379	2,600
Bell Atlantic	3.50	5.99	7.10	1.04	2.53	4.28	0.56	22,742	4,100	7,888	4,175
BellSouth	3.50	6.07	7.90	1.04	2.53	4.31	0.47	14,567	2,179	5,248	1,396
Pacific Telesis	3.50	5.27	5.29	1.01	0.03	0.04	0.01	8,692	2,708	4,639	1,837
SBC	3.50	6.07	7.34	1.04	0.57	0.57	0.07	9,115	1,801	3,891	677
U S WEST	3.50	6.07	7.86	1.04	2.53	4.20	0.64	10,232	1,539	4,014	888
RBOCs	3.50	5.81	6.78	1.04	1.67	2.77	0.37	76,972	14,071	30,059	11,573
Aliant	3.50	6.07	6.77	1.04	1.13	1.13	0.35	182	16	47	30
Cincinnati Bell	3.50	6.07	6.30	1.04	2.09	2.09	0.23	645	79	213	72
Citizens	3.50	5.99	9.09	1.04	2.37	4.20	1.05	709	41	121	53
Frontier	3.50	5.57	5.88	1.04	1.52	1.95	0.31	648	70	171	81
GTE	3.50	6.07	8.62	1.04	2.53	4.31	0.82	12,294	1,415	3,219	1,207
SNET	3.50	6.07	8.02	1.04	2.38	2.38	0.51	1,421	134	198	379
Sprint Local	3.50	5.84	7.42	1.01	2.05	3.78	0.52	5,018	618	1,238	451
Independent Price Caps	3.50	6.00	8.09	1.03	2.34	3.91	0.67	20,918	2,373	5,206	2,273
All Price Caps	3.50	5.84	6.98	1.04	1.77	2.94	0.42	97,890	16,444	35,265	13,846
NECA	3.50	N/A	5.95	0.00	N/A	0.00	N/A	9,287	N/A	2,104	N/A
All Price Caps And NECA	$3.50	$5.84	$6.94	$0.95	$1.77	$2.78	$0.42	107,177	16,444	37,369	13,846

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.

TABLE 1.4

INTERSTATE PER-MINUTE ACCESS CHARGES BY CARRIER
(IN CENTS PER MINUTE) *

Company	Rates Effective From 07/01/99 To 12/31/99					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**	Total Charge per Conversation Minute***	CCL Originating	CCL Terminating	Local Switching
Ameritech	0.00 ¢	0.00 ¢	0.74 ¢	0.26 ¢	2.05 ¢	19,937	33,535	54,461
Bell Atlantic	0.00	0.00	0.73	0.22	1.95	42,099	88,757	131,834
BellSouth	0.37	0.00	0.71	0.32	2.50	29,093	48,484	78,056
Pacific Telesis	0.00	0.00	0.64	0.55	2.42	14,055	28,845	42,900
SBC	0.00	0.00	0.83	0.28	2.28	15,419	28,608	44,438
U S WEST	0.00	0.00	0.72	0.24	1.97	20,659	38,380	59,227
RBOCs	0.08	0.00	0.73	0.29	2.16	141,261	266,608	410,916
Aliant	0.00	0.00	1.34	0.32	3.41	248	512	764
Cincinnati Bell	0.00	0.00	0.70	0.17	1.79	1,077	2,031	3,110
Citizens	2.43	0.74	1.67	0.86	8.52	1,252	1,318	2,572
Frontier	1.04	0.01	1.11	0.46	4.34	757	1,723	2,483
GTE	1.86	0.34	0.91	0.24	4.70	18,636	31,256	51,990
SNET	0.00	0.00	1.17	0.29	3.00	3,323	5,259	8,624
Sprint Local	0.83	0.08	1.01	0.21	3.48	8,444	13,871	22,420
Independent Price Caps	1.35	0.23	0.98	0.26	4.22	33,737	55,970	91,963
All Price Caps	0.32	0.04	0.77	0.28	2.55	174,998	322,578	502,879
NECA	1.00	1.33	3.66	0.17	10.31	12,885	14,715	14,782
All Price Caps And NECA	0.37	0.10	0.86	0.28	2.82	187,883	337,293	517,661

Source: Access tariff filings. Minutes of use for Pacific Telesis are from ARMIS 43-01.

* 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.

CELLULAR TELEPHONE SERVICE:

The Federal Communications Commission licenses cellular telephone companies but does not impose reporting requirements on the cellular 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 on the World Wide Web.

The cellular industry has grown dramatically. Table 2.1 shows that there were 92,000 subscribers in 1984, as compared with almost 70 million as of December 1998. 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 over 134,000 employees as of December 1998, as compared to about 1,000 in 1984, and that there was a significant drop in the average monthly bill from $96.83 at the end of 1987 to $39.43 as of December 1998.

The Bureau of Labor Statistics recently created a Consumer Price Index for cellular telephone service. Beginning in December 1997 with an index value of 100, the index had dropped to 82.9 by July 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

Source: Cellular Telecommunications Industry Association.

TABLE 2.2

CELLULAR TELEPHONE SERVICE: 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

Source: Cellular Telecommunications Industry Association.

COMPLAINTS:

Although American consumers make approximately 100 billion toll calls every year, the FCC receives less than one telephone-related complaint for every two million toll calls made. In an effort to help consumers make informed decisions when choosing telephone companies, the FCC's Enforcement Division recently released *The FCC Telephone Consumer Complaint Scorecard*. The Scorecard lists the companies that are served many complaints and the number of complaints 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 with 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 1998, the FCC's Consumer Protection Branch processed over 20,000 written complaints. Table 3.1 summarizes the types of complaints filed.

Consumers are "slammed" when their local or long distance telephone company is changed without their consent. Table 3.2 includes data for the companies served more than 40 slamming complaints during the first half of 1998. A slamming complaint index was calculated for each long distance company by taking the number of slamming complaints served on that company, and dividing by half of that company's prior year's revenue. This generates an annualized slamming complaint index for each company. The table also lists the billing agents served more than 40 slamming complaints during the first half of 1998.

Local telephone companies often bill for services, such as long distance calls, that they did not provide themselves. Many consumers find this very convenient. Many local telephone companies also bill for enhanced services, such as voice mail, which are provided by other firms. Some companies have begun abusing this billing process by submitting bills for services that were not ordered by the consumer, or were not actually provided by the company. When this happens, the consumer's phone bill has been "crammed." Cramming has recently become the reason for many complaints. Table 3.3 lists the companies served 20 or more cramming complaints during the first half of 1998.

TABLE 3.1

WRITTEN COMPLAINTS PROCESSED JANUARY 1, 1998 THROUGH JUNE 30, 1998

Topic	Complaints	Percent
Slamming	9,597	47%
Rates & Services	2,461	12%
Cramming	2,302	11%
Carrier Marketing	1,102	5%
Information Services	810	4%
International Rates	753	4%
Operator Service Providers	659	3%
Referrals	646	3%
Violations of the Telephone Consumer Protection Act	475	2%
Other	1,624	8%
Total	20,429	100%

Source: *The FCC Telephone Consumer Complaint Scorecard.*

TABLE 3.2

COMPANIES SERVED 40 OR MORE SLAMMING COMPLAINTS
(JANUARY 1, 1998 - JUNE 30, 1998)

Company	Number of complaints	Complaints per million dollars	Notes
Long distance carriers			
Business Discount Plan	1,569	1,569.0	1
Minimum Rate Pricing	404	404.0	1
American Business Alliance	222	222.0	1
Amer-I-Net Services	190	190.0	1
Vista Group International	214	171.2	2
Least Cost Routing (CA)	171	171.0	1
LDC Telecommunications	161	161.0	2
Brittan Communications	151	151.0	2
Basic Long Distance	133	133.0	1
Telec, Inc.	133	133.0	1
ACI Communications, Inc.	127	127.0	1
All American Telephone	120	120.0	1
L.D. Services, Inc.	97	97.0	1
Long Distance Direct, Inc.	96	96.0	1
Corporate Services	103	82.4	2
America's Tele-Network	79	79.0	1
One Step Billing, Inc.	74	74.0	1
Accutel Communications	71	71.0	1
Discount Network Services	55	55.0	2
Least Cost Routing (FL)	67	53.6	2
Pantel Communications	53	53.0	1
Group Long Distance, Inc.	186	49.6	2
American Nortel Communications	46	46.0	1
Local Long Distance	44	44.0	1
Axces Telecommunications	161	18.4	2
US Republic Communications	80	9.1	1
QAI, Inc.	51	5.8	2
Atlas Communications	43	4.9	2
The Furst Group	103	2.5	2
North American Telephone	40	2.1	2
US Long Distance, Inc.	101	0.8	3
LCI International	210	0.4	3
Frontier Communications Services, Inc.	109	0.2	3
Excel Communications	96	0.2	3
Sprint Communications	595	0.1	3
MCI WorldCom	1,055	0.1	3
AT&T Corp.	1,216	0.1	3
Billing agents			
Billing Concepts	1,652		4
OAN Services, Inc.	772		4
Hold Billing Service	364		4
Integretel, Inc.	339		4

Source: *The FCC Telephone Consumer Complaint Scorecard.*

Notes:

1 This carrier did not submit the Universal Service Fund Worksheet to NECA by July 1, 1998. Carriers with more than $2 million of annual revenue must file with NECA. In calculating the complaint index, we used the $2 million minimum threshold as the annual revenue estimate, adjusted to $1 million to reflect the six-month reporting period.

2 This carrier submitted confidential revenue data in its Universal Service Fund Worksheet filed with NECA. To preserve the confidentiality of this information, we placed the companies into five revenue categories. In order to calculate the complaint index, we used half of the midpoint of the revenue range, to account for the six-month reporting period. The ranges are $112 -$50 million; $50-$25 million; $25-$10 million; $10-$5 million; under $5 million.

3 Publicly available revenue figures were available for this company.

4 Billing agents are not required to file USF forms.

TABLE 3.3

COMPANIES SERVED 20 OR MORE CRAMMING COMPLAINTS
(JANUARY 1, 1998 - JUNE 30, 1998)

Company	Complaints
Billing agents	
USP&C	523
Integretel, Inc.	450
Hold Billing Service	404
International Telemedia	374
Billing Concepts	276
OAN Services, Inc.	50
Local telephone companies	
Bell Atlantic	564
GTE Service Corporation	385
SBC	380
Ameritech	219
BellSouth Corporation	157
US West Communication	157
Sprint/United	30
Other companies	
Pantel Communication	169
New World Telecom	118
Veteran's of America	116
Coral Communications	100
Enhanced Phone Service	89
Capital Gains, Inc.	84
Direct American IV	72
Viatech (RCP Comm)	71
Vision Telemedia, Inc	69
Consumer Access	64
ASP Telecom, Inc.	54
Payless Communication	38
QE Teleconnect	37
Telmatch Telecommunication	37
America's Tele-Network	36
Online Consulting Group	34
Auto Advantage Plus	26
US Telephone	24
Innovate Telecom, Inc.	23
Traceform Eastern	22
Telco Comm	22
Minimum Rate Pricing	22
BLJ Communications	21
Traveler's Advantage	20

Source: *The FCC Telephone Consumer Complaint Scorecard.*

CONSUMER EXPENDITURES:

The Bureau of Labor Statistics conducts surveys of consumer expenditures, in part, to develop weights for CPI indexes. 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 $809 in 1997.

The information on average telephone expenditures can be used to estimate the average monthly bills for households with telephone service. This average was about $67 per month for 1997. Monthly bills have increased significantly since 1980, due partly to higher local rates, but primarily to more long distance calling. Residential toll calling grew by about 10% a year between 1985 and 1989 -- a period when toll rates declined dramatically. The average American household now spends more on long distance service than on basic local service, reflecting the growth in long distance calling since the AT&T divestiture in 1984.

TABLE 4.1

TELEPHONE SERVICE EXPENDITURES

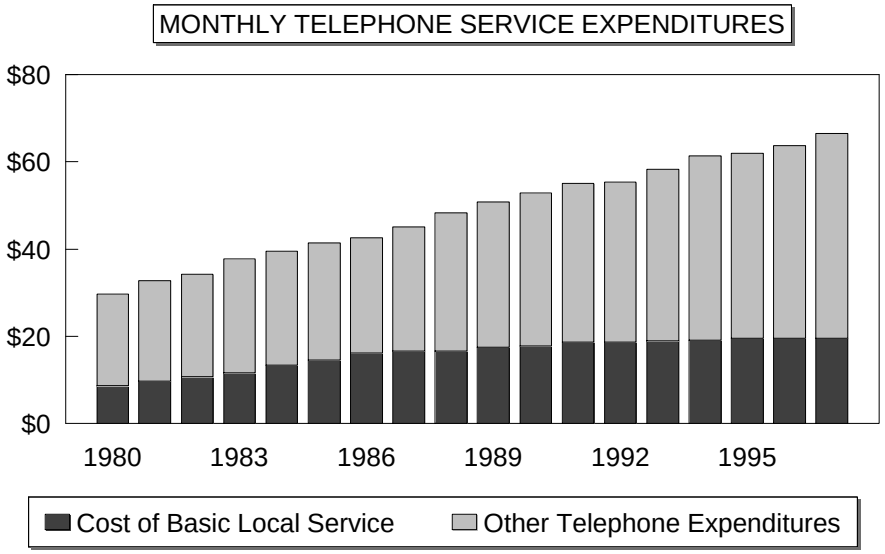
Year	Annual Expenditures (Average for All Households)		Monthly Expenditures (Households with Telephone Service)		
	Telephone Expenditures	Percentage of Total Expenditures	Basic Local Service Charge *	Toll and Other Telephone Expenditures **	Total Telephone Expenditures
1980	$325	1.9 %	$8.74	$21	$30
1981	360	2.1	9.71	23	33
1982	375	2.1	10.75	23	34
1983	415	2.1	11.58	26	38
1984	435	2.0	13.35	26	40
1985	455	1.9	14.54	27	41
1986	471	2.0	16.13	26	43
1987	499	2.0	16.66	28	45
1988	537	2.1	16.57	32	48
1989	567	2.0	17.53	33	51
1990	592	2.1	17.79	35	53
1991	618	2.1	18.66	36	55
1992	623	2.1	18.70	37	55
1993	658	2.1	18.94	39	58
1994	690	2.2	19.07	42	61
1995	708	2.2	19.49	42	62
1996	772	2.3	19.63	44	64
1997	809	2.3	19.52	47	67

Source: Bureau of Labor Statistics.

* Monthly service charges for unlimited local service, taxes, and subscriber line charges.

** Calculated as total monthly bill minus the cost of basic local service. Figures may not add due to rounding. The toll and other category is primarily toll, but also includes charges for equipment, additional access lines, connection, touch-tone, call waiting, 900 service, directory listings, etc.

CHART 4.1



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

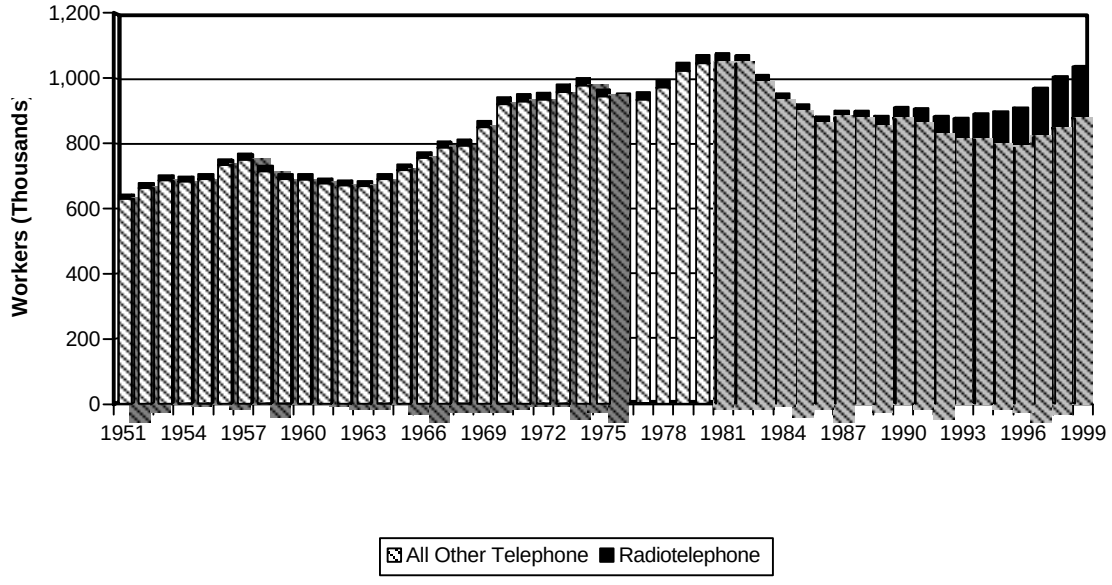
(IN THOUSANDS)

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 **	160.6	877.8
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 based on preliminary figures covering January through July 1999.

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



Source: Bureau of Labor Statistics.

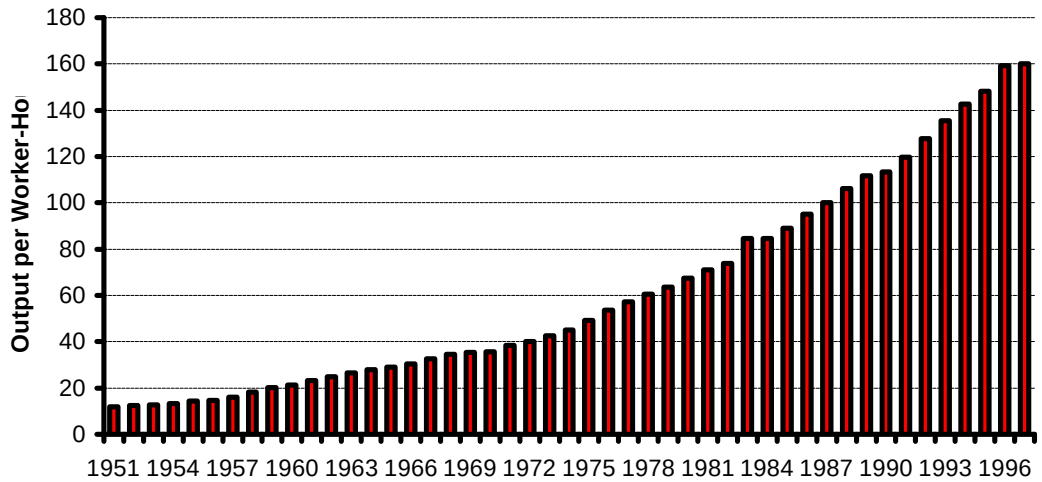
TABLE 5.2

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.

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. 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 August 1, 1999. 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 August 1, 1999)

	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	149	0	100.0 %	213	5	97.7 %	367	98.6 %
Alaska	0	0	N.A.	40	215	15.7	255	15.7
Arizona	161	0	100.0	99	10	90.8	270	96.3
Arkansas	145	0	100.0	260	16	94.2	421	96.2
California	706	0	100.0	394	11	97.3	1,111	99.0
Colorado	190	1	99.5	109	11	90.8	311	96.1
Connecticut	1	0	100.0	148	0	100.0	149	100.0
Delaware	33	0	100.0	2	0	100.0	35	100.0
District of Columbia	33	0	100.0	3	0	100.0	36	100.0
Florida	214	0	100.0	288	2	99.3	504	99.6
Georgia	252	0	100.0	244	10	96.1	506	98.0
Guam	0	0	N.A.	17	0	100.0	17	100.0
Hawaii	0	0	N.A.	105	0	100.0	105	100.0
Idaho	83	0	100.0	105	15	87.5	203	92.6
Illinois	265	54	83.1	729	15	98.0	1,063	93.5
Indiana	168	5	97.1	419	2	99.5	594	98.8
Iowa	152	0	100.0	679	5	99.3	836	99.4
Kansas	186	0	100.0	399	8	98.0	593	98.7
Kentucky	180	0	100.0	201	18	91.8	399	95.5
Louisiana	234	0	100.0	95	9	91.3	338	97.3
Maine	144	1	99.3	114	9	92.7	268	96.3
Maryland	220	0	100.0	5	0	100.0	225	100.0
Massachusetts	282	2	99.3	8	0	100.0	292	99.3
Michigan	331	30	91.7	361	15	96.0	737	93.9
Minnesota	196	0	100.0	559	4	99.3	759	99.5
Mississippi	208	0	100.0	52	11	82.5	271	95.9
Missouri	268	0	100.0	445	50	89.9	763	93.4
Montana	81	0	100.0	164	41	80.0	286	85.7
Nebraska	78	0	100.0	396	4	99.0	478	99.2
Nevada	48	3	94.1	58	21	73.4	130	81.5
New Hampshire	126	1	99.2	31	1	96.9	159	98.7
New Jersey	213	0	100.0	31	2	93.9	246	99.2
New Mexico	71	0	100.0	84	39	68.3	194	79.9
New York	586	1	99.8	313	16	95.1	916	98.1
North Carolina	144	0	100.0	364	12	96.8	520	97.7
North Dakota	46	0	100.0	220	35	86.3	301	88.4
Ohio	239	17	93.4	585	24	96.1	865	95.3
Oklahoma	237	0	100.0	283	36	88.7	556	93.5
Oregon	99	0	100.0	218	5	97.8	322	98.4
Pennsylvania	401	0	100.0	425	33	92.8	859	96.2
Puerto Rico	0	0	N.A.	91	0	100.0	91	100.0
Rhode Island	30	0	100.0	1	0	100.0	31	100.0
South Carolina	119	0	100.0	162	2	98.8	283	99.3
South Dakota	50	0	100.0	202	9	95.7	261	96.6
Tennessee	202	0	100.0	162	9	94.7	373	97.6
Texas	667	1	99.9	982	16	98.4	1,666	99.0
Utah	86	0	100.0	71	18	79.8	175	89.7
Vermont	92	2	97.9	44	0	100.0	138	98.6
Virgin Islands	0	0	N.A.	6	0	100.0	6	100.0
Virginia	233	0	100.0	244	7	97.2	484	98.6
Washington	147	0	100.0	260	8	97.0	415	98.1
West Virginia	146	0	100.0	80	9	89.9	235	96.2
Wisconsin	116	1	99.1	531	0	100.0	648	99.8
Wyoming	29	0	100.0	36	23	61.0	88	73.9
Total United States	9,087	119	98.7 %	12,137	811	93.7 %	22,154	95.8 %

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.

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 4.2 billion in 1997. In 1997, Americans spent about $15 billion on international calls. On average, carriers billed $0.67 per minute for international calls in 1997, a decline of 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 $5.4 billion in 1997. 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 44% 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-four carriers provided international telecommunications service in 1997 by using their own facilities or lines leased from other carriers. These carriers billed $16 billion for international services, of which $15 billion was for telephone service. Table 7.4 shows the U.S.-billed revenues for each of the 54 carriers. Together, AT&T, MCI WorldCom, and Sprint account for 95% of the facilities-based international service billed in the United States.

In addition to the 54 carriers that owned or leased facilities, about 300 carriers reported the resale of international message telephone service. These carriers reported $4.1 billion of resale revenue in 1997. 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 1998 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

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)

							Average per Minute		
	Billed Revenue	Owed to Foreign Carriers	Retained Revenue	Due from Foreign Carriers	Net Settlements	Net Revenue	Settlement Owed for U.S. Billed Calls	Settlement Due for Foreign Billed Calls	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

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 1997
(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	124	621	$610	$382	$227	29	100	$65	$16	$309
Asia	865	4,653	3,822	2,591	1,232	254	1,061	581	21	1,834
Caribbean	221	1,358	1,015	637	378	87	343	144	5	527
Eastern Europe	96	592	603	280	324	30	127	69	7	400
Middle East	111	655	689	480	210	51	231	164	17	390
North and Central America	1,365	7,292	3,660	1,755	1,905	985	4,182	709	12	2,626
Oceania	107	607	319	155	164	37	209	45	8	217
South America	350	1,815	1,478	921	558	101	457	247	12	817
Western Europe	1,005	5,078	2,941	798	2,143	510	2,389	410	44	2,598
Other Regions	3	11	39	28	11	*	1	*	*	12
Total for Foreign Points	4,233	22,611	15,135	8,016	7,119	2,078	9,062	2,429	142	9,691
Total for U.S. Points	14	70	43	10	32	5	37	6	*	39
Total for All International Points	4,247	22,682	15,178	8,026	7,152	2,083	9,100	2,435	143	9,730

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

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

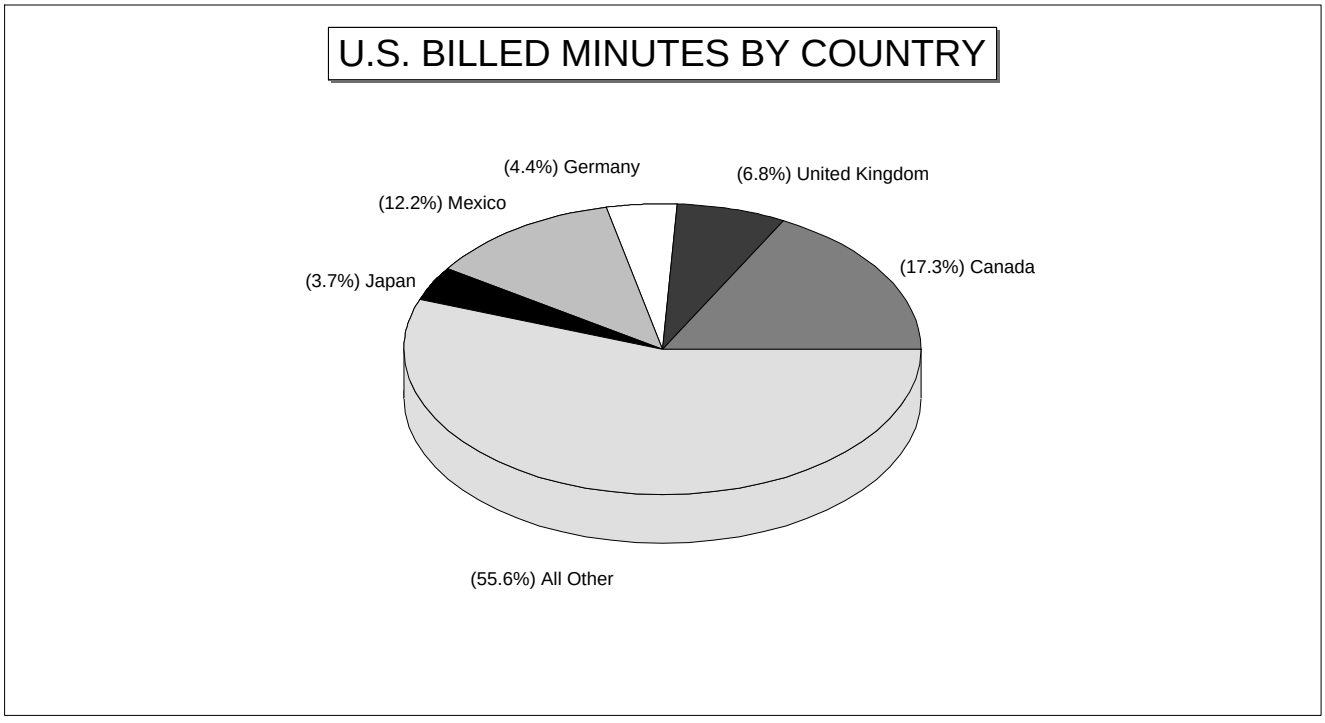


TABLE 7.4

U.S. BILLED REVENUES OF FACILITIES-BASED AND FACILITIES-RESALE CARRIERS IN 1997 *
(Revenue amounts shown in millions)

	International Service					Total International Billed Revenue
	Telephone	Telex	Telegraph	Private Line	Miscellaneous	
ACC Global Corp.	$1					$1
American Samoa Telecommunications Authority	3					3
AmericaTel Corporation				$5		5
Asian American Telcom	**			**	**	**
AT&T Corp.	8,351	$74	$2	353	$5	8,785
BT North America Inc.	**			3		3
Cable & Wireless, Inc.	14			6		20
Communication TeleSystems Int'l./WorldxChange	142					142
COMSAT Corporation				6	6	13
DirectNet Telecommunications	3			3		6
Esprit Telecom (U.K.), Ltd.						
FaciliCom International, L.L.C.	75					75
Fedex International Transmission Corporation				**		**
fONOROLA Corporation	31					31
GE American Communications, Inc.				7		7
Geocomm Corporation				1		1
GTE Corporation	26			3		29
Harris Corporation	2					2
IDC America, Inc					**	**
IDT Corporation	**					**
Intermedia Communications, Inc.					**	**
International Exchange Networks, Ltd.	1			5		5
IT&E Overseas, Inc.	32			2		34
Local Communications Network, Inc.				4		4
MCI / Western Union International	4,243	29	2	262	1	4,537
Melbourne International Comm., Ltd.	**			3		3
Micronesian Telecommunications Corp.	15	**		1		16
Mobile Satellite Communications, Inc.				2	**	2
Northern Communications, Inc.				**		**
Overseas Telecommunications, Inc.				1		1
Pacific Gateway Exchange, Inc.	173			**		173
PanAmSat Comm. Carrier Services, Inc.				**		**
PCI Communications, Inc.	6					6
Primus Telecommunications, Inc.	10					10
PSO, Inc. d/b/a Canal Uno					**	**
RSL Communications, Ltd.	26					26
Satellite Communication Systems, Inc.	1			3		4
Sprint	1,478	2		65	15	1,561
Star Telecommunications, Inc.	59					59
Startec Global Communications Corp.	6					6
Telecom New Zealand Limited	2					2
Telecomunicaciones Ultramarinas-Puerto Rico				2		2
Telefonica Larga Distancia, Inc.	16			1		17
Teleglobe USA Inc.	3			5		7
Telegroup, Inc.				10		10
Telia North America, Inc.				3		3
Teligent, Inc.				**		**
TerraLink Communications, Ltd.						
TresCom International, Inc.	10			**		10
TRICOM USA, Inc.	7					7
V-SAT Telecom, Inc.				**		**
Viatel, Inc./YYC Communications, Inc.	32					32
Williams Communications, Inc.					2	2
WorldCom, Inc.	500	5	**	95		600
Total all carriers ***	$15,268	$110	$4	$851	$29	$16,262

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 $93 million of revenue billed in these points as well as $43 million of calls between the domestic United States and these points.

TABLE 7.5

TOP PROVIDERS OF PURE RESALE INTERNATIONAL MTS IN 1997

	Number of Messages	Number of Minutes	U.S. Carrier Revenue	Percent of Total IMTS Resale Revenue
ACC Corporation	31,071,111	136,696,036	$37,077,152	0.90 %
Access Authority, Inc.	19,884,024	189,346,852	46,420,711	1.13
ATI Telecom, Inc.	8,939,513	71,220,568	28,128,553	0.68
AT&T Corp.	13,832,459	61,220,406	42,731,843	1.04
BPG International, Inc. (BPGI)	17,349,936	78,942,211	21,648,544	0.53
Brittan Communications International Corporation (BCI)	1,428,396	10,377,286	12,750,202	0.31
Business Telecom, Inc (BTI)	13,163,705	61,163,975	30,441,795	0.74
Cable & Wireless, Inc.	281,391,293	1,228,090,784	503,484,245	12.25
Call Concepts Corporation	7,515,588	26,222,297	14,135,492	0.34
CapRock Communications Corporation	4,615,204	27,968,135	13,984,067	0.34
Citizens Communications	9,490,254	33,220,699	14,993,127	0.36
DirectNet Telecommunications	6,678,348	32,383,348	12,986,688	0.32
Econophone, Inc.	10,125,790	22,299,197	12,491,437	0.30
El Paso Long Distance Company	21,000,516	28,209,780	16,004,840	0.39
Excel Communications, Inc.	23,366,255	198,105,367	169,560,070	4.12
Frontier Corporation	40,655,981	157,968,312	131,060,079	3.19
GTE	8,566,375	17,478,710	57,154,315	1.39
IDT Corporation	53,878,829	300,520,618	124,247,373	3.02
Intermedia Communications, Inc.	3,852,668	26,968,678	17,619,883	0.43
IXC Communications, Inc.	11,544,707	40,406,474	20,728,521	0.50
Justice Technology Corporation	26,694,815	85,013,908	45,898,956	1.12
LCI International Telecom Corp.	54,730,379	297,052,768	161,375,265	3.93
L.D. Services, Inc.	2,090,770	13,393,573	12,353,883	0.30
MATRIX Telecom	2,777,470	18,801,998	15,261,264	0.37
MCI Telecommunications Corporation	7,163,714	34,796,179	39,011,713	0.95
National Telephone & Communications, Inc.	8,360,650	66,637,239	45,995,533	1.12
One Call Communications Inc., d/b/a Opticom	2,081,561	7,392,373	12,923,263	0.31
Pacific Gateway Exchange, Inc.	45,975,622	208,959,734	99,670,985	2.42
Primus Telecommunications, Inc. (incl. TresCom International)	88,957,638	418,573,684	171,361,442	4.17
PT-1 Communications, Inc.	129,812,625	713,969,445	223,981,624	5.45
Qwest Communications Corporation	12,439,141	55,680,300	22,908,762	0.56
Rapid Link, USA	6,254,012	72,484,004	13,866,190	0.34
RSL Communications, Ltd.	49,477,156	327,508,880	146,446,583	3.56
SNET America, Inc.	4,117,786	31,748,129	21,314,318	0.52
Sprint	29,033,590	124,420,373	94,956,028	2.31
Star Telecommunications, Inc.	154,478,661	636,791,938	233,338,821	5.68
Startec Global Communications Corporation	24,172,259	120,861,296	79,745,577	1.94
TeleData International, Inc.	6,985,582	32,160,175	18,430,158	0.45
Teleglobe USA Inc.	73,536,382	301,409,296	185,070,176	4.50
Telegroup, Inc.	116,900,785	499,681,774	247,055,248	6.01
Telephone Company of Central Florida, Inc. (TCCF)	5,110,878	35,776,146	28,620,917	0.70
Tel-Save, Inc.	6,179,772	24,359,108	23,544,448	0.57
URSUS Telecom Corporation	7,146,987	28,203,784	26,879,811	0.65
USA Global Link, Inc.	10,156,332	48,039,881	23,130,402	0.56
USLD Communications, Inc. (USLD)	12,894,744	67,091,493	22,121,834	0.54
VarTec Telecom, Inc.	3,842,510	33,195,447	31,431,157	0.76
Viatel, Inc./YYC Communications, Inc.	2,410,801	80,615,873	54,180,708	1.32
Working Assets Long Distance	2,285,385	17,574,196	16,445,189	0.40
WorldCom, Inc.	131,360,413	600,146,320	301,222,964	7.33
WorldxChange Communications (Communication TeleSystems)	27,821,862	136,750,189	54,835,227	1.33
Carriers not shown above	147,642,482	684,826,704	$309,764,559	7.54
Total	1,791,243,716	8,572,725,940	$4,110,791,942	100.00 %

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

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 Link Up 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 Link Up 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).

Link-Up 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 Link Up 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 July 1999. 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 1998. Subscriber data reported for 1997 are estimated for all states.

Table 8.3 provides an eleven-year view of Lifeline program totals for payments to subscribers through local rate discounts. The payments shown in this table do not include state or local rate contributions.

Table 8.4 reports historical subscriber participation in the Link-Up program. The subscribership data shows annual connection assistance statistics for 1988 through 1998. Bell Atlantic companies did not report 1998 Link-Up subscribership data in West Virginia, Maryland, the District of Columbia, and Virginia.

Table 8.5 reports historical payments to carriers participating in the Link-Up program, and reflects reimbursements to carriers in each state. Historical time-series data provide a total of payments made to carriers as a result of rate discounts passed on to subscribers provided by the Link-Up connection assistance programs. Bell Atlantic companies did not report 1998 Link-Up payment data in West Virginia, Maryland, the District of Columbia, and Virginia.

TABLE 8.1
LIFELINE MONTHLY SUPPORT BY STATE OR JURISDICTION
(AS OF AUGUST 1999)

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	0	0	5.25	5.25
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	0	0	5.25	5.25
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 Administrative Company.

TABLE 8.2
LIFELINE ASSISTANCE - SUBSCRIBERS BY STATE OR JURISDICTION

State or Jurisdiction	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997*	1998**
Alabama	0	0	0	0	0	0	0	2,648	11,052	14,346	17,145
Alaska	0	0	0	0	0	0	887	1,445	1,684	1,761	2,514
American Samoa	0	0	0	0	0	0	0	0	0	0	156
Arizona	5,431	5,959	6,723	6,214	5,748	7,587	9,146	9,820	10,679	9,438	13,808
Arkansas	5,618	6,262	6,703	7,295	7,479	7,370	6,859	7,988	9,730	8,926	8,867
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	3,105,870
Colorado	17,281	0	9,897	17,871	20,110	18,814	18,136	16,992	22,195	22,452	21,940
Connecticut	0	0	0	0	0	15,294	50,510	62,982	62,610	61,683	59,547
Delaware	0	0	0	0	0	0	0	0	0	0	368
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
Florida	0	0	0	0	0	0	61,442	108,431	134,258	129,723	128,688
Georgia	0	0	0	31,681	58,497	67,112	72,548	79,545	79,606	75,341	73,656
Guam	0	0	0	0	0	0	0	0	0	0	290
Hawaii	6,025	6,378	6,081	5,950	5,862	6,005	6,200	6,444	6,731	6,465	9,008
Idaho	7,962	7,861	8,186	8,411	8,149	8,212	7,090	7,347	7,526	7,408	6,907
Illinois	0	0	0	0	0	26	0	0	0	0	29,008
Indiana	0	0	0	0	0	0	0	0	0	0	12,427
Iowa	0	0	0	0	0	0	0	0	0	0	2,464
Kansas	0	0	0	0	0	0	0	0	0	0	4,258
Kentucky	0	26	0	0	0	0	0	0	0	0	5,029
Louisiana	0	0	0	0	0	0	0	0	0	0	5,834
Maine	31,752	33,308	44,392	53,020	63,411	70,029	68,482	62,949	61,177	63,553	63,401
Maryland	2,948	2,930	5,465	5,203	5,395	5,228	5,226	4,663	4,028	3,964	3,784
Massachusetts	0	0	87,285	131,635	143,216	160,221	165,723	167,182	162,384	156,294	161,657
Michigan	0	41,121	66,053	96,044	116,398	130,586	138,870	135,599	131,786	129,337	129,266
Minnesota	22,386	45,625	57,529	57,075	51,151	55,380	59,431	51,089	48,494	47,575	48,870
Mississippi	0	0	0	2,153	2,405	4,493	8,438	9,717	9,282	8,321	10,472
Missouri	16,064	15,187	14,639	16,980	17,295	17,356	15,807	13,897	11,272	10,368	7,885
Montana	4,589	5,023	5,507	5,405	5,698	6,617	6,744	6,813	8,031	7,613	7,961
Nebraska	0	0	0	0	0	0	0	0	0	0	9,318
Nevada	1,665	4,497	5,702	5,748	6,339	7,528	8,927	9,408	8,472	9,284	3,434
New Hampshire	0	0	0	0	0	0	0	0	0	0	2,581
New Jersey	0	0	0	0	0	0	0	0	0	0	6,037
New Mexico	10,692	11,722	12,770	15,190	18,660	28,742	32,244	28,380	30,075	30,314	30,837
New York	197,339	271,386	327,808	393,684	456,174	522,684	592,705	705,871	756,657	698,267	702,980
North Carolina	16,438	15,852	14,996	15,812	21,208	23,496	23,446	22,791	23,086	22,595	29,617
North Dakota	2	0	10,037	10,610	10,664	10,029	9,411	8,657	7,146	7,369	10,863
Northern Mariana Islands	0	0	0	0	0	0	0	0	0	0	192
Ohio	7,504	15,420	14,885	15,712	33,450	44,801	47,126	54,706	58,392	60,366	69,238
Oklahoma	0	0	0	0	0	0	0	0	532	532	1,521
Oregon	49,632	22,330	21,551	23,064	25,229	28,305	30,475	35,820	34,804	31,213	27,969
Pennsylvania	0	0	0	0	0	0	0	0	4,797	7,114	22,550
Puerto Rico	0	0	0	0	0	0	0	0	0	0	9,471
Rhode Island	12,854	14,017	15,757	23,765	26,906	38,672	39,992	40,835	42,524	43,881	45,066
South Carolina	0	0	0	0	0	0	0	10,624	16,498	18,386	22,214
South Dakota	4,019	4,657	4,764	4,924	5,018	5,076	3,561	3,690	3,718	3,708	10,519
Tennessee	0	0	0	0	18,749	20,419	20,721	19,934	19,926	18,819	22,902
Texas	11,878	21,055	33,698	48,453	96,405	103,232	136,352	165,609	190,095	193,444	210,686
Utah	16,262	14,746	16,006	21,565	27,717	28,379	28,157	26,930	24,088	22,625	20,095
Vermont	15,599	17,013	18,044	20,661	21,895	22,973	24,322	25,624	24,791	25,356	26,474
Virgin Islands	0	0	0	0	0	316	594	253	296	471	567
Virginia	12,129	14,895	16,201	17,365	19,143	21,293	22,100	20,744	22,180	23,187	22,032
Washington	33,372	34,685	49,985	68,235	74,879	85,571	90,148	87,276	84,149	63,965	61,784
West Virginia	6,180	4,930	4,490	4,262	4,115	4,160	4,704	4,230	4,336	5,164	5,319
Wisconsin	12	31	7	54,137	55,829	54,576	59,744	58,071	50,714	50,894	42,490
Wyoming	0	0	0	416	1,366	1,271	1,119	818	776	864	1,124
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	5,358,960

Source: Universal Service Administrative Company.

* 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 April 1999). Only 95% of all eligible companies have reported to USAC for reimbursement at this time.

TABLE 8.3
LIFELINE ASSISTANCE ANNUAL PAYMENTS BY STATE OR JURISDICTION

State or Jurisdiction	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Cumulative Total
Alabama	0	0	0	0	0	0	0	56,744	372,371	602,521	1,435,349	2,466,985
Alaska	0	0	0	0	0	0	24,330	55,101	69,116	73,941	203,222	425,710
American Samoa	0	0	0	0	0	0	0	0	0	0	8,167	8,167
Arizona	140,515	117,744	136,518	127,419	144,290	188,216	307,699	346,595	383,752	396,391	1,114,945	3,404,084
Arkansas	168,737	251,116	276,742	301,087	316,837	310,979	295,293	301,808	362,497	374,881	587,468	3,547,445
California	20,016,990	29,082,569	32,228,252	36,072,671	40,381,514	47,512,283	52,461,134	57,460,181	62,231,440	63,011,988	246,622,822	687,081,844
Colorado	559,027	405,491	173,248	751,056	843,519	802,077	775,750	727,801	829,354	942,972	1,857,060	8,667,355
Connecticut	0	0	0	0	0	57,033	1,493,569	2,586,972	2,660,608	2,590,702	3,660,711	13,049,595
Delaware	0	0	0	0	0	0	0	0	0	0	23,198	23,198
District of Columbia (4)	92,964	112,180	99,980	90,500	128,348	312,684	429,396	313,998	293,322	318,368	0	2,191,740
Florida	0	0	0	0	0	0	1,290,282	4,396,137	5,191,213	5,448,368	10,115,554	26,441,554
Georgia	0	0	0	794,088	2,247,925	2,764,461	3,003,777	3,315,787	3,383,638	3,164,320	6,187,239	24,861,235
Guam	0	0	0	0	0	0	0	0	0	0	18,061	18,061
Hawaii	106,534	203,052	198,943	186,490	182,555	190,166	196,554	202,107	273,471	271,524	551,150	2,562,546
Idaho	237,219	328,732	347,270	358,515	355,127	349,344	328,583	321,830	320,845	311,156	572,373	3,830,994
Illinois	0	0	18	414,457	0	0	0	0	0	0	1,850,468	2,264,943
Indiana	0	0	0	0	0	0	0	0	0	0	794,363	794,363
Iowa	0	0	0	0	0	0	0	0	0	0	159,769	159,769
Kansas	0	0	0	0	0	0	0	0	0	38	339,422	339,460
Kentucky	0	0	0	0	0	0	0	0	0	0	313,847	313,847
Louisiana	0	0	0	0	0	0	0	0	0	0	378,982	378,982
Maine	955,728	1,324,559	1,720,591	2,165,485	2,605,855	2,902,206	2,959,351	2,652,482	2,737,366	2,669,234	5,323,976	28,016,833
Maryland	93,757	120,042	220,346	216,947	213,303	221,574	218,052	211,819	180,079	166,473	319,809	2,182,201
Massachusetts	0	0	2,552,254	5,126,895	5,996,798	6,598,801	7,064,939	7,146,757	6,952,050	6,564,336	13,628,125	61,630,955
Michigan	0	433,487	1,348,992	2,163,526	2,742,396	3,081,708	3,351,293	3,288,234	3,203,533	3,104,079	9,758,994	32,476,242
Minnesota	452,885	1,658,815	2,256,567	2,416,108	2,258,780	2,295,299	2,332,178	2,170,211	2,080,597	1,998,168	3,509,979	23,429,587
Mississippi	0	0	0	16,962	29,506	109,841	339,633	399,633	401,106	349,468	887,098	2,533,247
Missouri	488,662	633,736	620,605	648,102	711,138	699,011	653,539	590,212	486,547	435,466	550,667	6,517,685
Montana	144,515	192,095	234,696	228,885	234,046	266,870	281,441	290,312	328,627	319,745	677,660	3,198,892
Nebraska	0	0	0	0	0	0	0	0	0	0	601,526	601,526
Nevada	20,499	113,400	122,289	134,038	147,595	172,658	194,440	206,654	196,662	215,016	214,432	1,737,683
New Hampshire	0	0	0	0	0	0	0	0	0	0	162,331	162,331
New Jersey	0	0	0	0	0	0	0	0	0	0	317,527	317,527
New Mexico	318,373	465,455	528,392	615,450	744,810	1,167,110	1,357,828	1,216,787	1,264,979	1,273,169	2,596,409	11,548,762
New York	4,104,279	8,917,964	11,253,994	15,649,754	18,295,637	20,970,135	23,844,744	27,188,016	30,924,772	29,327,216	54,748,143	245,224,654
North Carolina	521,322	681,469	637,444	647,593	875,130	962,905	1,003,092	922,046	972,403	948,969	2,427,623	10,599,996
North Dakota	25	159	299,829	438,302	447,187	421,896	412,255	378,733	333,434	309,496	868,857	3,910,173
Northern Mariana Islands	0	0	0	0	0	0	0	0	0	0	10,659	10,659
Ohio	240,387	643,659	643,996	650,084	1,304,827	1,963,353	2,293,070	2,409,791	2,366,359	2,535,383	5,350,743	20,401,652
Oklahoma	0	0	0	0	0	0	0	0	10	900	106,452	107,362
Oregon	516,432	891,600	894,729	944,221	1,044,746	1,175,398	1,262,606	1,499,920	1,479,004	1,310,954	2,358,864	13,378,474
Pennsylvania	0	0	0	0	0	0	0	0	87,639	298,771	1,690,002	2,076,412
Puerto Rico	0	0	0	0	0	0	0	0	0	0	587,156	587,156
Rhode Island	404,621	571,349	643,660	960,213	1,111,414	1,487,776	1,693,628	1,713,982	1,772,985	1,843,008	3,776,998	15,979,634
South Carolina	0	0	0	0	0	0	0	264,326	647,296	772,226	1,822,317	3,506,165
South Dakota	65,802	190,399	201,953	207,281	211,499	214,402	160,110	156,115	152,834	155,737	665,563	2,381,695
Tennessee	0	0	0	0	506,187	844,079	881,488	837,524	841,342	790,409	1,874,117	6,575,146
Texas	126,953	800,535	1,120,002	1,736,759	3,576,193	4,181,609	5,335,092	6,723,118	7,776,103	8,124,667	17,411,709	56,912,740
Utah	468,875	381,945	609,049	874,025	1,161,879	1,203,870	1,208,738	1,179,200	1,057,483	950,263	1,699,272	10,794,599
Vermont	486,211	691,848	755,646	858,766	924,333	979,697	1,041,838	1,094,178	1,039,649	1,064,932	2,211,272	11,148,370
Virgin Islands	0	0	0	0	0	5,753	29,075	22,459	14,293	19,779	49,229	140,588
Virginia	328,559	599,744	669,972	704,087	782,585	907,400	920,012	912,437	911,374	973,851	1,773,356	9,483,377
Washington	722,883	858,824	1,474,869	2,199,086	2,524,658	2,997,455	2,966,094	2,813,846	2,743,597	2,686,537	4,152,921	26,140,770
West Virginia	169,363	206,163	192,927	181,082	175,309	188,356	206,594	190,638	176,422	216,891	367,804	2,271,549
Wisconsin	124	117	234	217,958	482,544	521,821	617,261	676,880	653,204	610,732	2,766,987	6,547,862
Wyoming	0	0	0	5,833	57,652	54,640	49,077	36,101	33,007	36,306	93,220	365,836
National Totals	31,952,241 [1]	50,878,248 [2]	62,464,007 [2]	79,103,725 [2]	93,766,122 [2]	109,082,866 [2]	123,283,835 [2]	137,277,472 [2]	148,186,383 [2]	147,579,351 [2]	422,155,967 [3]	1,405,730,236

Source: Universal Service Administrative Company.

[1] Amounts are based on local carrier's actuals.
[2] Payments are final and not subject to further adjustment.
[3] Dollars reported are for January through December 1998 for companies requesting reimbursement. (Approximately 95% have reported at this time.) Data includes true-ups submitted through 4/99. Lifeline dollars for 1998 include Toll Limitation Services (TLS) and presubscribed interexchange carrier charges (PICC) -- New programs starting January 1998.
[4] Bell Atlantic did not file in D.C. and is pending 1998 Exempt Telecommunications Carriers (ETC) status.

TABLE 8.4
LINK-UP ASSISTANCE - SUBSCRIBERS BY STATE OR JURISDICTION

State or Jurisdiction	1987 & 1988	1989	1990	1991	1992	1993	1994	1995	1996	1997*	1998**
Alabama	4,314	1,810	1,927	2,182	1,381	736	308	276	362	N/A	2,260
Alaska	0	0	0	0	0	0	395	777	732	N/A	870
American Samoa	0	0	0	0	0	0	0	0	0	N/A	122
Arizona	95	138	416	206	88	257	367	387	906	N/A	527
Arkansas	8,439	4,846	5,240	6,522	7,067	12,082	16,124	8,549	11,577	N/A	8,162
California	0	0	0	0	0	0	0	0	0	N/A	1,542,976
Colorado	0	0	585	1,749	1,614	1,257	859	593	2,216	N/A	2,519
Connecticut	2,970	2,737	3,499	6,661	9,164	10,316	17,176	18,410	13,934	N/A	8,938
Delaware	0	0	0	0	0	0	0	7	406	N/A	132
District of Columbia	1,016	531	514	510	1,145	1,863	1,675	1,920	1,784	N/A	N/A
Florida	1,570	3,924	3,342	3,824	4,690	2,811	2,290	1,639	3,831	N/A	9,799
Georgia	0	0	0	13,052	28,108	21,446	20,753	20,656	15,368	N/A	10,695
Guam	0	0	0	0	0	0	0	0	0	N/A	202
Hawaii	0	87	905	1,326	1,708	2,047	2,746	3,989	3,276	N/A	1,535
Idaho	0	64	240	362	396	465	658	571	671	N/A	792
Illinois	0	3,963	23,213	11,721	0	21,278	24,365	15,794	10,077	N/A	12,261
Indiana	17	1,681	1,475	2,747	4,939	4,782	5,010	3,001	4,318	N/A	4,595
Iowa	2,158	5,997	6,228	5,522	5,221	4,784	4,382	3,249	2,575	N/A	1,996
Kansas	942	613	722	582	635	557	493	435	421	N/A	1,385
Kentucky	8,496	6,951	6,633	8,931	11,660	10,963	11,819	13,902	14,173	N/A	7,554
Louisiana	244	17,186	28,356	18,693	12,992	7,053	4,943	3,275	1,571	N/A	3,899
Maine	415	7,244	10,128	12,132	5,576	14,450	19,363	14,798	20,783	N/A	21,621
Maryland	246	243	4,985	3,540	3,168	2,772	2,837	2,613	2,091	N/A	N/A
Massachusetts	0	0	8,569	4,366	4,661	17,390	19,464	18,601	11,727	N/A	5,864
Michigan	0	7,572	23,675	36,639	40,339	36,512	34,640	26,198	20,097	N/A	18,581
Minnesota	123	734	949	787	427	443	1,871	834	832	N/A	1,058
Mississippi	1,110	1,558	1,663	1,369	932	2,371	4,236	4,151	2,974	N/A	1,802
Missouri	1,546	2,067	1,105	840	766	735	1,633	742	627	N/A	4,777
Montana	960	1,624	1,607	1,157	1,181	1,291	1,253	988	1,909	N/A	1,524
Nebraska	267	438	526	688	878	650	522	496	331	N/A	625
Nevada	0	79	324	487	562	866	685	708	640	N/A	115
New Hampshire	2	351	407	1,009	1,544	1,805	1,570	1,312	1,246	N/A	1,315
New Jersey	1,251	452	524	580	696	565	567	342	237	N/A	1,042
New Mexico	1,534	2,461	3,173	4,178	5,848	9,963	12,600	12,277	9,171	N/A	7,859
New York	274	44,221	188,182	241,477	290,856	238,856	290,922	327,123	346,089	N/A	199,116
North Carolina	16,889	4,661	2,100	2,348	2,175	1,762	1,207	841	569	N/A	2,407
North Dakota	207	499	313	373	337	398	355	355	220	N/A	1,478
Northern Mariana Islands	0	0	0	0	0	0	0	0	0	N/A	1,475
Ohio	10,857	11,838	11,157	18,239	37,191	46,028	40,071	29,338	23,196	N/A	18,889
Oklahoma	0	0	728	1,582	1,271	1,281	1,087	1,040	1,260	N/A	3,116
Oregon	2,427	1,352	3,664	3,657	4,588	6,335	7,144	8,043	7,862	N/A	5,776
Pennsylvania	2,463	13,702	79,532	85,695	97,585	94,897	100,651	99,105	92,128	N/A	45,737
Puerto Rico	0	2,519	5,523	4,308	3,886	3,138	3,455	4,116	3,640	N/A	3,870
Rhode Island	79	584	1,023	960	1,483	2,002	2,808	2,728	2,100	N/A	1,766
South Carolina	4,954	3,037	1,535	2,265	1,897	2,113	2,053	1,495	1,158	N/A	2,238
South Dakota	173	1,038	542	443	439	362	451	369	221	N/A	2,326
Tennessee	122	6,613	3,278	5,418	4,126	5,203	5,004	3,561	3,684	N/A	4,172
Texas	17,124	15,553	22,587	30,915	41,381	44,184	66,010	72,210	75,708	N/A	122,147
Utah	1,812	1,043	387	1,781	6,286	4,843	3,758	3,525	5,584	N/A	2,880
Vermont	0	0	1,349	2,073	2,104	2,217	2,485	2,074	1,396	N/A	1,365
Virgin Islands	0	0	0	0	0	38	111	35	13	N/A	199
Virginia	5,507	5,957	9,598	14,642	14,523	15,701	15,797	15,847	14,428	N/A	2,158
Washington	414	0	3,787	30,134	34,413	37,419	43,429	41,462	45,284	N/A	28,075
West Virginia	4,741	481	327	363	322	586	577	657	997	N/A	122
Wisconsin	0	17,555	36,444	40,515	40,942	37,380	34,903	28,209	21,937	N/A	25,783
Wyoming	0	500	169	95	94	109	82	56	17	N/A	26
National Totals	105,758	206,504	513,335	639,645	743,285	737,362	837,964	823,679	808,354	N/A	2,162,523

Source: Universal Service Administrative Company.

* Subscriber data was not actually collected in 1997.

** Subscribers are reported for January through December 1998 for companies requesting reimbursement. Only 95% of all eligible companies have reported at this time.

TABLE 8.5
LINK-UP ASSISTANCE ANNUAL PAYMENTS BY STATE OR JURISDICTION

State or Jurisdiction	1987 & 1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Cumulative Total
Alabama	87,561	36,757	41,125	47,246	30,322	16,881	7,021	5,467	6,661	9,738	37,716	326,495
Alaska	0	0	0	0	0	0	8,541	16,530	14,673	10,485	17,367	67,596
American Samoa	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3,660	3,660
Arizona	2,145	2,815	9,260	4,792	2,054	6,000	8,533	23,340	22,359	23,234	12,446	116,978
Arkansas	149,962	92,263	102,651	128,727	152,380	304,253	337,111	164,617	232,383	221,128	141,989	2,027,464
California	0	0	0	0	0	0	0	0	0	0	28,644,537	28,644,537
Colorado	0	0	15,586	47,146	43,867	34,417	15,065	10,498	38,773	48,230	44,217	297,799
Connecticut	56,098	51,674	66,848	125,749	169,970	205,974	386,459	414,224	313,522	256,225	201,089	2,247,832
Delaware	0	0	0	0	0	0	0	126	7,308	8,268	2,376	18,078
District of Columbia (3)	15,262	8,955	7,909	7,848	17,611	27,500	22,288	27,760	27,102	27,399	N/A	189,634
Florida	29,714	85,917	76,242	82,224	113,225	69,296	73,744	88,707	100,275	87,753	196,450	1,003,547
Georgia	0	0	0	277,968	604,321	461,379	449,418	444,097	330,076	146,239	204,596	2,918,094
Guam	0	0	0	0	0	0	0	0	0	0	3,521	3,521
Hawaii	0	1,968	13,660	14,969	19,168	24,428	33,051	46,507	37,856	34,115	34,784	260,506
Idaho	0	839	4,136	5,860	6,407	7,418	10,578	8,985	9,861	18,754	11,509	84,347
Illinois	0	106,872	628,664	320,216	0	555,206	617,419	477,288	282,633	232,685	317,772	3,538,755
Indiana	169	36,987	35,646	63,398	119,317	112,484	117,045	71,478	40,189	58,703	103,698	759,114
Iowa	36,369	107,881	115,069	99,478	92,333	81,214	74,162	56,111	40,437	18,771	28,639	750,464
Kansas	16,881	11,367	14,320	10,914	11,530	10,673	9,573	8,141	8,429	35,655	26,737	164,220
Kentucky	157,286	168,846	174,698	191,793	245,518	233,258	262,990	263,666	274,776	175,728	143,819	2,292,378
Louisiana	7,318	490,741	838,721	551,215	386,163	210,409	147,015	76,603	38,121	15,288	73,810	2,835,404
Maine	4,549	160,899	222,351	271,175	120,532	321,595	430,941	327,363	461,108	522,810	476,938	3,320,261
Maryland	5,304	5,840	118,647	85,142	81,999	71,223	52,782	63,008	50,178	46,278	30,336	610,737
Massachusetts	0	0	140,028	76,355	86,415	322,410	366,427	344,862	217,417	131,948	108,720	1,794,582
Michigan	0	172,430	501,015	761,801	840,265	786,106	720,903	472,243	224,317	477,688	384,007	5,340,775
Minnesota	1,873	11,131	11,455	12,644	12,660	38,742	35,475	8,435	7,622	14,189	15,793	170,019
Mississippi	21,273	39,512	29,533	26,277	17,743	45,472	81,156	94,989	67,873	31,033	38,181	493,042
Missouri	32,561	42,064	19,760	14,615	17,047	27,775	23,702	12,190	10,308	9,880	83,766	293,668
Montana	19,715	35,833	35,615	25,154	25,074	26,475	19,726	13,413	24,502	24,304	20,099	269,910
Nebraska	3,453	6,996	7,964	11,267	15,382	11,950	9,001	6,892	5,253	4,391	8,380	90,929
Nevada	0	390	3,004	9,338	10,999	15,107	11,838	11,691	13,445	8,605	1,875	86,292
New Hampshire	40	7,107	8,510	21,420	36,328	44,199	42,146	32,147	30,530	31,583	26,155	280,165
New Jersey	25,923	9,232	10,755	12,054	14,502	11,745	11,814	8,106	4,995	3,844	22,388	135,358
New Mexico	38,458	61,605	79,198	107,467	152,371	304,961	262,693	131,859	137,238	128,193	116,219	1,520,262
New York	3,386	1,026,301	4,483,514	5,962,604	6,611,528	7,243,113	8,120,361	8,972,155	9,586,748	5,604,194	5,479,060	63,092,964
North Carolina	209,615	66,490	31,302	33,805	32,761	24,042	19,718	13,958	9,510	8,720	38,516	488,437
North Dakota	2,672	7,493	5,082	6,182	5,713	6,682	5,534	5,636	3,491	17,922	23,136	89,543
Northern Mariana Islands	0	0	0	0	0	0	0	0	0	0	5,887	5,887
Ohio	197,143	226,194	204,433	311,997	650,806	775,582	690,334	515,674	394,796	374,183	319,261	4,660,403
Oklahoma	0	0	15,826	35,077	27,986	28,251	23,936	20,142	22,082	33,908	47,836	255,044
Oregon	33,279	10,643	23,262	22,801	31,834	46,035	54,485	57,728	53,338	51,816	44,007	429,228
Pennsylvania	48,705	273,123	1,592,565	1,743,115	1,976,702	1,904,903	2,022,887	1,969,372	1,850,064	1,735,564	1,255,906	16,372,906
Puerto Rico	0	44,084	91,784	72,561	65,986	54,826	57,950	69,244	76,381	83,138	68,116	684,070
Rhode Island	1,187	8,498	14,527	13,634	21,059	28,427	38,416	45,309	35,531	25,226	29,878	261,692
South Carolina	100,652	62,420	38,303	34,894	36,759	40,434	38,405	30,035	21,851	19,639	42,388	465,780
South Dakota	3,029	18,167	9,368	7,755	7,685	6,349	5,641	4,614	2,765	2,257	29,448	97,078
Tennessee	2,539	137,758	73,824	62,690	69,673	86,711	85,071	89,617	60,589	22,082	78,042	768,596
Texas	496,217	424,313	636,839	591,565	811,837	825,340	1,258,838	1,371,343	1,632,153	1,517,075	2,243,803	11,809,323
Utah	32,164	18,515	6,870	31,614	111,578	85,963	35,478	32,798	74,404	53,213	36,078	518,675
Vermont	0	0	22,132	34,041	34,358	36,314	40,478	34,039	24,863	19,126	24,157	269,508
Virgin Islands	0	0	0	0	0	1,012	2,584	1,001	317	1,392	2,005	8,311
Virginia	85,198	122,944	173,149	267,462	289,381	323,486	248,128	292,190	269,695	267,013	182,431	2,521,077
Washington	7,465	1,179	59,277	467,920	532,652	561,632	668,199	693,528	676,482	623,757	409,930	4,702,021
West Virginia	55,983	8,050	7,002	7,878	7,366	11,983	16,145	15,119	14,508	16,102	8,966	169,102
Wisconsin	0	256,423	526,066	581,758	569,079	537,514	490,668	426,278	356,626	370,939	376,880	4,492,231
Wyoming	0	10,098	3,510	1,865	1,934	2,180	1,449	938	342	400	424	23,140
National Totals	1,991,148 [1]	4,479,614 [1]	11,351,005 [1]	13,705,470 [1]	15,342,180 [1]	17,019,329 [1]	18,573,322 [1]	18,392,061 [1]	18,246,756 [1]	13,710,810 [1]	42,329,744 [2]	175,141,439

Source: Universal Service Administrative Company.

[1] Payments are final and are not subject to further adjustment.
[2] Dollars reported are for January through December 1998 for companies requesting reimbursement. (Approximately 95% have reported at this time).
[3] Bell Atlantic did not file in D.C. and is pending 1998 Exempt Telecommunications Carriers (ETC) status.

LOCAL COMPETITION:

For most of this 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 CAP 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.

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:

- Incumbent local exchange carriers (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.

- The Telecommunications Act of 1996 envisioned three paths to local competition: resold ILEC services; leased ILEC facilities; and service provided solely over CLEC facilities. About 2% of ILEC switched voice-grade lines were being resold by CLECs at the end of 1998, up from about 1% at the end of 1997. CLEC use of ILEC unbundled local loops almost tripled in the course of 1998, but remains a small 0.2% of ILEC lines. The Commission does not receive from CLECs data on the number of customer lines that CLECs provide solely over their own facilities. Estimates by investment analysts suggest, however, that total CLEC switched lines represent between 2% and 3% of total nationwide switched access lines.

- There appears to be potential for increased CLEC use of ILEC unbundled local loops, because CLECs now have operational collocation arrangements in switching centers from which ILECs serve almost 50% of their switched voice grade customer lines, on a nationwide basis.

- About 40% of the ILEC lines resold by CLECs appear to serve CLEC residential customers. The Commission does not receive from CLECs data on numbers of residential customers served over ILEC unbundled local loops or over CLEC facilities alone. Industry observers generally believe that, for CLECs as a group, the residential share of such lines is lower than the residential share of resold lines.

- The geographic reach of facilities-based competition continues to increase. In 1994, no CLECs had the numbering resources (central office codes) necessary to provide switched service over their own facilities. By the end of June 1999, CLECs had codes in every state and in all but 18 of the nation's 193 local access and transport areas (LATAs).

- Local service competitors are deploying fiber in their networks at a faster rate than are ILECs. They 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 potentially available to carry calls within local markets.

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 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 and by State

Table 9.2 shows that, at the end of 1998, about 1.7% of nationwide ILEC switched voice-grade lines were being provided to CLECs on a total service resale basis -- the discount resale mechanism mandated by the 1996 Act. Another 0.2% of lines were being provided under other resale arrangements that were not mandated by the 1996 Act. No information was reported for Alaska, but ILECs reported providing resold lines to competitors in all other states. Table 9.3 suggests that about 40% of ILEC lines provided to CLECs on a resale basis are used to serve CLEC residential customers.

Table 9.4 summarizes data on the number of ILEC lines leased to CLECs as unbundled network element (UNE) loops. A comparison of total UNE loops reported by ILECs (Table 9.4) with the sum of total TSR plus total other resale lines they reported (Table 9.2) indicates that, on a nationwide basis, resold ILEC lines outnumbered UNE loops by a factor of approximately 8 to 1 at the end of 1998. The number of UNE loops nearly tripled over the course of the year, but remained a small 0.2% of total ILEC switched lines at the end of the year. The number of states for which no UNE loops were reported has dropped to four: Idaho, South Dakota, West Virginia, and Wyoming. No information was submitted for Alaska.

There appears to be potential for significant gains in CLEC use of ILEC unbundled local loops. Table 9.5 indicates that, at the end of 1998, CLECs had operational collocation arrangements in switching centers from which ILECs serve slightly over 40% of their switched lines to residential customers and almost 60% of their switched lines to business and government customers.

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, a reserved code that is not activated within eighteen months is released from reservation.

Table 9.6 and Chart 9.3 show that the nationwide share of numbering codes held by new local competitors has steadily increased over time, to 20% in the second 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, 158 CLECs had at least one numbering code in the second 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 91% between the last quarter of 1995 and the second quarter of 1999.

Table 9.7 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 the Table 9.7. 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. More than 1.5 million such telephone numbers had been transferred by the end of May 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.

Chart 9.1
Fiber Miles

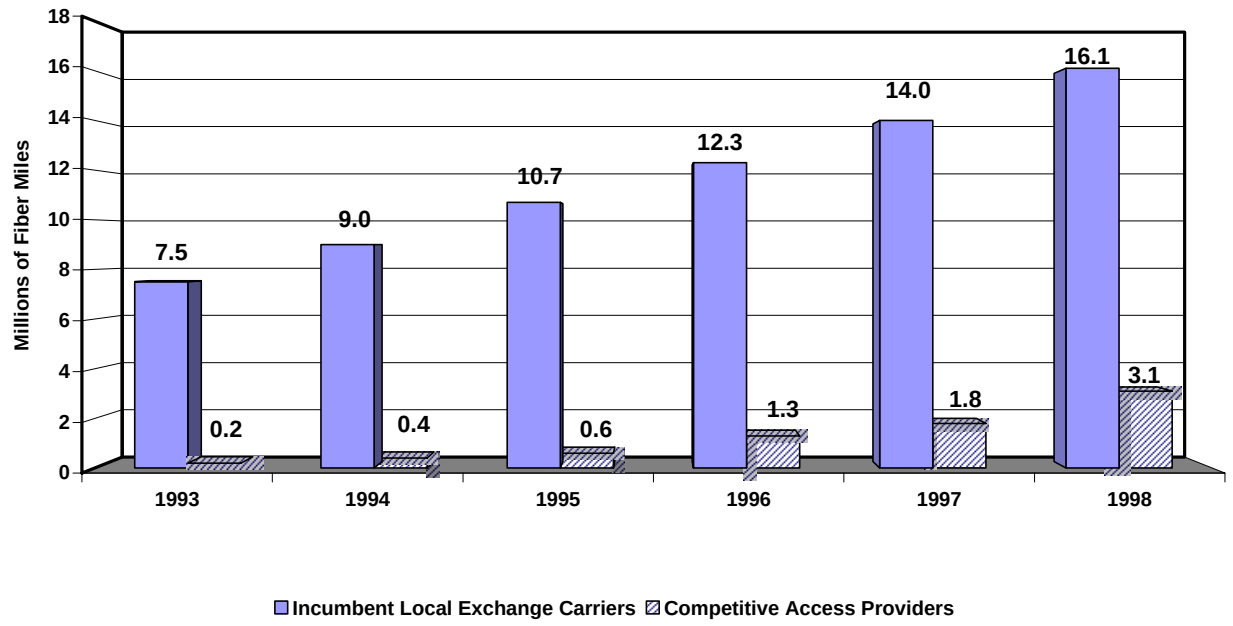
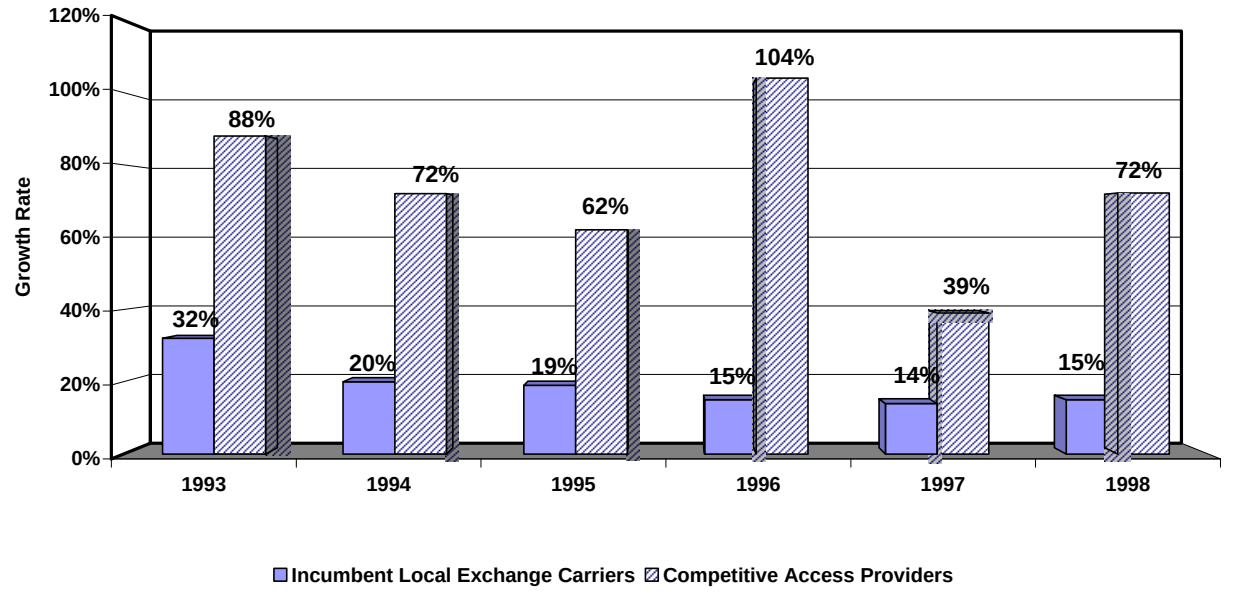


Chart 9.2
Percentage Growth In Fiber Mileage



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
LINES PROVIDED BY LARGE ILECS TO CLECS FOR RESALE

State	Total State Lines (1997 USF Loops in thousands) +	Company	As of December 31, 1998					As of September 30, 1998					As of June 30, 1998			As of December 31, 1997		
			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 #	Percent Other	Total Switched Lines (thousands)	Total Service Resale ## (thousands)	Percent TSR	Total Switched Lines (thousands)	Total Service Resale ## (thousands)	Percent TSR
Alabama	2,405	*BellSouth*	1,947	39	2.0 %	n.a.	n.a. %	1,892	34	1.8 %	n.a.	n.a. %	1,881	25	1.3 %	*	15	* %
Alaska	398																	
Arizona	2,732	*U S WEST*	2,720	11	0.4	5	0.2	2,619	6	0.2	5	0.2	2,615	4	0.2	*	1	*
Arkansas	1,369	*SBC*	974	18	1.9	0	0.0	967	17	1.8	0	0.0	958	15	1.5	*	8	*
California	21,483	*GTE*	4,551	40	0.9	0	0.0	4,498	51	1.1	0	0.0	4,443	39	0.9	4,394	26	0.6
		SBC	18,110	261	1.4	0	0.0	17,646	252	1.4	0	0.0	17,792	251	1.4	*	252	*
Colorado	2,644	*U S WEST*	2,650	29	1.1	1	***	2,556	22	0.8	1	***	2,583	16	0.6	2,554	8	0.3
Connecticut	2,152	*SBC (SNET)*	2,148	36	1.7	11	0.5	2,133	34	1.6	15	0.7	2,137	31	1.5	2,120	28	1.3
Delaware	532	*Bell Atlantic*	569	10	1.8	n.a.	n.a.	565	10	1.8	n.a.	n.a.	557	7	1.3	*	*	*
District of Columbia	920	*Bell Atlantic*	945	11	1.2	n.a.	n.a.	946	11	1.1	n.a.	n.a.	935	7	0.7	*	3	*
Florida	10,491	*BellSouth*	6,487	112	1.7	n.a.	n.a.	6,376	103	1.6	n.a.	n.a.	6,297	95	1.5	6,231	67	1.1
		GTE	2,297	32	1.4	0	0.0	2,264	37	1.6	0	0.0	2,240	28	1.3	2,232	12	0.5
		Sprint	2,032	19	0.9	0	0.0	1,994	15	0.8	n.a.	n.a.	1,983	15	0.8	1,931	9	0.4
Georgia	4,770	*BellSouth*	4,143	105	2.5	n.a.	n.a.	4,089	99	2.4	n.a.	n.a.	4,028	89	2.2	4,003	62	1.5
Hawaii	708	*GTE*	717	**	***	0	0.0	703	**	***	0	0.0	712	**	***	711	**	***
Idaho	681	*U S WEST*	525	**	***	**	0.1	500	**	***	**	***	470	**	***	493	**	***
Illinois	7,981	*Ameritech*	7,078	196	2.8	15	0.2	7,022	205	2.9	16	0.2	7,313	221	3.0	6,851	172	2.5
		GTE	914	1	0.1	0	0.0	901	1	0.1	0	0.0	895	**	***	882	0	0.0
Indiana	3,471	*Ameritech*	2,225	16	0.7	1	0.1	2,207	12	0.5	1	0.1	2,236	8	0.4	2,167	**	***
		GTE	959	2	0.2	0	0.0	930	1	0.1	0	0.0	932	**	***	922	0	0.0
		Sprint	241	0	0.0	0	0.0	240	0	0.0	n.a.	n.a.	240	0	0.0	234	0	0.0
Iowa	1,589	*U S WEST*	1,077	8	0.8	108	10.1	1,057	3	0.3	84	8.0	1,060	99	9.3	1,049	82	7.8
Kansas	1,585	*SBC*	1,374	76	5.5	0	0.0	1,365	62	4.5	0	0.0	1,348	50	3.7	*	29	*
		Sprint	140	1	0.4	0	0.0	*	*	*	n.a.	n.a.	140	**	0.4	*	*	*
Kentucky	2,064	*BellSouth*	1,207	31	2.6	n.a.	n.a.	1,193	28	2.3	n.a.	n.a.	1,184	20	1.7	*	8	*
		GTE	543	2	0.4	0	0.0	528	1	0.2	0	0.0	531	1	0.2	524	**	0.1
Louisiana	2,435	*BellSouth*	2,418	82	3.4	n.a.	n.a.	2,336	61	2.6	n.a.	n.a.	2,303	44	1.9	2,256	16	0.7
Maine	808	*Bell Atlantic*	688	5	0.7	n.a.	n.a.	678	1	0.2	n.a.	n.a.	677	2	0.3	681	**	***
Maryland	3,494	*Bell Atlantic*	3,704	27	0.7	n.a.	n.a.	3,677	22	0.6	n.a.	n.a.	3,638	11	0.3	*	2	*

TABLE 9.2
LINES PROVIDED BY LARGE ILECS TO CLECS FOR RESALE

State	Total State Lines (1997 USF Loops in thousands) +	Company	As of December 31, 1998					As of September 30, 1998					As of June 30, 1998			As of December 31, 1997		
			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 #	Percent Other	Total Switched Lines (thousands)	Total Service Resale ## (thousands)	Percent TSR	Total Switched Lines (thousands)	Total Service Resale ## (thousands)	Percent TSR
Massachusetts	4,464	*Bell Atlantic*	4,622	130	2.8 %	n.a.	n.a. %	4,434	96	2.2 %	n.a.	n.a. %	4,396	85	1.9 %	4,517	41	0.9 %
Michigan	6,258	*Ameritech*	5,439	119	2.2	11	0.2	5,403	137	2.5	11	0.2	5,608	168	3.0	5,341	151	2.8
		GTE	753	0	0.0	0	0.0	744	0	0.0	0	0.0	739	0	0.0	725	0	0.0
Minnesota	2,878	*Frontier*						*	*	*	0	0.0						
		Sprint	156	**	***	0	0.0	155	0	0.0	n.a.	n.a.	153	0	0.0	148	0	0.0
		U S WEST	2,284	65	2.8	26	1.2	2,199	51	2.3	22	1.0	2,202	55	2.5	2,199	30	1.4
Mississippi	1,321	*BellSouth*	1,296	44	3.4	n.a.	n.a.	1,252	32	2.6	n.a.	n.a.	1,248	27	2.2	*	13	*
Missouri	3,324	*SBC*	2,563	38	1.5	0	0.0	2,543	30	1.2	0	0.0	2,527	23	0.9	*	5	*
		Sprint	256	**	***	0	0.0	*	*	*	n.a.	n.a.	*	*	*	246	0	0.0
Montana	508	*U S WEST*	363	1	0.4	**	0.1	355	1	0.2	**	***	356	1	0.1	355	**	0.1
Nebraska	995	*U S WEST*	533	4	0.8	**	0.1	523	2	0.4	**	***	533	1	0.2	*	*	*
Nevada	1,207	*SBC*	354	3	1.0	0	0.0	331	2	0.6	0	0.0	340	2	0.5	*	3	*
		Sprint	879	8	0.9	0	0.0	*	6	*	n.a.	n.a.	*	*	*	*	5	*
New Hampshire	818	*Bell Atlantic*	795	20	2.5	n.a.	n.a.	792	7	0.9	n.a.	n.a.	771	9	1.1	*	*	*
New Jersey	6,201	*Bell Atlantic*	6,356	57	0.9	n.a.	n.a.	6,293	40	0.6	n.a.	n.a.	6,239	27	0.4	*	6	*
		Sprint	211	2	0.8	0	0.0	*	*	*	n.a.	n.a.	*	*	*	197	0	0.0
New Mexico	901	*U S WEST*	794	**	***	1	0.1	775	**	***	**	***	778	**	***	*	**	*
New York	12,715	*Bell Atlantic*	11,917	248	2.1	n.a.	n.a.	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	4,695	*BellSouth*	2,452	36	1.5	n.a.	n.a.	2,413	30	1.2	n.a.	n.a.	2,368	24	1.0	2,322	8	0.3
		GTE	343	1	0.4	0	0.0	330	1	0.2	0	0.0	334	1	0.2	333	**	0.1
		Sprint	1,420	15	1.1	0	0.0	1,407	11	0.8	n.a.	n.a.	1,399	7	0.5	*	*	*
North Dakota	402	*U S WEST*	251	3	1.4	11	4.5	248	3	1.0	9	3.8	248	10	3.9	253	2	0.9
Ohio	6,729	*Ameritech*	4,118	77	1.9	26	0.6	4,090	83	2.0	28	0.7	4,211	107	2.5	4,020	59	1.5
		GTE	881	**	***	0	0.0	860	**	***	0	0.0	860	**	***	846	0	0.0
		Sprint	616	**	0.1	0	0.0	*	*	*	n.a.	n.a.	*	*	*	594	0	0.0
Oklahoma	1,954	*SBC*	1,650	40	2.4	0	0.0	1,644	34	2.1	0	0.0	1,631	21	1.3	*	9	*
Oregon	2,022	*GTE*	476	**	0.1	0	0.0	466	**	***	0	0.0	463	**	***	462	0	0.0
		U S WEST	1,372	7	0.5	47	3.5	1,337	5	0.4	44	3.3	1,346	45	3.4	1,353	37	2.8

TABLE 9.2
LINES PROVIDED BY LARGE ILECS TO CLECS FOR RESALE

State	Total State Lines (1997 USF Loops in thousands) +	Company	As of December 31, 1998					As of September 30, 1998					As of June 30, 1998			As of December 31, 1997		
			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 #	Percent Other	Total Switched Lines (thousands)	Total Service Resale ## (thousands)	Percent TSR	Total Switched Lines (thousands)	Total Service Resale ## (thousands)	Percent TSR
Pennsylvania	7,951	*Bell Atlantic*	6,469	82	1.3 %	n.a.	n.a. %	6,432	91	1.4 %	n.a.	n.a. %	6,358	71	1.1 %	*	30	* %
		Frontier						*	*	*	0	0.0						
		GTE	653	1	0.1	0	0.0	640	**	***	0	0.0	642	**	***	635	0	0.0
		Sprint	385	1	0.1	0	0.0	*	*	*	n.a.	n.a.	376	**	0.1	*	*	*
Rhode Island	653	*Bell Atlantic*	663	7	1.1	n.a.	n.a.	653	3	0.4	n.a.	n.a.	650	4	0.6	*	*	*
South Carolina	2,147	*BellSouth*	1,471	58	3.9	n.a.	n.a.	1,448	50	3.4	n.a.	n.a.	1,416	29	2.1	1,399	13	0.9
		Sprint	99	1	1.3	0	0.0	99	1	1.0	n.a.	n.a.	99	1	0.9	*	*	*
South Dakota	406	*U S WEST*	276	10	3.7	8	3.1	272	7	2.6	6	2.3	271	12	4.3	268	4	1.4
Tennessee	3,271	*BellSouth*	2,684	36	1.3	n.a.	n.a.	2,641	26	1.0	n.a.	n.a.	2,622	23	0.9	2,614	14	0.6
		Sprint	255	2	0.7	0	0.0	252	1	0.5	n.a.	n.a.	251	1	0.3	*	*	*
Texas	12,006	*GTE*	1,968	19	1.0	0	0.0	1,933	19	1.0	0	0.0	1,893	13	0.7	1,861	10	0.6
		SBC	9,604	349	3.6	0	0.0	9,545	316	3.3	0	0.0	9,435	283	3.0	*	215	*
		Sprint	369	6	1.5	0	0.0	366	5	1.3	n.a.	n.a.	370	4	1.1	356	2	0.6
Utah	1,100	*U S WEST*	1,093	2	0.2	5	0.4	1,063	1	0.1	4	0.4	1,069	6	0.5	*	5	*
Vermont	394	*Bell Atlantic*	342	2	0.7	n.a.	n.a.	339	1	0.3	n.a.	n.a.	333	1	0.2	335	0	0.0
Virginia	4,381	*Bell Atlantic*	3,528	18	0.5	n.a.	n.a.	3,494	17	0.5	n.a.	n.a.	3,452	9	0.3	*	4	*
		GTE	591	0	0.0	0	0.0	581	0	0.0	0	0.0	574	**	***	563	**	***
		Sprint	401	1	0.2	0	0.0	*	**	*	n.a.	n.a.	*	**	*	385	0	0.0
Washington	3,500	*GTE*	861	1	0.1	0	0.0	842	1	0.1	0	0.0	833	**	***	829	**	***
		Sprint	85	0	0.0	0	0.0	84	0	0.0	n.a.	n.a.	84	0	0.0	82	0	0.0
		U S WEST	2,515	5	0.2	39	1.6	2,457	4	0.1	41	1.7	2,470	46	1.9	2,401	32	1.3
West Virginia	959	*Bell Atlantic*	831	**	***	n.a.	n.a.	828	0	0.0	n.a.	n.a.	820	0	0.0	803	0	0.0
Wisconsin	3,296	*Ameritech*	2,195	42	1.9	1	***	2,259	37	1.7	5	0.2	2,296	49	2.1	2,211	14	0.6
		GTE	501	0	0.0	0	0.0	494	**	***	0	0.0	490	**	***	480	**	***
Wyoming	284	*U S WEST*	242	2	0.8	6	2.4	238	2	0.8	3	1.2	241	1	0.5	*	*	*

TABLE 9.2
LINES PROVIDED BY LARGE ILECS TO CLECS FOR RESALE

State	Total State Lines (1997 USF Loops in thousands) +	Company	As of December 31, 1998					As of September 30, 1998					As of June 30, 1998			As of December 31, 1997		
			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 #	Percent Other	Total Switched Lines (thousands)	Total Service Resale ## (thousands)	Percent TSR	Total Switched Lines (thousands)	Total Service Resale ## (thousands)	Percent TSR
Total lines publicly reported +	172,452		164,614	2,738	1.7 %	324	0.2 %	159,030	2,484	1.6 %	296	0.2 %	159,500	2,443	n.m.	77,504	1,741	n.m.
Lines withheld to maintain confidentiality	0		0	0	n.m.	0	n.m.	3,552	108	n.m.	0	n.m.	2,310	5	n.m.	81,504	3	n.m.
Total lines +	172,452		164,614	2,738	1.7 %	324	0.2 %	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	21,054	450	2.1 %	54	0.3 %	20,981	474	2.3 %	61	0.3 %	21,665	552	2.5 %	20,589	396	1.9 %
(for states reported above)		Bell Atlantic	41,429	619	1.5	n.a.	n.a.	40,727	544	1.3	n.a.	n.a.	40,401	432	1.1	39,402	210	0.5
		BellSouth	24,104	543	2.3	n.a.	n.a.	23,640	462	2.0	n.a.	n.a.	23,347	376	1.6	23,154	216	0.9
		GTE	17,008	100	0.6	0	0.0	16,714	112	0.7	0	0.0	16,582	83	0.5	16,398	49	0.3
		SBC	36,778	823	2.2	11	***	36,173	747	2.1	15	***	36,168	676	1.9	35,612	550	1.5
		Sprint	7,545	54	0.7	0	0.0	7,451	42	0.6	n.a.	n.a.	7,406	33	0.4	7,182	17	0.2
		U S WEST	16,695	149	0.9	259	1.6	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.*

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 (1997 USF Loops)" are for all incumbent telephone companies.

TABLE 9.3

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

State	Company	Switched Lines as of 12/31/98 (thousands)	As of December 31, 1998					As of September 30, 1998					As of June 30, 1998				
			TSR Lines (thousands)			Percent		TSR Lines (thousands)			Percent		TSR Lines @ (thousands)			Percent	
			Res.	Other	Total	Res.	Other	Res.	Other	Total	Res.	Other	Res.	Other	Total	Res.	Other
Alabama	*BellSouth*	1,947	19	19	39	50 %	50 %	17	17	34	50 %	50 %	15	10	25	61 %	39 %
Alaska																	
Arizona	*U S WEST*	2,720	8	3	11	75	25	4	1	6	80	20	2	2	4	57	43
Arkansas	*SBC*	974	15	3	18	83	17	14	2	17	86	14	13	1	15	91	9
California	*GTE*	4,551	29	11	40	72	28	40	12	51	77	23	37	3	39	93	7
	SBC	18,110	126	134	261	48	52	122	130	252	48	52	128	123	251	51	49
Colorado	*U S WEST*	2,650	4	25	29	13	87	3	19	22	12	88	2	14	16	13	87
Connecticut	*SBC (SNET)*	2,148	20	17	36	54	46	20	14	34	60	40	21	10	31	67	33
Delaware	*Bell Atlantic*	569	8	3	10	75	25	8	2	10	78	22	6	1	7	80	20
District of Columbia	*Bell Atlantic*	945	2	9	11	19	81	3	8	11	26	74	1	5	7	20	80
Florida	*BellSouth*	6,487	40	72	112	36	64	38	64	103	37	63	38	57	95	40	60
	GTE	2,297	19	14	32	58	42	23	14	37	62	38	16	12	28	58	42
	Sprint	2,032	8	11	19	40	60	6	9	15	42	58	6	9	15	42	58
Georgia	*BellSouth*	4,143	63	42	105	60	40	58	40	99	59	41	58	31	89	65	35
Hawaii	*GTE*	717	**	**	**	81	19	**	**	**	46	54	**	**	**	50	50
Idaho	*U S WEST*	525	**	**	**	65	35	**	**	**	83	17	**	**	**	90	10
Illinois	*Ameritech*	7,078	84	112	196	43	57	87	118	205	43	57	88	112	201	44	56
	GTE	914	0	1	1	0	100	**	1	1	5	95	**	**	**	5	95
Indiana	*Ameritech*	2,225	5	11	16	30	70	3	9	12	22	78	1	4	5	18	82
	GTE	959	**	2	2	19	81	**	1	1	18	82	**	**	**	67	33
	Sprint	241	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Iowa	*U S WEST*	1,077	1	7	8	13	87	**	3	3	3	97	**	99	99	0	100
Kansas	*SBC*	1,374	32	44	76	42	58	27	35	62	43	57	23	27	50	46	54
	Sprint	140	1	**	1	100	0	*	*	*	*	*	**	**	**	98	2
Kentucky	*BellSouth*	1,207	13	19	31	40	60	12	16	28	43	57	8	12	20	42	58
	GTE	543	**	2	2	23	77	**	1	1	23	77	**	1	1	9	91

TABLE 9.3

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

State	Company	Switched Lines as of 12/31/98 (thousands)	As of December 31, 1998					As of September 30, 1998					As of June 30, 1998				
			TSR Lines (thousands)			Percent		TSR Lines (thousands)			Percent		TSR Lines @ (thousands)			Percent	
			Res.	Other	Total	Res.	Other	Res.	Other	Total	Res.	Other	Res.	Other	Total	Res.	Other
Louisiana	*BellSouth*	2,418	53	29	82	65 %	35 %	35	26	61	58 %	42 %	29	15	44	67 %	33 %
Maine	*Bell Atlantic*	688	**	5	5	1	99	**	1	1	2	98	**	2	2	1	99
Maryland	*Bell Atlantic*	3,704	14	13	27	53	47	11	10	22	52	48	4	7	11	40	60
Massachusetts	*Bell Atlantic*	4,622	21	109	130	16	84	4	92	96	4	96	10	75	85	12	88
Michigan	*Ameritech*	5,439	79	39	119	67	33	94	43	137	68	32	112	42	155	73	27
	GTE	753	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minnesota	*Frontier*							*	*	*	*	*					
	Sprint	156	0	**	**	0	100	0	0	0	0	0	0	0	0	0	0
	U S WEST	2,284	12	53	65	18	82	8	43	51	16	84	3	52	55	6	94
Mississippi	*BellSouth*	1,296	37	7	44	83	17	27	6	32	83	17	23	4	27	86	14
Missouri	*SBC*	2,563	19	19	38	50	50	16	14	30	54	46	14	9	23	62	38
	Sprint	256	**	**	**	98	2	*	*	*	*	*	*	*	*	*	*
Montana	*U S WEST*	363	1	**	1	65	35	**	**	1	52	48	**	**	1	36	64
Nebraska	*U S WEST*	533	2	2	4	51	49	1	2	2	26	74	**	1	1	1	99
Nevada	*SBC*	354	1	3	3	16	84	**	2	2	16	84	**	1	2	19	81
	Sprint	879	2	6	8	30	70	2	4	6	37	63	*	*	*	*	*
New Hampshire	*Bell Atlantic*	795	1	19	20	5	95	**	7	7	3	97	**	8	9	3	97
New Jersey	*Bell Atlantic*	6,356	29	28	57	51	49	23	18	40	56	44	16	11	27	60	40
	Sprint	211	2	**	2	100	0	*	*	*	*	*	*	*	*	*	*
New Mexico	*U S WEST*	794	**	**	**	2	98	**	**	**	3	97	**	**	**	2	98
New York	*Bell Atlantic*	11,917	59	189	248	24	76	54	190	244	22	78	33	166	199	16	84
	Frontier							*	*	*	*	*					
North Carolina	*BellSouth*	2,452	11	25	36	30	70	9	21	30	29	71	6	18	24	24	76
	GTE	343	**	1	1	1	99	**	1	1	11	89	**	**	1	12	88
	Sprint	1,420	7	8	15	47	53	6	6	11	48	52	4	3	7	54	46
North Dakota	*U S WEST*	251	**	3	3	11	89	**	2	3	8	92	**	10	10	1	99

TABLE 9.3

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

State	Company	Switched Lines as of 12/31/98 (thousands)	As of December 31, 1998					As of September 30, 1998					As of June 30, 1998				
			TSR Lines (thousands)			Percent		TSR Lines (thousands)			Percent		TSR Lines @ (thousands)			Percent	
			Res.	Other	Total	Res.	Other	Res.	Other	Total	Res.	Other	Res.	Other	Total	Res.	Other
Ohio	*Ameritech*	4,118	6	71	77	7 %	93 %	6	77	83	7 %	93 %	1	75	76	2 %	98 %
	GTE	881	0	**	**	0	100	0	**	**	0	100	**	**	**	17	83
	Sprint	616	**	**	**	18	82	*	*	*	*	*	*	*	*	*	*
Oklahoma	*SBC*	1,650	28	12	40	69	31	25	9	34	74	26	17	4	21	80	20
Oregon	*GTE*	476	**	**	**	83	17	**	**	**	93	7	**	**	**	57	43
	U S WEST	1,372	4	3	7	58	42	3	2	5	62	38	2	44	45	4	96
Pennsylvania	*Bell Atlantic*	6,469	28	54	82	35	65	34	57	91	38	62	30	41	71	43	57
	Frontier							*	*	*	*	*					
	GTE	653	**	**	1	48	52	**	**	**	73	27	**	**	**	25	75
	Sprint	385	**	**	1	46	54	*	*	*	*	*	**	**	**	76	24
Rhode Island	*Bell Atlantic*	663	1	7	7	10	90	**	3	3	2	98	**	4	4	1	99
South Carolina	*BellSouth*	1,471	34	24	58	59	41	30	19	50	61	39	16	13	29	54	46
	Sprint	99	1	**	1	100	0	1	**	1	100	0	1	**	1	100	0
South Dakota	*U S WEST*	276	2	8	10	20	80	**	7	7	2	98	**	12	12	0	100
Tennessee	*BellSouth*	2,684	26	10	36	73	27	18	8	26	69	31	17	6	23	74	26
	Sprint	255	1	1	2	42	58	1	1	1	38	62	**	1	1	18	82
Texas	*GTE*	1,968	15	5	19	76	24	17	2	19	87	13	12	1	13	94	6
	SBC	9,604	203	146	349	58	42	197	119	316	62	38	195	88	283	69	31
	Sprint	369	4	2	6	72	28	4	1	5	78	22	3	1	4	85	15
Utah	*U S WEST*	1,093	1	1	2	56	44	1	1	1	60	40	1	5	6	15	85
Vermont	*Bell Atlantic*	342	**	2	2	0	100	**	1	1	0	100	**	1	1	0	100
Virginia	*Bell Atlantic*	3,528	4	15	18	20	80	3	14	17	20	80	2	7	9	25	75
	GTE	591	0	0	0	0	0	0	0	0	0	0	**	**	**	37	63
	Sprint	401	**	1	1	1	99	**	**	**	1	99	**	**	**	6	94
Washington	*GTE*	861	1	**	1	78	22	1	**	1	87	13	**	**	**	58	42
	Sprint	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	U S WEST	2,515	2	3	5	35	65	1	2	4	38	62	1	45	46	2	98
West Virginia	*Bell Atlantic*	831	**	**	**	16	84	0	0	0	0	0	0	0	0	0	0

TABLE 9.3

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

State	Company	Switched Lines as of 12/31/98 (thousands)	As of December 31, 1998					As of September 30, 1998					As of June 30, 1998				
			TSR Lines (thousands)			Percent		TSR Lines (thousands)			Percent		TSR Lines @ (thousands)			Percent	
			Res.	Other	Total	Res.	Other	Res.	Other	Total	Res.	Other	Res.	Other	Total	Res.	Other
Wisconsin	*Ameritech*	2,195	6	36	42	13 %	87 %	4	33	37	12 %	88 %	3	26	30	11 %	89 %
	GTE	501	0	0	0	0	0	**	**	**	50	50	**	**	**	92	8
Wyoming	*U S WEST*	242	1	1	2	29	71	**	2	2	7	93	0	1	1	0	100
Total lines publicly reported +		164,614	1,215	1,523	2,738	44 %	56 %	1,123	1,362	2,484	45 %	55 %	1,025	1,333	2,357	43 %	57 %
Lines withheld to maintain confidentiality		0	0	0	0	n.a.	n.a.	11	97	108	10 %	90 %	2	3	5	38 %	62 %
Total lines +		164,614	1,215	1,523	2,738	44 %	56 %	1,134	1,459	2,593	44 %	56 %	1,027	1,336	2,363	43 %	57 %
Holding Company Summary	Ameritech		179	270	450	40 %	60 %	193	281	474	41 %	59 %	206	260	467	44 %	56 %
(for states reported above)	Bell Atlantic		167	452	619	27	73	141	403	544	26	74	104	328	432	24	76
	BellSouth		296	247	543	55	45	244	217	462	53	47	211	166	376	56	44
	GTE		64	36	100	64	36	81	31	112	72	28	66	17	83	80	20
	SBC		444	379	823	54	46	422	325	747	57	43	411	265	676	61	39
	Sprint		26	29	54	47	53	21	21	42	49	51	17	16	33	51	49
	U S WEST @		38	111	149	26	74	22	83	106	21	79	12	284	296	4	96

Source: Industry Analysis Division, *Local Competition: August 1999.*

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 9.4
LINES PROVIDED BY LARGE ILECS TO CLECS AS UNE LOOPS

State	Total State Lines (1997 USF Loops in thousands) +	Company	As of December 31, 1998			As of September 30, 1998			As of June 30, 1998			As of December 31, 1997		
			Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE	Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE	Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE	Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE
Alabama	2,405	*BellSouth*	1,947	2	0.1 %	1,892	1	0.1 %	1,881	1	*** %	*	*	* %
Alaska	398													
Arizona	2,732	*U S WEST*	2,720	1	0.1	2,619	1	0.1	2,615	1	***	*	*	*
Arkansas	1,369	*SBC*	974	3	0.3	967	2	0.2	958	**	***	*	*	*
California	21,483	*GTE*	4,551	6	0.1	4,498	2	***	4,443	1	***	4,394	**	***
		SBC	18,110	47	0.3	17,646	34	0.2	17,792	n.m.	n.m.	*	*	*
Colorado	2,644	*U S WEST*	2,650	**	***	2,556	**	***	2,583	**	***	2,554	0	0.0
Connecticut	2,152	*SNET*	2,148	3	0.1	2,133	3	0.1	2,137	3	0.1	2,120	2	0.1
Delaware	532	*Bell Atlantic*	569	3	0.5	565	2	0.3	557	1	0.1	*	*	*
District of Columbia	920	*Bell Atlantic*	945	1	0.1	946	**	***	935	**	***	*	*	*
Florida	10,491	*BellSouth*	6,487	4	0.1	6,376	3	***	6,297	3	***	6,231	2	***
		GTE	2,297	**	***	2,264	0	0.0	2,240	0	0.0	2,232	**	***
		Sprint	2,032	**	***	1,994	0	0.0	1,983	0	0.0	1,931	0	0.0
Georgia	4,770	*BellSouth*	4,143	9	0.2	4,089	5	0.1	4,028	2	***	4,003	1	***
Hawaii	708	*GTE*	717	**	***	703	0	0.0	712	0	0.0	711	**	***
Idaho	681	*U S WEST*	525	0	0.0	500	0	0.0	470	0	0.0	493	0	0.0
Illinois	7,981	*Ameritech*	7,078	20	0.3	7,022	16	0.2	7,313	14	0.2	6,851	13	0.2
		GTE	914	0	0.0	901	0	0.0	895	0	0.0	882	0	0.0
Indiana	3,471	*Ameritech*	2,225	**	***	2,207	**	***	2,236	0	0.0	2,167	0	0.0
		GTE	959	0	0.0	930	0	0.0	932	0	0.0	922	0	0.0
		Sprint	241	0	0.0	240	0	0.0	240	0	0.0	234	0	0.0
Iowa	1,589	*U S WEST*	1,077	**	***	1,057	0	0.0	1,060	0	0.0	1,049	0	0.0
Kansas	1,585	*SBC*	1,374	**	***	1,365	**	***	1,348	**	***	*	*	*
		Sprint	140	0	0.0	*	0	0.0	140	0	0.0	*	0	0.0
Kentucky	2,064	*BellSouth*	1,207	1	0.1	1,193	1	***	1,184	**	***	*	*	*
		GTE	543	**	***	528	**	***	531	0	0.0	524	0	0.0

TABLE 9.4
LINES PROVIDED BY LARGE ILECS TO CLECS AS UNE LOOPS

State	Total State Lines (1997 USF Loops in thousands) +	Company	As of December 31, 1998			As of September 30, 1998			As of June 30, 1998			As of December 31, 1997		
			Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE	Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE	Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE	Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE
Louisiana	2,435	*BellSouth*	2,418	1	*** %	2,336	1	*** %	2,303	**	*** %	2,256	0	0.0 %
Maine	808	*Bell Atlantic*	688	**	***	678	**	***	677	**	***	681	0	0.0
Maryland	3,494	*Bell Atlantic*	3,704	2	***	3,677	2	0.1	3,638	2	0.1	*	*	*
Massachusetts	4,464	*Bell Atlantic*	4,622	3	0.1	4,434	3	0.1	4,396	3	0.1	4,517	2	***
Michigan	6,258	*Ameritech*	5,439	48	0.9	5,403	43	0.8	5,608	38	0.7	5,341	25	0.5
		GTE	753	0	0.0	744	0	0.0	739	0	0.0	725	0	0.0
Minnesota	2,878	*Frontier*				*	0	0.0						
		Sprint	156	0	0.0	155	0	0.0	153	0	0.0	148	0	0.0
		U S WEST	2,284	2	0.1	2,199	1	***	2,202	**	***	2,199	0	0.0
Mississippi	1,321	*BellSouth*	1,296	2	0.1	1,252	1	0.1	1,248	1	0.1	*	*	*
Missouri	3,324	*SBC*	2,563	2	0.1	2,543	2	0.1	2,527	2	0.1	*	*	*
		Sprint	256	0	0.0	*	0	0.0	*	0	0.0	246	0	0.0
Montana	508	*U S WEST*	363	**	***	355	0	0.0	356	0	0.0	355	0	0.0
Nebraska	995	*U S WEST*	533	**	0.1	523	**	***	533	0	0.0	*	0	0.0
Nevada	1,207	*SBC*	354	4	1.2	331	4	1.2	340	4	1.1	*	*	*
		Sprint	879	29	3.3	*	*	*	*	*	*	*	*	*
New Hampshire	818	*Bell Atlantic*	795	**	***	792	**	***	771	**	***	*	0	0.0
New Jersey	6,201	*Bell Atlantic*	6,356	1	***	6,293	**	***	6,239	**	***	*	*	*
		Sprint	211	0	0.0	*	0	0.0	*	0	0.0	197	0	0.0
New Mexico	901	*U S WEST*	794	2	0.3	775	2	0.3	778	2	0.2	*	*	*
New York	12,715	*Bell Atlantic*	11,917	49	0.4	11,595	44	0.2	11,573	31	0.3	*	*	*
		Frontier				*	0	0.0				540	0	0.0
North Carolina	4,695	*BellSouth*	2,452	2	0.1	2,413	1	***	2,368	0	0.0	2,322	0	0.0
		GTE	343	**	***	330	0	0.0	334	0	0.0	333	**	***
		Sprint	1,420	0	0.0	1,407	0	0.0	1,399	0	0.0	*	0	0.0

TABLE 9.4
LINES PROVIDED BY LARGE ILECS TO CLECS AS UNE LOOPS

State	Total State Lines (1997 USF Loops in thousands) +	Company	As of December 31, 1998			As of September 30, 1998			As of June 30, 1998			As of December 31, 1997		
			Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE	Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE	Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE	Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE
North Dakota	402	*U S WEST*	251	**	0.1 %	248	0	0.0 %	248	0	0.0 %	253	0	0.0 %
Ohio	6,729	*Ameritech*	4,118	24	0.6	4,090	19	0.5	4,211	16	0.4	4,020	7	0.2
		GTE	881	0	0.0	860	0	0.0	860	0	0.0	846	0	0.0
		Sprint	616	0	0.0	*	0	0.0	*	0	0.0	594	0	0.0
Oklahoma	1,954	*SBC*	1,650	2	0.1	1,644	2	0.1	1,631	1	0.1	*	*	*
Oregon	2,022	*GTE*	476	1	0.2	466	0	0.0	463	0	0.0	462	**	***
		U S WEST	1,372	**	***	1,337	**	***	1,346	**	***	1,353	0	0.0
Pennsylvania	7,951	*Bell Atlantic*	6,469	30	0.5	6,432	26	0.4	6,358	20	0.3	*	*	*
		Frontier				*	0	0.0						
		GTE	653	**	***	640	**	***	642	**	***	635	0	0.0
		Sprint	385	0	0.0	*	0	0.0	376	0	0.0	*	0	0.0
Rhode Island	653	*Bell Atlantic*	663	1	0.2	653	2	0.3	650	2	0.3	*	*	*
South Carolina	2,147	*BellSouth*	1,471	1	***	1,448	**	***	1,416	**	***	1,399	0	0.0
		Sprint	99	0	0.0	99	0	0.0	99	0	0.0	*	0	0.0
South Dakota	406	*U S WEST*	276	0	0.0	272	0	0.0	271	0	0.0	268	0	0.0
Tennessee	3,271	*BellSouth*	2,684	21	0.8	2,641	17	0.6	2,622	13	0.5	2,614	5	0.2
		Sprint	255	0	0.0	252	0	0.0	251	0	0.0	*	0	0.0
Texas	12,006	*GTE*	1,968	16	0.8	1,933	12	0.6	1,893	8	0.4	1,861	7	0.4
		SBC	9,604	7	0.1	9,545	3	***	9,435	**	***	*	*	*
		Sprint	369	0	0.0	366	0	0.0	370	0	0.0	356	0	0.0
Utah	1,100	*U S WEST*	1,093	1	0.1	1,063	1	0.1	1,069	**	***	*	*	*
Vermont	394	*Bell Atlantic*	342	**	***	339	0	0.0	333	0	0.0	335	0	0.0
Virginia	4,381	*Bell Atlantic*	3,528	1	***	3,494	1	***	3,452	1	***	*	*	*
		GTE	591	0	0.0	581	0	0.0	574	0	0.0	563	0	0.0
		Sprint	401	1	0.1	*	*	*	*	*	*	385	0	0.0
Washington	3,500	*GTE*	861	0	0.0	842	0	0.0	833	0	0.0	829	0	0.0
		Sprint	85	0	0.0	84	0	0.0	84	0	0.0	82	0	0.0
		U S WEST	2,515	**	***	2,457	**	***	2,470	**	***	2,401	*	*
West Virginia	959	*Bell Atlantic*	831	0	0.0	828	0	0.0	820	0	0.0	803	0	0.0

TABLE 9.4
LINES PROVIDED BY LARGE ILECS TO CLECS AS UNE LOOPS

State	Total State Lines (1997 USF Loops in thousands) +	Company	As of December 31, 1998			As of September 30, 1998			As of June 30, 1998			As of December 31, 1997		
			Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE	Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE	Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE	Total Switched Lines (thousands)	UNE Loops (thousands)	Percent UNE
Wisconsin	3,296	*Ameritech*	2,195	7	0.3 %	2,259	3	0.1 %	2,296	1	*** %	2,211	**	*** %
		GTE	501	**	0.1	494	**	0.1	490	**	0.1	480	**	***
Wyoming	284	*U S WEST*	242	0	0.0	238	0	0.0	241	0	0.0	*	0	0.0
Total lines publicly reported	172,452		164,614	361	0.2 %	159,030	258	n.m.	159,500	224	n.m.	77,504	65	n.m.
Lines withheld to maintain confidentiality	0		0	0	n.m.	3,552	24	n.m.	2,310	20	n.m.	81,504	68	n.m.
Total lines	172,452		164,614	361	0.2	162,581	282	0.2	161,810	244	0.2	159,008	133	0.1
Holding Company Summary		Ameritech	21,054	100	0.5 %	20,981	80	0.4 %	21,665	69	0.3 %	20,589	45	0.2 %
(for states reported above)		Bell Atlantic	41,429	91	0.2	40,727	81	0.2	40,401	61	0.1	39,402	38	0.1
		BellSouth	24,104	41	0.2	23,640	29	0.1	23,347	20	0.1	23,154	9	***
		GTE	17,008	23	0.1	16,714	14	0.1	16,582	9	0.1	16,398	7	***
		SBC	36,778	67	0.2	36,173	49	0.1	36,168	n.m.	n.m.	35,612	21	0.1
		Sprint	7,545	30	0.4	7,451	*	*	7,406	*	*	7,182	11	0.2
		U S WEST	16,695	8	***	16,198	5	***	16,242	3	***	16,130	1	***

Source: Industry Analysis Division, *Local Competition: August 1999.*

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 (1997 USF Loops)" are for all incumbent telephone companies; n.m. Not meaningful (SBC total switch lines as of 6/30/98 includes a count of UNE loops that SBC confirms is too high, but for which the company has not been able to provide a corrected value).

TABLE 9.5
PERCENT OF ILEC LINES SERVED BY SWITCHING CENTERS
WHERE NEW ENTRANTS HAVE COLLOCATION ARRANGEMENTS

State	Total State Lines (1997 USF Loops in thousands) +	Company	As of December 31, 1998 Residential Lines	As of December 31, 1998 Other Lines	As of December 31, 1998 Total Lines	As of September 30, 1998 Residential Lines	As of September 30, 1998 Other Lines	As of September 30, 1998 Total Lines	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	2,405	*BellSouth*	30.4 %	45.1 %	34.7 %	28.2 %	43.0 %	32.3 %	12.4 %	24.1 %	15.7 %	12.3 %	25.5 %	16.1 %
Alaska	398													
Arizona	2,732	*U S WEST*	53.3	75.1	59.6	51.3	72.1	57.1	17.0	30.7	20.9	48.5	68.6	54.4
Arkansas	1,369	*SBC*	12.0	20.8	14.7	9.6	18.6	12.4	9.6	19.0	12.5	9.6	20.7	12.9
California	21,483	*GTE*	49.8	55.7	51.8	41.6	52.3	45.0	21.3	30.7	24.4	16.1	26.3	20.3
		SBC	74.0	82.3	77.3	59.4	71.6	64.1	46.8	63.7	53.5	32.5	48.5	37.3
Colorado	2,644	*U S WEST*	55.6	66.3	59.0	55.8	65.5	58.7	6.0	15.0	8.8	25.1	41.9	30.6
Connecticut	2,152	*SNET*	17.4	32.6	22.8	17.6	33.3	23.5						
Delaware	532	*Bell Atlantic*	80.0	91.9	84.3	66.6	83.0	72.6	66.6	83.0	72.6	63.1	81.6	69.9
District of Columbia	920	*Bell Atlantic*	57.6	85.1	76.4	8.1	68.4	49.3	8.1	69.0	49.6	8.2	70.1	49.9
Florida	10,491	*BellSouth*	34.7	50.8	39.7	28.8	44.8	33.7	26.1	41.6	30.8	24.6	42.5	30.0
		GTE	14.5	38.8	21.4	3.0	19.0	7.3	5.7	24.7	11.0	13.5	44.0	26.9
		Sprint	21.2	47.2	29.0	21.6	33.1	25.0	18.7	39.4	24.9	11.2	18.5	13.3
Georgia	4,770	*BellSouth*	43.1	57.8	48.3	39.7	55.5	45.3	26.0	43.8	32.3	19.5	43.1	27.9
Hawaii	708	*GTE*	24.4	44.6	31.4	23.6	36.9	28.1	23.2	45.2	31.2	21.2	43.5	31.3
Idaho	681	*U S WEST*	26.9	36.5	29.6	27.6	37.3	30.3	24.9	37.1	28.4	23.0	37.1	26.9
Illinois	7,981	*Ameritech*	70.6	83.2	75.7	58.0	73.2	64.2	49.1	66.3	56.4	41.2	58.3	48.2
		GTE	4.7	7.6	5.5	13.4	31.6	17.9	3.0	4.7	3.5	4.8	16.2	8.7
Indiana	3,471	*Ameritech*	41.1	57.0	46.8	41.2	57.1	46.8	20.4	36.7	26.4	20.4	36.7	26.4
		GTE	17.2	27.2	20.0	9.1	18.9	11.7	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	0.0	0.0	0.0	0.0	0.0	0.0
Iowa	1,589	*U S WEST*	43.4	56.9	47.6	43.4	55.9	47.2	3.3	7.5	4.6	19.0	28.9	22.1
Kansas	1,585	*SBC*	22.6	29.5	24.9	22.7	29.5	24.9	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	0.0	0.0	0.0	0.0	0.0	0.0

TABLE 9.5
PERCENT OF ILEC LINES SERVED BY SWITCHING CENTERS
WHERE NEW ENTRANTS HAVE COLLOCATION ARRANGEMENTS

State	Total State Lines (1997 USF Loops in thousands) +	Company	As of December 31, 1998 Residential Lines	As of December 31, 1998 Other Lines	As of December 31, 1998 Total Lines	As of September 30, 1998 Residential Lines	As of September 30, 1998 Other Lines	As of September 30, 1998 Total Lines	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
Kentucky	2,064	*BellSouth*	20.9 %	34.0 %	24.6 %	20.9 %	34.9 %	24.8 %	21.0 %	35.2 %	24.9 %	21.0 %	37.3 %	25.5 %
		GTE	6.0	20.8	10.0	8.7	13.8	10.0	6.0	22.8	10.7	6.1	33.9	16.4
Louisiana	2,435	*BellSouth*	26.3	40.3	30.6	10.7	28.8	16.0	5.0	20.1	9.4	3.5	15.9	7.1
Maine	808	*Bell Atlantic*	9.1	18.3	11.7	9.2	18.7	11.8	9.2	18.9	11.8	5.2	11.9	7.1
Maryland	3,494	*Bell Atlantic*	33.1	49.1	38.9	21.1	37.9	27.2	20.8	35.9	26.3	18.6	35.9	24.8
Massachusetts	4,464	*Bell Atlantic*	49.2	61.3	53.7	28.7	49.1	35.8	26.6	44.9	32.9	25.3	47.4	33.4
Michigan	6,258	*Ameritech*	49.4	63.1	54.4	47.8	61.6	52.7	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	0.0	0.0	0.0	0.0	0.0	0.0
Minnesota	2,878	*Frontier*				*	*	*						
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		U S WEST	41.7	64.1	49.4	39.8	61.4	46.9	28.6	51.4	36.2	27.8	51.9	36.0
Mississippi	1,321	*BellSouth*	19.2	30.7	22.7	19.2	33.7	23.3	13.7	26.0	17.2	10.2	21.4	13.4
Missouri	3,324	*SBC*	27.9	49.7	35.0	27.9	50.0	35.1	13.7	31.7	19.6	14.1	34.8	20.5
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0	*	*	*	0.0	0.0	0.0
Montana	508	*U S WEST*	18.0	26.1	20.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nebraska	995	*U S WEST*	42.6	61.3	48.4	37.4	57.0	43.2	23.3	47.1	30.6	32.3	53.4	38.8
Nevada	1,207	*SBC*	37.7	57.3	44.9	4.9	3.0	4.3	38.2	58.2	45.6	38.4	55.1	42.4
		Sprint	99.2	98.8	99.0	99.6	100.0	99.7	*	*	*	99.1	99.5	99.2
New Hampshire	818	*Bell Atlantic*	35.1	52.0	40.7	35.4	52.2	41.1	35.3	56.0	41.9	31.8	49.2	37.6
New Jersey	6,201	*Bell Atlantic*	31.3	44.7	36.1	23.5	36.0	28.0	18.9	31.4	23.4	17.2	29.6	21.6
		Sprint	0.0	0.0	0.0	0.0	0.0	0.0	*	*	*	0.0	0.0	0.0
New Mexico	901	*U S WEST*	32.0	42.1	34.7	32.1	41.5	34.6	29.2	41.2	32.4	29.5	42.9	33.2
New York	12,715	*Bell Atlantic*	55.9	67.4	60.1	45.0	63.0	51.4	18.7	48.6	29.5	18.7	48.2	28.4
		Frontier				*	*	*				*	*	*
North Carolina	4,695	*BellSouth*	41.5	61.0	48.3	38.9	59.2	45.9	35.8	57.7	43.2	23.3	44.2	30.4
		GTE	11.3	36.1	19.5	24.7	30.8	26.6	11.3	39.1	20.7	7.3	25.2	18.0
		Sprint	2.6	6.9	3.8	2.7	6.8	3.8	2.7	6.7	3.7	4.6	7.5	5.4

TABLE 9.5
PERCENT OF ILEC LINES SERVED BY SWITCHING CENTERS
WHERE NEW ENTRANTS HAVE COLLOCATION ARRANGEMENTS

State	Total State Lines (1997 USF Loops in thousands) +	Company	As of December 31, 1998 Residential Lines	As of December 31, 1998 Other Lines	As of December 31, 1998 Total Lines	As of September 30, 1998 Residential Lines	As of September 30, 1998 Other Lines	As of September 30, 1998 Total Lines	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
North Dakota	402	*U S WEST*	49.1 %	55.4 %	51.0 %	49.1 %	55.9 %	51.1 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Ohio	6,729	*Ameritech*	49.8	66.0	55.1	41.9	58.9	47.5	41.9	59.8	48.1	40.0	65.4	48.6
		GTE	1.6	3.5	2.0	2.3	1.8	2.2	0.0	0.0	0.0	1.5	4.8	2.6
		Sprint	3.3	4.5	3.6	3.2	4.5	3.5	*	*	*	0.0	0.0	0.0
Oklahoma	1,954	*SBC*	31.1	41.7	34.4	29.3	39.8	32.6	25.4	41.1	30.3	21.7	37.9	26.6
Oregon	2,022	*GTE*	28.3	33.4	29.8	2.5	1.9	2.3	0.0	0.0	0.0	9.1	23.4	15.3
		U S WEST	37.4	55.4	43.1	37.5	55.2	42.9	17.3	34.8	22.9	25.4	42.6	30.9
Pennsylvania	7,951	*Bell Atlantic*	44.2	63.1	50.9	39.2	59.1	46.2	39.0	59.1	46.1	39.3	59.4	46.4
		Frontier				*	*	*						
		GTE	5.8	12.3	7.5	4.9	4.9	4.9	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	0.0	0.0	0.0	0.0	0.0	0.0
Rhode Island	653	*Bell Atlantic*	44.1	52.7	46.9	44.7	54.2	47.5	44.6	51.9	46.7	31.8	47.0	36.7
South Carolina	2,147	*BellSouth*	13.1	29.2	18.1	13.2	29.6	18.2	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	0.0	0.0	0.0	0.0	0.0	0.0
South Dakota	406	*U S WEST*	21.2	26.5	22.9	21.1	25.5	22.6	0.0	0.0	0.0	21.3	26.2	22.9
Tennessee	3,271	*BellSouth*	41.6	57.5	46.2	38.5	56.2	43.5	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	0.0	0.0	0.0	0.0	0.0	0.0
Texas	12,006	*GTE*	13.1	26.3	17.2	13.6	32.9	19.4	11.3	26.0	15.9	11.5	29.4	19.2
		SBC	40.1	58.3	46.5	27.8	44.6	33.8	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	0.0	0.0	0.0	0.0	0.0	0.0
Utah	1,100	*U S WEST*	45.5	66.6	52.1	45.7	66.5	52.1	31.8	48.5	37.1	52.7	70.2	58.3
Vermont	394	*Bell Atlantic*	26.2	38.8	30.3	26.0	38.8	30.0	26.1	39.7	30.4	25.1	39.2	29.7
Virginia	4,381	*Bell Atlantic*	37.0	54.8	43.8	20.9	33.0	25.6	18.0	30.6	22.8	17.9	30.5	22.7
		GTE	4.1	8.3	5.2	6.1	9.9	7.1	4.0	8.7	5.2	4.1	10.0	6.4
		Sprint	14.3	22.0	16.4	12.3	19.6	14.2	*	*	*	12.2	20.0	14.2
Washington	3,500	*GTE*	21.3	30.2	23.8	4.8	8.8	5.9	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	0.0	0.0	0.0	0.0	0.0	0.0
		U S WEST	63.2	76.3	67.3	63.2	76.1	67.1	18.8	37.6	24.7	29.6	57.3	38.1

TABLE 9.5
PERCENT OF ILEC LINES SERVED BY SWITCHING CENTERS
WHERE NEW ENTRANTS HAVE COLLOCATION ARRANGEMENTS

State	Total State Lines (1997 USF Loops in thousands) +	Company	As of December 31, 1998 Residential Lines	As of December 31, 1998 Other Lines	As of December 31, 1998 Total Lines	As of September 30, 1998 Residential Lines	As of September 30, 1998 Other Lines	As of September 30, 1998 Total Lines	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
West Virginia	959	*Bell Atlantic*	4.0 %	13.8 %	6.7 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Wisconsin	3,296	*Ameritech*	87.7	83.4	86.2	56.0	67.8	60.1	39.8	50.9	43.9	36.8	48.2	40.8
		GTE	2.1	2.9	2.3	1.1	2.1	1.3	0.2	0.8	0.3	0.0	0.0	0.0
Wyoming	284	*U S WEST*	16.2	18.3	16.9	0.0	0.0	0.0	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)			42.2 %	58.3 %	47.7 %	34.8 %	51.5 %	40.4 %	25.3 %	44.1 %	31.7 %	23.3 %	41.4 %	29.5 %

Holding Company Summary	Ameritech	59.4 %	72.4 %	64.2 %	50.0 %	65.6 %	55.7 %	42.3 %	59.0 %	48.6 %	38.7 %	57.0 %	45.6 %
(for states reported above)	Bell Atlantic	43.2	58.9	49.0	32.6	50.2	39.0	23.8	44.7	31.4	22.8	44.4	30.4
	BellSouth	33.4	49.4	38.5	28.9	46.2	34.2	23.1	40.1	28.4	19.6	37.9	25.3
	GTE	21.1	33.9	24.9	16.4	28.9	19.9	9.7	21.2	12.9	10.5	26.8	17.1
	SBC @@	51.5	66.3	57.0	41.0	56.4	46.6	33.4	52.2	40.4	22.9	39.1	28.0
	Sprint	17.6	29.3	20.9	17.5	25.3	19.7	16.6	26.5	19.4	14.7	21.1	16.5
	U S WEST	47.0	62.9	52.0	45.7	60.8	50.2	17.1	31.2	21.4	30.4	48.7	36.1

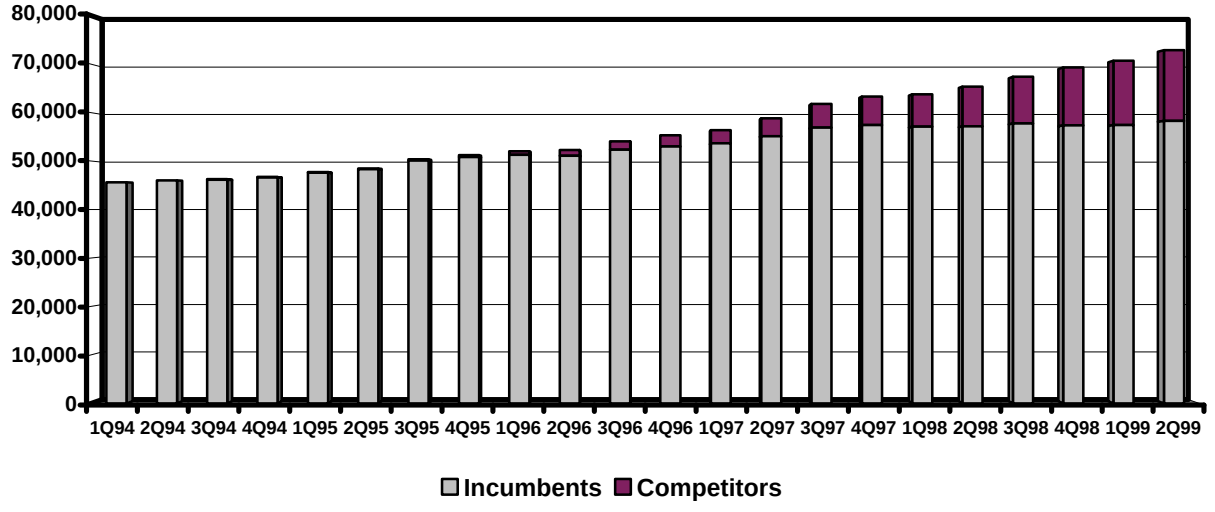
Source: Industry Analysis Division, *Local Competition: August 1999.*

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 (1997 USF Loops)" are for all incumbent telephone companies: @@ SBC summaries as of 6/30/98 and 12/31/97 exclude SNET, for which information is not available.

TABLE 9.6
NUMBERING CODES ASSIGNED TO LOCAL EXCHANGE CARRIERS

		Number of Codes Assigned in Blocks of 10,000 (Quarter Ending)			Share of Codes Assigned (Quarter Ending)	
		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	760	52,030	99	1
	Second Quarter	51,099	1,213	52,312	98	2
	Third Quarter	52,363	1,736	54,099	97	3
	Fourth Quarter	53,013	2,279	55,292	96	4
1997	First Quarter	53,655	2,732	56,387	95	5
	Second Quarter	55,130	3,665	58,795	94	6
	Third Quarter	56,891	4,910	61,801	92	8
	Fourth Quarter	57,428	5,855	63,283	91	9
1998	First Quarter	57,123	6,661	63,784	90	10
	Second Quarter	57,194	8,194	65,388	87	13
	Third Quarter	57,772	9,635	67,407	86	14
	Fourth Quarter	57,339	12,014	69,353	83	17
1999	First Quarter	57,411	13,296	70,707	81	19
	Second Quarter	58,312	14,602	72,914	80	20

CHART 9.3
NUMBERING CODES ISSUED TO LOCAL EXCHANGE CARRIERS



Source: Industry Analysis Division, *Local Competition: August 1999* .

CHART 9.4
LOCAL SERVICE COMPETITORS HOLDING NUMBERING CODES

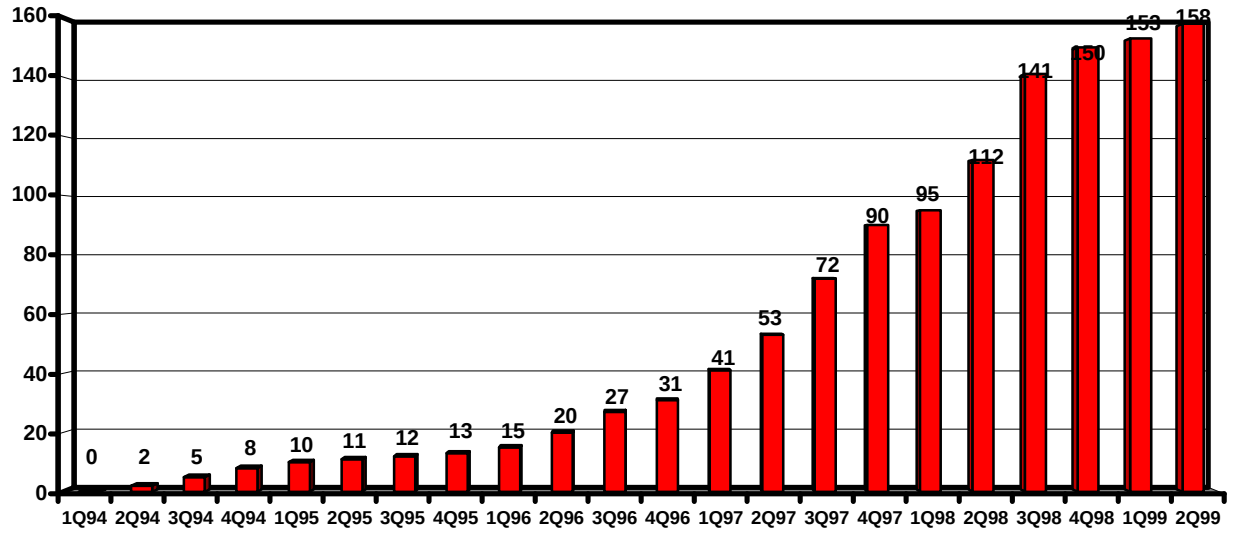
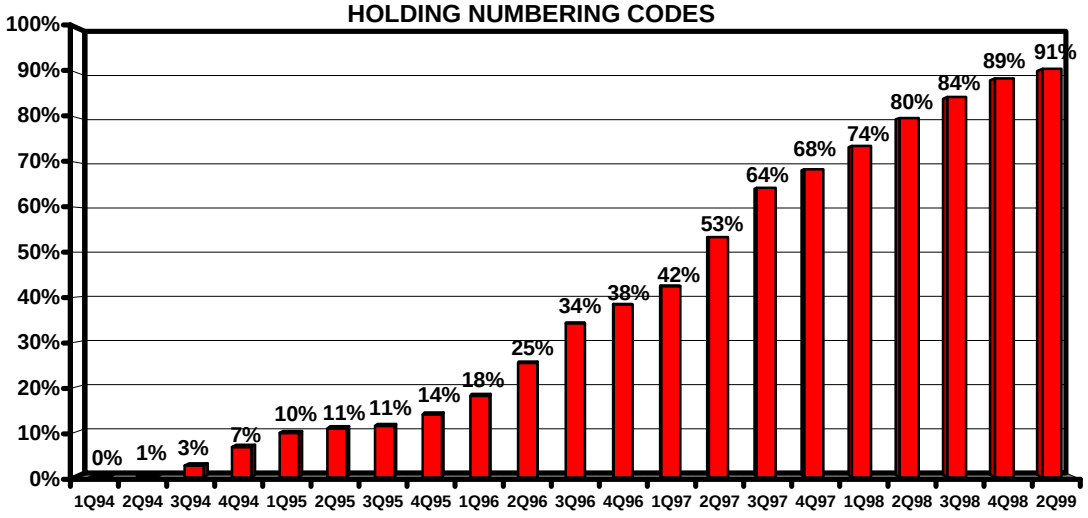


CHART 9.5
PERCENTAGE OF LATAS WITH ONE OR MORE LOCAL SERVICE COMPETITORS HOLDING NUMBERING CODES



Source: Industry Analysis Division, *Local Competition: August 1999* and Telcordia Technologies, Inc., *Local Exchange Routing Guide.*

TABLE 9.7
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	202	282	0	0	282
	February	0	0	11	293	0	0	293
	March	0	0	231	524	13	13	537
	April	0	0	567	1,091	16	29	1,120
	May	0	0	2,031	3,122	20	49	3,171
	June	0	0	5,485	8,607	28	77	8,684
	July	761	761	15,245	23,852	805	882	25,495
	August	2,192	2,953	31,052	54,904	2,217	3,099	60,956
	September	1,000	3,953	38,170	93,074	2,705	5,804	102,831
	October	1,000	4,953	105,331	198,405	4,189	9,993	213,351
	November	0	4,953	115,877	314,282	13,107	23,100	342,335
	December	2,947	7,900	152,230	466,512	22,506	45,606	520,018
1999	January	8,041	15,941	164,874	631,386	7,689	53,295	700,622
	February	4,000	19,941	189,944	821,330	7,387	60,682	901,953
	March	45,000	64,941	223,045	1,044,375	9,237	69,919	1,179,235
	April	90,994	155,935	237,506	1,281,881	11,298	81,217	1,519,033
	May	6,962	162,897	245,893	1,527,774	17,481	98,698	1,789,369

Source: Industry Analysis Division, *Local Competition: August 1999.*

LONG DISTANCE CARRIERS:

Carrier identification codes 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.

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.

Carrier identification codes are currently assigned by the North American Numbering Plan Administration (NANPA), which is part of Lockheed Martin IMS. Further information on such codes can be found on the internet at http://www.nanpa.com on the World Wide Web.

The number of long distance carriers more than tripled from 1986 to 1997. 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
1982 - 1992

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			

NUMBER OF CARRIER IDENTIFICATION CODES (CICs)
ASSIGNED BY
NORTH AMERICAN NUMBERING PLAN ADMINISTRATOR
1993 - 1998

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

* 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 Worksheers 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	*	*	*	562
1997	December 3/	*	*	*	*	569

* 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 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, which filed about 50 separate worksheets in 1996, filed only one consolidated worksheet for 1997.

LONG DISTANCE MARKET SHARES:

1. Minutes of Interstate Calling:

Measures of switched access minutes first became available in 1984. Such information is publicly available for the total industry and for AT&T but not for other long distance carriers. Thus, access minutes can be used to compute a market share for AT&T but not for smaller carriers.

Column 1 of Table 11.1 shows total interstate switched access minutes (which includes international) reported for all long distance carriers by the National Exchange Carrier Association (NECA). Interstate calling has grown steadily, with access minutes more than tripling, since these data were first measured in the third quarter of 1984. Overall economic growth, price reductions, and extensive advertising have contributed to this growth.

With few exceptions, terminating access minutes, which do not include dialing and call set-up time, equal long distance conversation minutes. Table 11.1, Column 2, shows the number of terminating interstate access minutes reported for all long distance carriers by NECA since 1986, when terminating minutes were first reported separately.

Columns 3 and 4 of Table 11.1 show AT&T's reported total access minutes and terminating access minutes. Columns 5 and 6 show the company's market share of total access minutes and terminating access minutes. Since mid-1984, AT&T's traffic has grown at a slower rate than the industry average: its minutes have doubled during that period while the minutes for other carriers have increased tenfold. As a result, AT&T's share of long distance access minutes has fallen sharply.

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 special codes 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 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 11.1 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 market shares of residential toll revenue for 1998. This table includes long distance market shares for AT&T, MCI WorldCom, Sprint, and Teleglobe (Excel).

TABLE 11.1

INTERSTATE SWITCHED ACCESS MINUTES

(FIGURES SHOWN IN BILLIONS)

	Total Industry		AT&T		AT&T'S Share of	
	Access Minutes	Terminating Minutes	Access Minutes	Terminating Minutes	Access Minutes	Terminating Minutes
1984 Third Quarter	37.5		31.6	18.1	84.2 %	
Fourth Quarter	39.6		31.8	18.2	80.2	
1985 First Quarter	39.6		32.8	19.0	83.0	
Second Quarter	41.5		33.3	19.2	80.3	
Third Quarter	42.8		33.8	19.4	78.9	
Fourth Quarter	43.3		33.4	19.2	77.1	
Total 1985	167.1		133.3	77.0	79.8	
1986 First Quarter	43.0		34.2	19.9	79.5	
Second Quarter	44.8		34.7	20.2	77.5	
Third Quarter	46.7	26.7	35.8	20.7	76.6	77.7 %
Fourth Quarter	48.5	27.6	35.9	20.6	74.0	74.7
Total 1986	183.1		140.6	81.5	76.8	
1987 First Quarter	51.2	28.9	37.4	21.4	72.9	74.2
Second Quarter	52.5	29.7	38.6	22.1	73.7	74.2
Third Quarter	55.0	30.9	39.2	22.3	71.2	72.1
Fourth Quarter	57.0	32.3	40.1	22.6	70.4	70.1
Total 1987	215.7	121.8	155.3	88.4	72.0	72.6
1988 First Quarter	59.0	33.4	41.2	23.3	69.8	69.9
Second Quarter	59.6	33.6	41.1	23.0	69.0	68.5
Third Quarter	62.1	34.9	42.3	23.6	68.2	67.6
Fourth Quarter	64.0	35.9	43.0	23.6	67.2	65.8
Total 1988	244.6	137.8	167.6	93.6	68.5	67.9
1989 First Quarter	66.2	37.3	44.2	24.5	66.8	65.7
Second Quarter	68.5	38.1	44.4	24.5	64.8	64.4
Third Quarter	69.7	38.6	44.9	24.7	64.4	64.1
Fourth Quarter	72.6	40.0	46.4	25.3	63.9	63.3
Total 1989	277.1	153.9	179.9	99.0	64.9	64.3
1990 First Quarter	74.7	41.2	47.1	25.8	63.0	62.5
Second Quarter	75.8	41.9	47.1	25.7	62.1	61.5
Third Quarter	77.9	43.4	48.7	26.4	62.5	60.9
Fourth Quarter	79.1	43.1	49.8	27.8	63.0	64.5
Total 1990	307.4	169.6	192.6	105.8	62.6	62.4
1991 First Quarter	79.2	43.4	49.9	27.1	63.0	62.4
Second Quarter	81.9	44.9	50.5	26.8	61.7	59.6
Third Quarter	82.6	45.1	51.2	27.1	61.9	60.1
Fourth Quarter	84.4	46.4	52.4	27.9	62.1	60.0
Total 1991	328.0	179.8	204.0	108.8	62.2	60.5
1992 First Quarter	85.6	47.7	53.3	28.6	62.2	59.9
Second Quarter	86.5	48.2	51.9	27.9	60.0	57.8
Third Quarter	87.9	49.1	53.0	28.4	60.3	57.9
Fourth Quarter	89.8	50.4	53.5	28.8	59.7	57.1
Total 1992	349.7	195.4	211.7	113.6	60.5	58.2

TABLE 11.1

INTERSTATE SWITCHED ACCESS MINUTES - CONTINUED

(FIGURES SHOWN IN BILLIONS)

	Total Industry		AT&T		AT&T'S Share of	
	Access Minutes	Terminating Minutes	Access Minutes	Terminating Minutes	Access Minutes	Terminating Minutes
1993 First Quarter	90.6	51.0	55.5	29.7	61.3 %	58.1 %
Second Quarter	91.2	51.9	55.0	29.9	60.3	57.6
Third Quarter	93.6	54.8	56.3	31.4	60.2	57.2
Fourth Quarter	95.9	56.4	56.8	31.9	59.3	56.6
Total 1993	371.2	214.1	223.6	122.8	60.2	57.4
1994 First Quarter	98.7	58.2	59.0	31.4	59.8	53.9
Second Quarter	97.9	58.3	57.7	31.1	59.0	53.3
Third Quarter	101.9	60.9	58.5	32.6	57.4	53.5
Fourth Quarter	102.9	62.0	59.5	33.3	57.9	53.6
Total 1994	401.4	239.4	234.7	128.3	58.5	53.6
1995 First Quarter	105.6	63.8	59.9	33.6	56.7	52.7
Second Quarter	106.8	64.7	59.3	33.5	55.5	51.8
Third Quarter	109.0	66.7	59.8	34.4	54.8	51.6
Fourth Quarter	110.6	67.5	60.8	34.6	55.0	51.2
Total 1995	431.9	262.7	239.8	136.1	55.5	51.8
1996 First Quarter	115.7	71.2	62.4	35.9	54.0	50.5
Second Quarter	114.7	71.5	60.2	35.1	52.4	49.0
Third Quarter	117.5	73.9	60.7	35.5	51.6	48.1
Fourth Quarter	120.2	76.2	61.7	35.6	51.3	46.8
Total 1996	468.1	292.8	244.9	142.1	52.3	48.6
1997 First Quarter	122.1	76.6	63.9	37.1	52.3	48.5
Second Quarter	124.4	79.2	63.2	37.1	50.8	46.8
Third Quarter	124.9	79.2	65.3	38.6	52.3	48.7
Fourth Quarter	125.8	80.4	64.1	37.4	50.9	46.8
Total 1997	497.3	315.4	256.5	150.2	51.6	47.6
1998 First Quarter	124.0	79.7	65.9	39.1	53.2	49.0
Second Quarter	131.3	84.6	67.0	37.6	51.0	44.4
Third Quarter	130.7	84.3	68.4	39.0	52.4	46.2
Fourth Quarter	132.8	86.2	68.4	38.7	51.5	44.9
Total 1998	518.8	334.8	269.8	154.3	52.0	46.1

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

Note: Switched access minutes are those minutes transmitted by long distance carriers that also use the distribution of local telephone companies. The measure includes minutes associated with ordinary long distance calls and "open end" of WATS-Like calls. It excludes calls made on private telecommunications systems, on leased line minutes on the "closed end" of WATS-Like calls.

TABLE 11.2

TOTAL OPERATING REVENUES OF LONG DISTANCE SERVICE PROVIDERS
(DOLLAR AMOUNTS SHOWN 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/								
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. dba 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. Services, 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 Ccompanies 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, Iinc.	138							
Total-Tel USA Communications, Inc.	137	123						
Working Assets Funding Service, Inc.	131							
ITC^Deltacom Communications, Inc.	122							
One Call Communications, Inc.		118	114					
Cherry Communications, Inc. 10/		180	354					
Midcom Communications, Inc. 11/			149	204	109			
GE Capital Communications Services Corp.				120				
Oncor Communications, Inc.				111	172	140	159	181
The Furst Group, Inc.				109				
American Network Exchange, Inc.				101	109			
Telesphere Companies 12/								
Telesphere Network, inc.								308
National Telephone Services, Inc.								
Others 13/	4,371	8,498	5,788	5,168	5,055	4,319	3,923	2,948
Total Long Distance Carriers	94,392	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 13/	2,572	3,077	3,298	3,143	3,848	3,908	3,897	4,049
Caps, Clecs, & Other Local Telephone Companies 13/	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	$105,051	$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
(DOLLAR AMOUNTS SHOWN 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. dba 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. Services, Inc. f/k/a IXC Long Distance, Inc.							
GTE Communications Corp.							
Star Telecommunications, Inc.							
PT-1 Communications, Inc.							
Pacific Gateway Exchange, Inc.							
RSL Ccompanies 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, Iinc.							
Total-Tel USA Communications, Inc.							
Working Assets Funding Service, Inc.							
ITC^Deltacom Communications, Inc.							
One Call Communications, Inc.							
Cherry Communications, Inc. 10/							
Midcom Communications, Inc. 11/							
GE Capital Communications Services Corp.							
Oncor Communications, Inc.	230	275					
The Furst Group, Inc.							
American Network Exchange, Inc.							
Telesphere Companies 12/							
Telesphere Network, inc.	293	192					
National Telephone Services, Inc.		150					
Others 13/	2,582	2,359	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 13/	4,112	4,291	4,445	3,468	3,274	3,159	3,364
Caps, Clecs, & Other Local Telephone Companies 13/							
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	43.8	19.0	6.5	9.5	19.8	2,431
1998	43.1	25.6		10.5	20.8	2,641

* FCC estimate.

CHART 11.1
TOTAL OPERATING REVENUES OF LONG DISTANCE CARRIERS

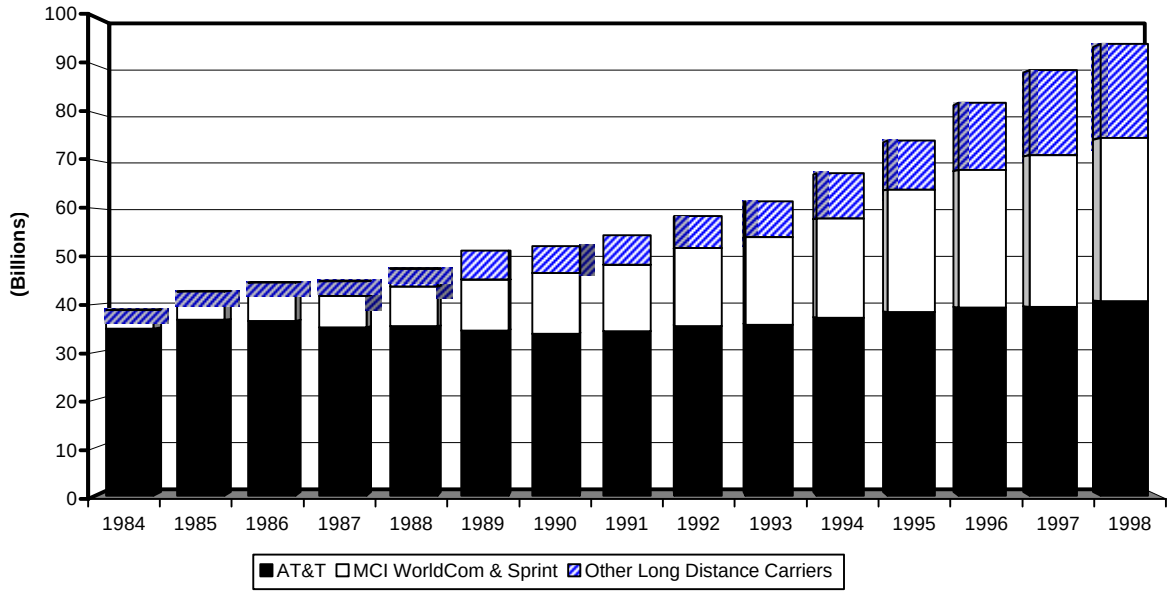


TABLE 11.4

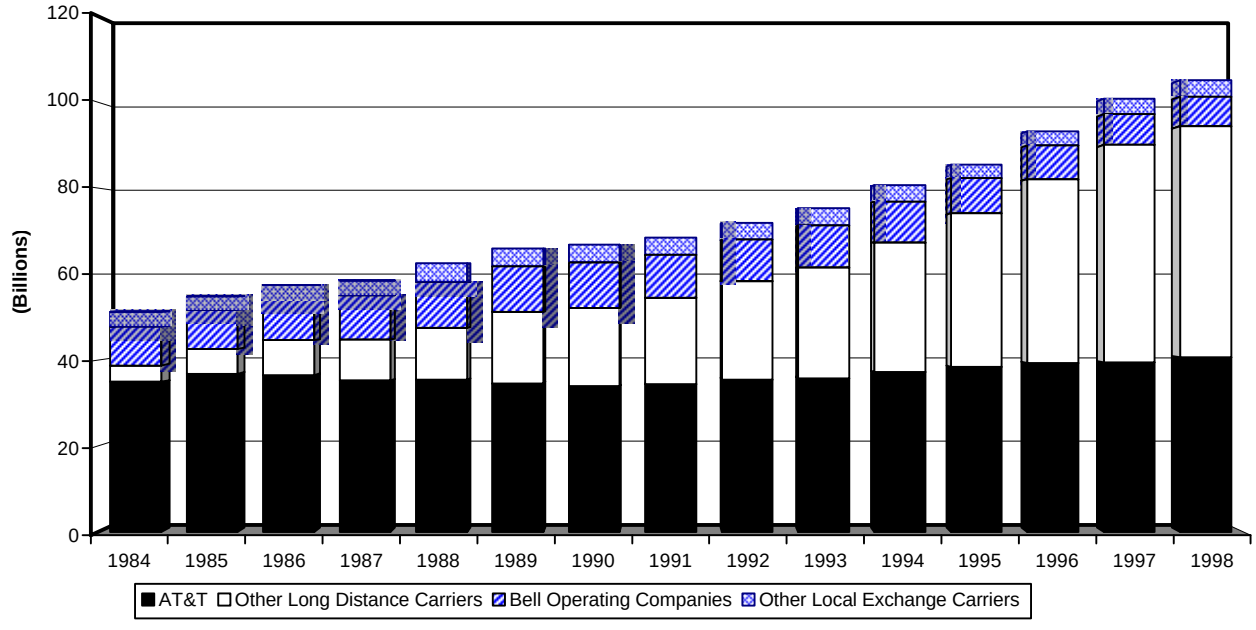
TOTAL TOLL SERVICE REVENUES - MARKET SHARE

(BASED ON REVENUES OF LONG DISTANCE TOLL PROVIDERS)

YEAR	AT&T	MCI WorldCom		Sprint	All Other Long Distance Carriers	Bell Operating Companies	Other Local Telephone Companies	HERFINDAHL-HIRSCHMAN INDEX (HHI) *
		MCI	WorldCom					
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 11.2
TOTAL OPERATING REVENUES FOR LONG DISTANCE CARRIERS INCLUDING TOLL REVENUES FOR LOCAL EXCHANGE CARRIERS



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

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

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

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

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/ Cherry Communications, Inc. filed for bankruptcy protection in October 1997.

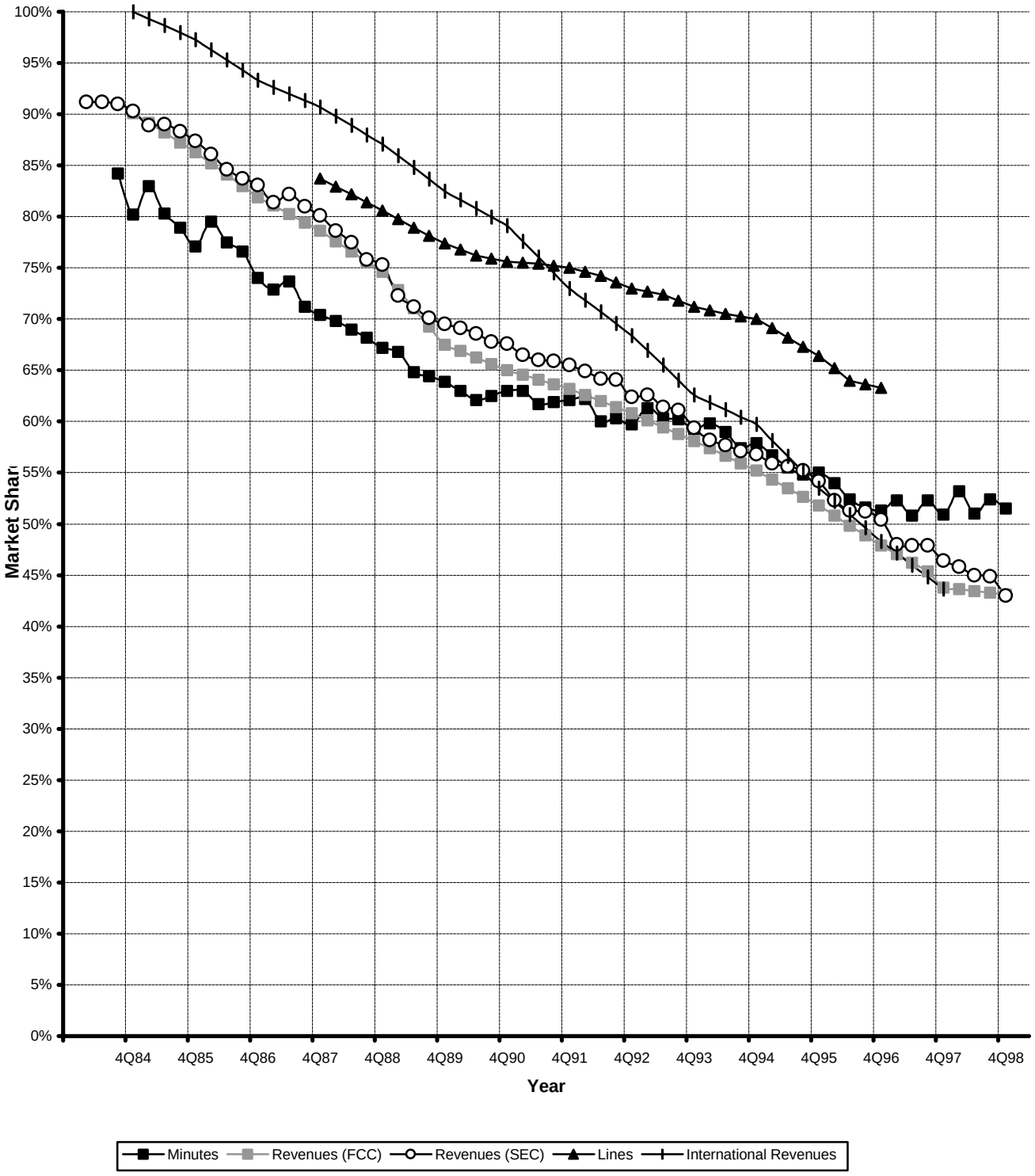
11/ MC Liquidating Corp. f/k/a Midcom Communications, Inc. filed for bankruptcy protection in

12/ Telesphere Network, Inc. and National Telephone Services, Inc. merged during 1989. In 1991 Telesphere went into bankruptcy.

13/ Estimated by FCC staff.

CHART 11.3

INDICATORS OF AT&T MARKET SHARE



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

TABLE 11.5

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.*

* Based on long distance carrier revenue. Taxes not included in residential toll revenue.

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 1997. During that same period, interstate calling minutes increased from 8% of the total to 15%.

As shown in Table 12.2, the average telephone line is used primarily for local calling and is used somewhat less than 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 57 minutes in 1997.

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 nears 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	2,227	343	451	3,021
1996	2,405	370	487	3,262
1997	2,683	404	525	3,612
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	5	7	5
1996	8	8	8	8
1997	12	9	8	11
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

Source: National Exchange Carrier Association.

TABLE 12.2

LINE USAGE PER DAY
DIAL EQUIPMENT MINUTES PER LOCAL LOOP

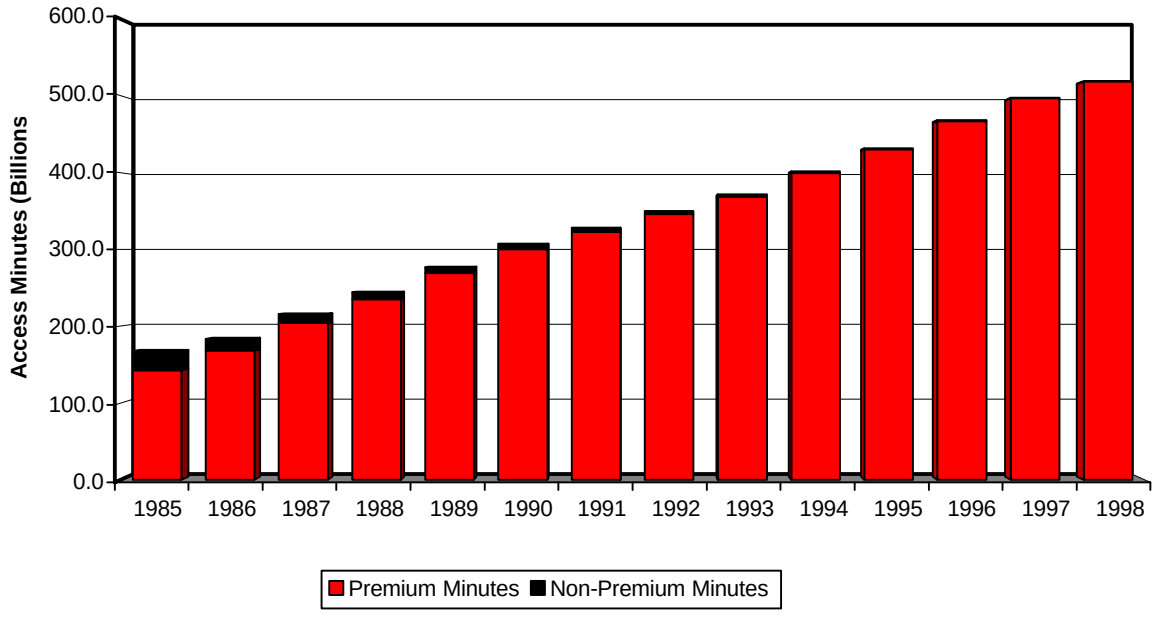
	Local	Intrastate Toll	Interstate Toll	Total
1980	39	4	4	46
1981	39	4	4	46
1982	39	4	4	47
1983	39	4	4	48
1984	40	5	5	50
1985	40	5	6	51
1986	39	5	6	51
1987	38	6	7	50
1988	39	6	7	51
1989	38	6	7	51
1990	37	6	7	50
1991	37	6	7	50
1992	37	6	7	50
1993	37	6	7	51
1994	38	6	8	51
1995	38	6	8	52
1996	40	6	8	54
1997	42	6	8	57
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	1	3	1
1996	3	3	3	3
1997	7	5	3	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	430.3	1.6	431.9
1996	466.9	1.2	468.1
1997	496.6	0.7	497.3
1998	518.5	0.4	518.8

Chart 12.1
INTERSTATE SWITCHED ACCESS MINUTES



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

PRICE INDEXES 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 indexes.

1. Long-Term Trends in Price Indexes:

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 Indexes 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.

The Bureau of Labor Statistics recently created a Consumer Price Index for cellular telephone service. Beginning in December 1997 with an index value of 100, the index had dropped to 84.0 by June 1999. The fall in cellular prices appears consistent with a long term trend. Although price indexes were not available until this year, the data in cellular service in Table 2.2 indicates a steady decline in average customer bills.

2. Comprehensive Price Indexes:

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 and long distance 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 fixed-weight 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, subscriber line charges, and all other consumer expenditures associated with telephone services except long distance 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 indexes of local costs are presented in Table 13.3.

4. Price Indexes for Long Distance Service:

Price indexes are available for intrastate toll and interstate toll services since December 1998. These series are also presented in Table 13.3.

5. Price Index Limitations:

Price indexes 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 indexes.

TABLE 13.1

LONG-TERM CHANGES FOR VARIOUS PRICE INDEXES
(ANNUAL RATES OF CHANGE)

	1935 - 1998	1988 - 1998
CPI all items	4.0 %	3.1 %
CPI all services	4.5	3.8
CPI telephone services***	2.0	0.9
CPI major categories:		
- food & beverages	*	3.0
- housing	*	3.0
- apparel & upkeep	3.0	1.0
- transportation	3.7	2.4
- medical care	5.2	5.8
- recreation **	*	2.5
- other goods & services	*	5.9
CPI public transportation	4.9	4.1
CPI piped gas	3.5	1.9
CPI electricity	2.2	1.3
CPI sewer & water maintenance	*	4.9
CPI postage	4.1	2.8

Source: Bureau of Labor Statistics.

* Series not established until after 1935.

** Series not established until 1998. Figure reflects annual change between 1992 and 1998.

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

CHART 13.1

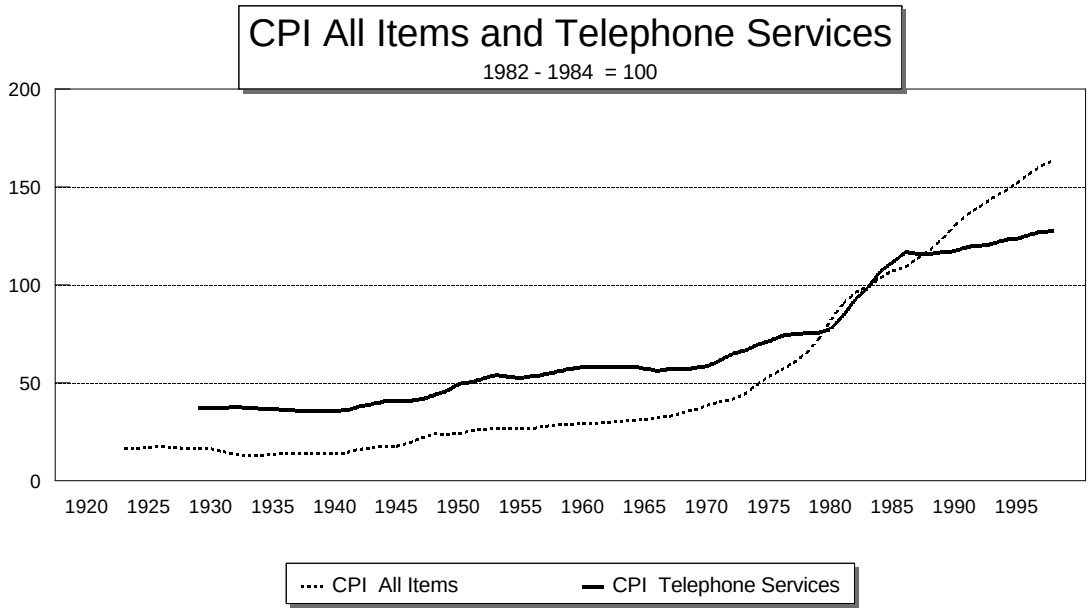


TABLE 13.2

ANNUAL CHANGES IN MAJOR PRICE INDEXES

	GDP Chain-Type Price Index	CPI All Items	CPI Telephone Services
1978	7.3 %	9.0 %	0.8 %
1979	8.5	13.3	0.8
1980	9.3	12.5	4.4
1981	9.4	8.9	11.8
1982	6.3	3.8	7.2
1983	4.3	3.8	3.6
1984	3.8	3.9	9.2
1985	3.4	3.8	4.7
1986	2.6	1.1	2.7
1987	3.1	4.4	-1.3
1988	3.7	4.4	1.3
1989	4.2	4.6	-0.3
1990	4.4	6.1	-0.4
1991	3.9	3.1	3.5
1992	2.8	2.9	-0.3
1993	2.6	2.7	1.8
1994	2.4	2.7	0.7
1995	2.3	2.5	1.2
1996	1.9	3.3	2.1
1997	1.9	1.7	0.2
1998	1.0	1.6	0.3 *

Sources: Bureau of Labor Statistics and Bureau of Economic Analysis.

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

CHART 13.2

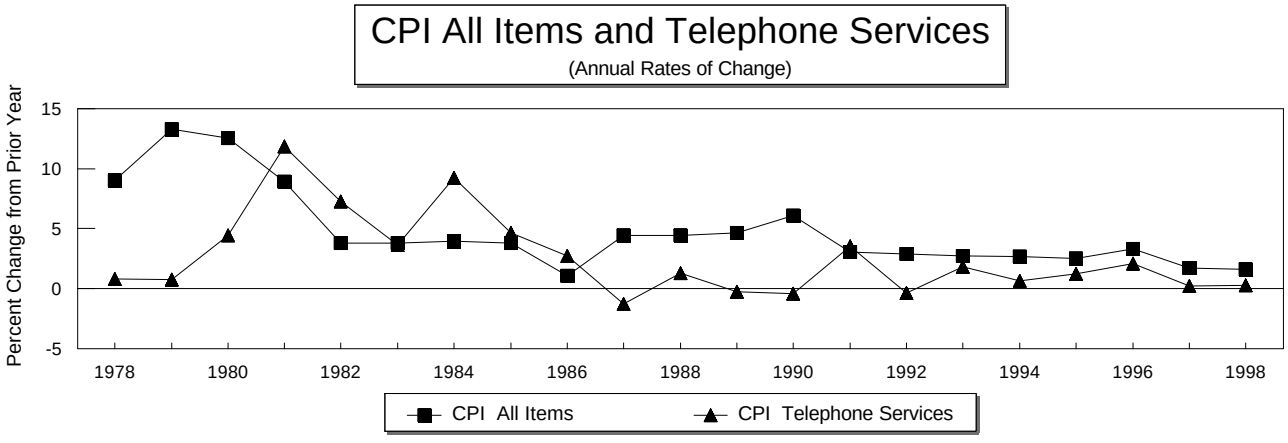


TABLE 13.3

ANNUAL CHANGES IN PRICE INDEXES FOR LOCAL AND LONG DISTANCE TELEPHONE SERVICES

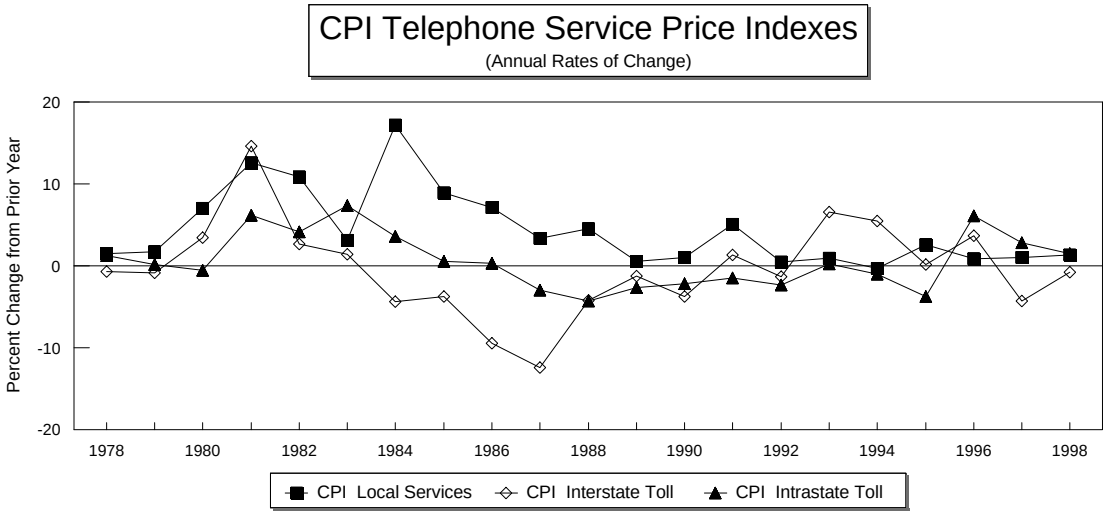
	Local Residential Service		Toll Service *			
	CPI All Local Charges	PPI Monthly Service Charges	Interstate Toll Calls		Intrastate Toll Calls	
			CPI	PPI	CPI	PPI
1978	1.4 %	3.1 %	-0.7 %	0.0 %	1.3 %	0.1 %
1979	1.7	1.6	-0.8	-0.9	0.1	-0.7
1980	7.0	7.1	3.4	5.5	-0.6	2.3
1981	12.6	15.6	14.6	15.9	6.2	8.0
1982	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	-3.7
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

Source: Bureau of Labor Statistics.

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

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

CHART 13.3



PRICE LEVELS:

1. Local Rate Levels:

The price indexes 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 1998, the monthly charge was $19.85, while the average charge for connecting phone service was $43.83.

Table 14.2 presents average local rates for a business with a single phone line in an urban area. In October 1998, the representative monthly charge was $41.28 while the charge for connecting phone service was $70.09.

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/ on the World Wide Web. 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 July 1999. 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 30% 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 2/3 of interstate calls covered less than 200 miles and consumers made almost no international calls. Today, about 2/3 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

(as of October 15, 1986-1998)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
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	$13.77
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	3.55
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
Other Mandatory Payments	1.51	1.56	1.58	1.70	2.00	2.12	2.15	2.29	2.31	2.41	2.40	2.42	2.44
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**	**19.85**
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	41.31
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
Other Mandatory Payments	2.28	2.20	2.11	2.44	2.32	2.30	2.29	2.30	2.33	2.44	2.36	2.46	2.40
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**	**43.83**
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
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	1.66

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

Table 14.2

Average Local Rates for Businesses with a Single Line in Urban Areas
(as of October 15, 1989-1998)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Monthly Representative Service Charge*	$31.06	$30.97	$32.29	$32.45	$32.70	$32.25	$32.48	$32.58	$32.76	$32.44
Subscriber Line Charges	3.55	3.57	3.57	3.56	3.57	3.57	3.57	3.54	3.54	3.54
Extra for Touch-tone	2.43	2.35	1.84	1.71	1.67	1.21	0.97	0.82	0.38	0.32
Other Mandatory Payments	4.21	4.32	4.42	4.57	4.63	4.61	4.79	4.87	4.99	4.97
Total Monthly Charge	**41.25**	**41.21**	**42.12**	**42.29**	**42.57**	**41.64**	**41.80**	**41.81**	**41.67**	**41.28**
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
Subscriber Line Charges	3.65	3.69	3.70	3.70	3.70	3.70	3.69	3.61	3.61	3.56
Extra for Touch-tone	2.12	2.11	1.87	1.84	1.76	1.12	1.00	0.89	0.53	0.49
Other Mandatory Payments	4.90	4.98	5.22	5.34	5.50	5.36	5.58	5.55	5.58	5.63
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**
* Number of Sample Cities with Flat-rate Service	59	56	54	54	54	53	53	53	53	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
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
Subscriber Line Charges	3.54	3.55	3.55	3.54	3.55	3.55	3.54	3.51	3.51	3.53
Extra for Touch-tone	2.48	2.39	1.87	1.73	1.68	1.22	0.98	0.83	0.39	0.33
Other Mandatory Payments	4.41	4.53	4.56	4.77	4.86	4.83	5.01	5.13	5.22	5.19
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**
Number of Sample Cities with Measured/Message Service	83	83	84	84	84	87	87	86	85	85
Cost of a Five-minute Business-day Same-zone Call	$0.0929	$0.0933	$0.0912	$0.0931	$0.0942	$0.0923	$0.0925	$0.0923	$0.0921	$0.0918
Basic Connection Charge	$71.05	$71.36	$72.75	$72.55	$71.41	$69.88	$67.87	$68.47	$68.67	$65.83
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
Tax	4.06	4.15	4.32	4.33	4.25	4.13	4.17	4.20	4.45	4.13
Total Connection Charge	**76.81**	**77.40**	**78.20**	**78.07**	**76.83**	**74.93**	**72.31**	**72.85**	**73.29**	**70.09**
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
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

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

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* July 1999	Residential* Percentage Change	Business** January 1984	Business** July 1999	Business** Percentage Change
1 - 10	Day	$0.96	$1.40	45.8 %	$0.96	$1.82	89.3 %
	Evening	0.57	0.80	40.4	0.57	1.82	218.9
	Night & Weekend	0.38	0.65	71.1	0.38	1.82	378.3
11 - 22	Day	1.28	$1.40	9.4	1.28	1.82	42.0
	Evening	0.76	0.80	5.3	0.76	1.82	139.1
	Night & Weekend	0.51	0.65	27.5	0.51	1.82	256.4
23 - 55	Day	1.60	$1.40	-12.5	1.60	1.82	13.6
	Evening	0.96	0.80	-16.7	0.96	1.82	89.3
	Night & Weekend	0.64	0.65	1.6	0.64	1.82	184.0
56 - 124	Day	2.05	$1.40	-31.7	2.05	1.82	-11.3
	Evening	1.22	0.80	-34.4	1.22	1.82	49.0
	Night & Weekend	0.82	0.65	-20.7	0.82	1.82	121.6
125 - 292	Day	2.14	$1.40	-34.6	2.14	1.82	-15.1
	Evening	1.28	0.80	-37.5	1.28	1.82	42.0
	Night & Weekend	0.85	0.65	-23.5	0.85	1.82	113.8
293 - 430	Day	2.27	$1.40	-38.3	2.27	1.82	-19.9
	Evening	1.36	0.80	-41.2	1.36	1.82	33.6
	Night & Weekend	0.90	0.65	-27.8	0.90	1.82	101.9
431 - 925	Day	2.34	$1.40	-40.2	2.34	1.82	-22.3
	Evening	1.40	0.80	-42.9	1.40	1.82	29.8
	Night & Weekend	0.93	0.65	-30.1	0.93	1.82	95.4
926 - 1910	Day	2.40	$1.40	-41.7	2.40	1.82	-24.3
	Evening	1.44	0.80	-44.4	1.44	1.82	26.2
	Night & Weekend	0.96	0.65	-32.3	0.96	1.82	89.3
1911 - 3000	Day	2.70	$1.40	-48.1	2.70	1.82	-32.7
	Evening	1.62	0.80	-50.6	1.62	1.82	12.2
	Night & Weekend	1.08	0.65	-39.8	1.08	1.82	68.3
3001 - 4250	Day	2.80	$1.40	-50.0	2.80	1.82	-35.1
	Evening	1.68	0.80	-52.4	1.68	1.82	8.2
	Night & Weekend	1.12	0.65	-42.0	1.12	1.82	62.3
4251 - 5750	Day	2.91	$1.40	-51.9	2.91	1.82	-37.5
	Evening	1.74	0.80	-54.0	1.74	1.82	4.5
	Night & Weekend	1.16	0.65	-44.0	1.16	1.82	56.7

Source: AT&T tariffs and Industry Analysis Division, *Reference Book of Rates, Price Indices, and Household 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	32 ¢			
1985	31			
1986	28			
1987	25			
1988	23			
1989	22			
1990	20			
1991	20			
1992	19	19 ¢	102 ¢	15 ¢
1993	19	19	101	15
1994	18	18	94	13
1995	N/A	17	90	12
1996	N/A	16	77	12
1997	N/A	15	71	11
1998	N/A	14	58 ****	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.

**** Prelmininary data.

TABLE 14.6
AVERAGE REVENUE PER MINUTE

	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	27 ¢	35 ¢	16.7	$2.68	$3.42
1931	27	35	15.2	2.89	3.75
1932	26	35	13.7	3.12	4.16
1933	28	35	13.0	3.45	4.39
1934	27	35	13.4	3.31	4.26
1935	27	35	13.7	3.16	4.16
1936	25	35	13.9	2.95	4.10
1937	22	35	14.4	2.45	3.96
1938	21	26	14.1	2.48	2.95
1939	22	26	13.9	2.53	2.99
1940	21	26	14.0	2.45	2.97
1941	21	26	14.7	2.30	2.83
1942	22	26	16.3	2.16	2.55
1943	21	22	17.3	1.98	2.07
1944	22	22	17.6	1.99	2.04
1945	21	22	18.0	1.92	1.99
1946	20	22	19.5	1.65	1.84
1947	19	22	22.3	1.40	1.61
1948	19	22	24.1	1.26	1.49
1949	19	22	23.8	1.29	1.51
1950	19	22	24.1	1.31	1.49
1951	20	22	26.0	1.26	1.38
1952	20	22	26.5	1.24	1.35
1953	21	22	26.7	1.27	1.34
1954	22	22	26.9	1.35	1.33
1955	23	22	26.8	1.40	1.34
1956	23	22	27.2	1.40	1.32
1957	24	22	28.1	1.38	1.28
1958	24	22	28.9	1.35	1.24
1959	24	22	29.1	1.35	1.23
1960	24	22	29.6	1.33	1.21
1961	25	22	29.9	1.36	1.20
1962	25	22	30.2	1.36	1.19
1963	25	22	30.6	1.32	1.17
1964	25	22	31.0	1.31	1.16
1965	24	22	31.5	1.24	1.14
1966	24	22	32.4	1.22	1.11
1967	24	22	33.4	1.18	1.07
1968	24	22	34.8	1.11	1.03
1969	24	22	36.7	1.07	0.98

* Estimates for 1930 through 1981 are based on information in AT&T *Long Lines Statistics*, 1930-1963; 1946-1970, and 1960-1981 and appear to represent data for the conterminous U.S. only. Data prior to 1946 may not be comparable. Data for 1982 and 1983 were estimated using BLS price index changes. Data for 1984 through 1991 were supplied by AT&T. Starting with 1992, data are from Industry Analysis Division, *Telecommunications Industry Revenue*.

TABLE 14.6
AVERAGE REVENUE PER MINUTE
(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	200-Mile Call Charge per Minute
1970	23 ¢	22 ¢	38.8	0.97	0.90
1971	25	21	40.5	0.99	0.85
1972	24	23	41.8	0.95	0.91
1973	25	23	44.4	0.93	0.86
1974	26	25	49.3	0.85	0.82
1975	27	25	53.8	0.83	0.75
1976	29	32	56.9	0.82	0.90
1977	28	33	60.6	0.77	0.87
1978	29	33	65.2	0.72	0.84
1979	29	33	72.6	0.65	0.75
1980	30	33	82.4	0.59	0.66
1981	33	35	90.9	0.59	0.63
1982	34	41	96.5	0.58	0.69
1983	35	41	99.6	0.57	0.67
1984	32	41	103.9	0.51	0.64
1985	31	39	107.6	0.47	0.59
1986	28	31	109.6	0.42	0.47
1987	25	27	113.6	0.35	0.38
1988	23	25	118.3	0.32	0.34
1989	22	23	124.0	0.29	0.31
1990	20	22	130.7	0.25	0.27
1991	20	21	136.2	0.24	0.25
1992	19	21	140.3	0.22	0.24
1993	19	22	144.5	0.22	0.25
1994	18	24	148.2	0.20	0.26
1995	17	27	152.4	0.18	0.29
1996	16	28	156.9	0.17	0.29
1997	15	29	160.5	0.15	0.29
1998	14	28	163.0	0.14	0.28

* Estimates for 1930 through 1981 are based on information in AT&T *Long Lines Statistics*, 1930-1963; 1946-1970, and 1960-1981 and appear to represent data for the conterminous U.S. only. Data prior to 1946 may not be comparable. Data for 1982 and 1983 were estimated using BLS price index changes. Data for 1984 through 1991 were supplied by AT&T. Starting with 1992, data are from Industry Analysis Division, *Telecommunications Industry Revenue*.

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. Nonprice-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 changes, if any revisions were 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 carriers' Form 492 reports are on file in the FCC's Reference Information Center, Courtyard Level, 445 12th Street S.W.

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
	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.

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 nearly 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: 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 calls for 1996, 295,498 calls 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 carrier.

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 domestic 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 domestic 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 carrier.

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.

Nineteen 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 end of 1997. (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.

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

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	1998	Change
Alabama	88.4 %	93.3 %	4.8 % *
Alaska	86.5	94.0	7.5 *
Arizona	86.9	91.9	5.0 *
Arkansas	86.6	88.0	1.4
California	92.5	95.2	2.7 *
Colorado	93.2	95.0	1.8
Connecticut	95.5	95.5	-0.0
Delaware	94.3	96.7	2.4 *
District of Columbia	94.9	91.0	-3.9 **
Florida	88.7	92.6	3.9 *
Georgia	86.2	91.4	5.3 *
Hawaii	93.5	95.4	1.9 *
Idaho	90.7	93.3	2.6 *
Illinois	94.2	92.7	-1.4 **
Indiana	91.6	94.4	2.8 *
Iowa	96.2	96.7	0.5
Kansas	94.3	94.3	0.0
Kentucky	88.1	93.3	5.2 *
Louisiana	89.7	92.3	2.6 *
Maine	93.4	96.9	3.5 *
Maryland	95.7	96.5	0.8
Massachusetts	95.9	94.5	-1.4
Michigan	92.8	95.0	2.1 *
Minnesota	95.8	97.8	2.0 *
Mississippi	82.4	89.5	7.1 *
Missouri	91.5	94.6	3.1 *
Montana	91.0	94.1	3.1 *
Nebraska	95.7	96.2	0.5
Nevada	90.4	92.3	2.0
New Hampshire	94.3	95.5	1.2
New Jersey	94.8	94.5	-0.3
New Mexico	82.0	88.2	6.2 *
New York	91.8	94.8	3.0 *
North Carolina	88.3	93.1	4.8 *
North Dakota	94.6	96.8	2.1
Ohio	92.4	95.6	3.2 *
Oklahoma	90.3	90.6	0.3
Oregon	90.6	96.0	5.4 *
Pennsylvania	94.9	96.8	2.0 *
Rhode Island	93.6	95.6	1.9 *
South Carolina	83.7	92.9	9.2 *
South Dakota	93.2	90.6	-2.6 **
Tennessee	88.5	94.6	6.1 *
Texas	88.4	92.2	3.8 *
Utah	92.5	97.0	4.5 *
Vermont	92.3	95.2	3.0
Virginia	93.1	93.9	0.9
Washington	93.0	95.2	2.2
West Virginia	87.7	93.8	6.1 *
Wisconsin	95.2	95.9	0.7
Wyoming	89.9	93.7	3.8 *
Total United States	91.6	94.1	2.5 *

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

ALL HOUSEHOLDS			
	March 1984	March 1998	Change
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.

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 that 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 BOC 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/ on the World Wide Web. Selected holding company information 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.

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. 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 December 1998 which have been classified in one of the following classes:

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 has been reclassified in 1998, the data for prior years are recalculated based on this reclassification.

Additional information on patents can be found on the internet at http://www.uspto.gov on the World Wide Web.

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	9,791	0	0.0	431	4.4	9,360	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	9,791	9,768	99.8	9,646	98.5	4,146	42.3

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	135,981	99.7	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.

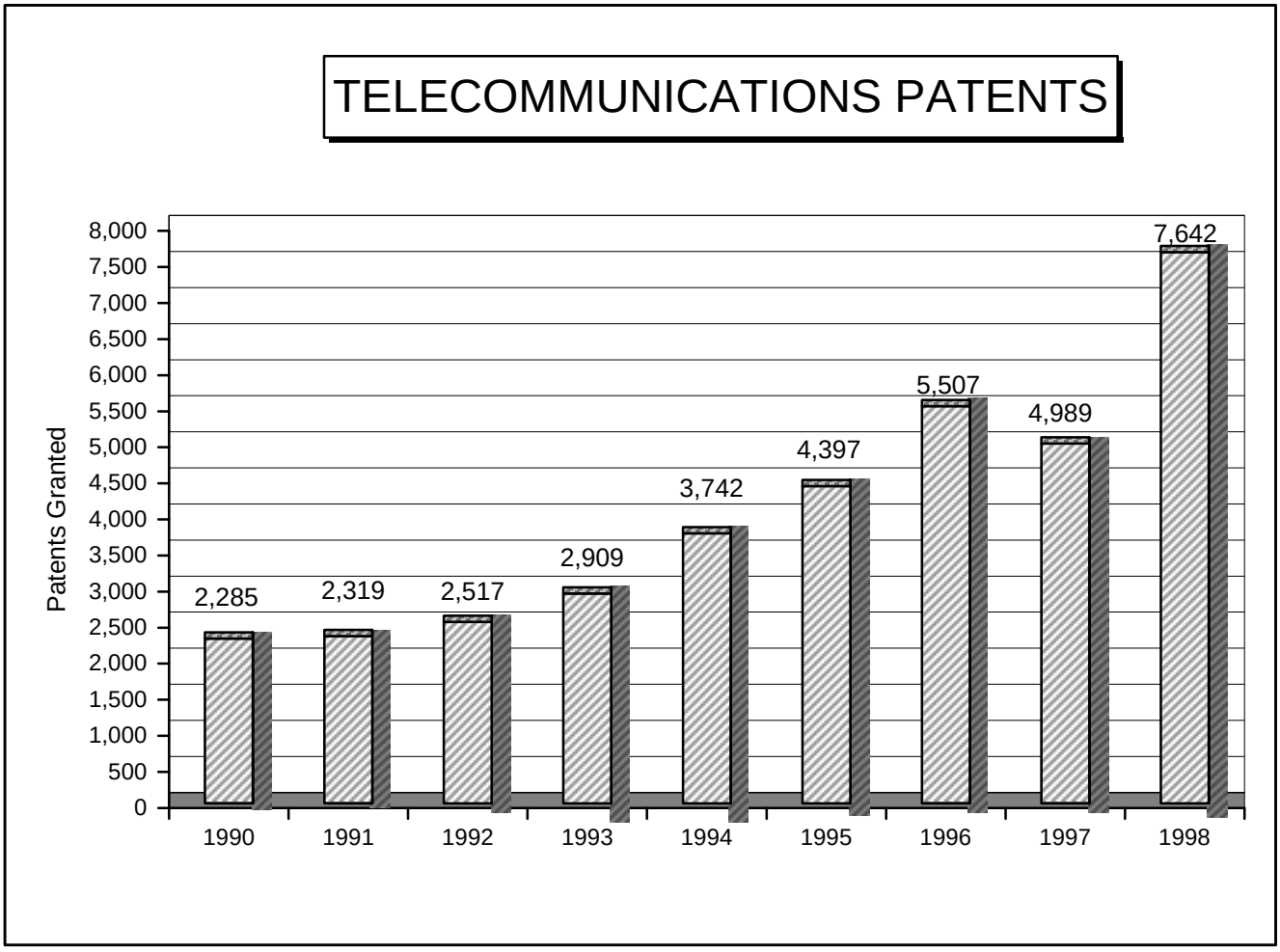
WORKING TELECOMMUNICATIONS CHANNELS
(thousands)

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.

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.

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 and their revenues are shown in Table 19.4. Additional revenue detail can be found in the latest *Monitoring* and *Telecommunications Industry Revenue* reports.

The publication *Carrier Locator: Interstate Service Providers* lists 3,528 carriers that filed a TRS Worksheet in 1998. It also contains an address and contact telephone number for each carrier. (The 1998 TRS worksheets contained data for 1997. The *Carrier Locator* for TRS worksheets filed in 1999 will be published in the fall and will be available on the **FCC-State Link** at that time.)

Table 19.5 provides estimates of industry telephone revenue by state for 1995-1997. Table 19.5 also provides estimates for end user and carrier's carrier revenue for 1997. Nationwide telephone revenue from *Telecommunications Industry Revenue: 1997* 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
Incumbent Local Exchange Carriers		1,281	1,347	1,347	1,376	1,410
Pay Telephone Providers		163	197	271	533	509
Competitive Access Providers (CAPs) and Competitive Local Exchange Carriers (CLECs)		20	30	57	94	129
Local Resellers					8	11
Other Local Exchange Carriers					13	3
Private Carriers						2
Shared Tenant Service Providers					4	2
Competitors of ILECs		20	30	57	119	147
Local Service Providers		1,464	1,574	1,675	2,028	2,066
Wireless Telephony -- Cellular Service Carriers & Personal Communications Service (PCS) and Specialized Mobile Radio (SMR) Telephone		798	790	792	853	732
Paging Service Providers		126	117	138	200	137
SMR Dispatch and Other Mobile Service Providers					163	99
Wireless Data Service Providers					1	1
Wireless Service Providers		924	907	930	1,217	969
Interexchange Carriers (IXCs)		83	97	130	149	151
Operator Service Providers (OSPs)		35	29	25	27	32
Prepaid Calling Card Providers				8	16	18
Satellite Service Carriers					22	13
Toll Resellers		171	206	260	345	340
Other Toll Carriers		32	34	30	28	15
Toll Service Providers		321	366	453	587	569
All Filers	2,558	2,709	2,847	3,058	3,832	3,604

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.

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)

State Name	1995 Total	1996 Total	1997 Carrier's Carrier	1997 End User	1997 Total	1997 Percent Of Total	Percent Change 1995-1997
Alabama	$2,668	$2,946	$558	$2,647	$3,205	1.39 %	20.1 %
Alaska	464	518	109	452	561	0.24	21.0
Arizona	2,842	3,249	719	2,948	3,667	1.59	29.0
Arkansas	1,534	1,719	347	1,538	1,885	0.82	22.9
California	22,379	25,100	4,887	22,349	27,236	11.78	21.7
Colorado	3,128	3,526	785	3,222	4,006	1.73	28.1
Connecticut	2,765	2,943	561	2,705	3,266	1.41	18.1
Delaware	492	567	101	527	627	0.27	27.5
Dist. of Columbia	886	955	218	831	1,049	0.45	18.3
Florida	11,582	12,972	2,831	11,330	14,161	6.13	22.3
Georgia	5,335	6,004	1,250	5,598	6,849	2.96	28.4
Hawaii	775	841	185	746	930	0.40	20.1
Idaho	791	908	219	748	967	0.42	22.2
Illinois	7,916	8,920	1,622	8,446	10,069	4.36	27.2
Indiana	3,804	4,192	902	3,634	4,536	1.96	19.2
Iowa	1,888	2,039	470	1,693	2,163	0.94	14.6
Kansas	1,829	2,017	422	1,743	2,165	0.94	18.4
Kentucky	2,353	2,629	578	2,283	2,861	1.24	21.6
Louisiana	2,703	2,946	536	2,655	3,192	1.38	18.1
Maine	869	976	206	790	996	0.43	14.6
Maryland	3,767	4,234	761	3,864	4,625	2.00	22.8
Massachusetts	4,988	5,455	1,098	4,912	6,010	2.60	20.5
Michigan	6,444	7,246	1,380	6,603	7,983	3.45	23.9
Minnesota	3,064	3,461	774	3,090	3,864	1.67	26.1
Mississippi	1,584	1,734	311	1,565	1,877	0.81	18.4
Missouri	3,623	4,017	931	3,459	4,389	1.90	21.2
Montana	640	709	147	609	756	0.33	18.1
Nebraska	1,296	1,428	331	1,208	1,540	0.67	18.8
Nevada	1,099	1,324	251	1,238	1,489	0.64	35.5
New Hampshire	989	1,118	241	968	1,208	0.52	22.1
New Jersey	7,091	7,927	1,552	7,155	8,707	3.77	22.8
New Mexico	1,121	1,262	281	1,089	1,370	0.59	22.3
New York	14,983	16,026	3,261	13,860	17,120	7.41	14.3
North Carolina	5,394	6,104	1,380	5,233	6,613	2.86	22.6
North Dakota	481	587	128	468	596	0.26	24.0
Ohio	7,457	8,219	1,606	7,217	8,823	3.82	18.3
Oklahoma	1,996	2,179	418	1,991	2,410	1.04	20.7
Oregon	2,238	2,502	553	2,167	2,720	1.18	21.5
Pennsylvania	7,961	8,867	1,735	7,853	9,588	4.15	20.4
Rhode Island	686	761	155	683	839	0.36	22.3
South Carolina	2,653	2,849	579	2,475	3,053	1.32	15.1
South Dakota	488	584	122	481	602	0.26	23.3
Tennessee	3,467	3,880	776	3,526	4,302	1.86	24.1
Texas	12,871	14,563	3,534	12,410	15,943	6.90	23.9
Utah	1,112	1,284	278	1,164	1,443	0.62	29.8
Vermont	424	547	115	460	575	0.25	35.6
Virginia	5,061	5,646	1,219	4,959	6,179	2.67	22.1
Washington	3,995	4,438	946	3,667	4,613	2.00	15.5
West Virginia	1,143	1,240	256	1,081	1,337	0.58	17.0
Wisconsin	3,258	3,621	666	3,261	3,927	1.70	20.5
Wyoming	366	402	96	354	449	0.19	22.8
United States	188,744	210,180	43,387	185,955	229,442	99.21	21.6
Guam	N.A.	85	18	79	97	0.04	N.A.
N. Mariana Isl.	15	18	3	18	21	0.01	43.1
Puerto Rico	1,244	1,405	299	1,307	1,606	0.69	29.1
Virgin Islands	74	93	21	80	101	0.04	37.6
Grand Total	$190,076	$211,782	$43,729	$187,438	$231,168	100.00 %	21.6 %

Source: TRS and USF worksheets.

Estimates for 1995 and 1996 are revised.

Figures may not add to totals due to rounding.

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 Link-Up 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 19% in 1997.

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	159,732,983	4.1	158,219,924	4.4
1996	158,672,243	4.0	166,312,090	4.1	165,420,650	4.6
1997	NA	NA	173,863,869	4.5	173,705,523	5.0
1998	NA	NA	NA	NA	180,421,392	3.9

Source: Presubscribed lines and local loops: National Exchange Carrier Association.
Access lines: Statistics of Communications Common Carriers, 1997/1998 edition, Table 6.10, and Preliminary 1998, 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, 1997

		Price Cap		Non Price Cap		
STATE NAME	Number of Telephone Companies	Bell Company Loops	Other Company Loops	Average Schedule Company Loops	Other Company Loops	Total Loops
Alabama	30	1,924,968	297,606	48,636	133,481	2,404,691
Alaska	25	0	20,455	4,487	372,594	397,536
Arizona	16	2,558,783	144,054	0	29,322	2,732,159
Arkansas	28	941,852	206,251	23,176	197,255	1,368,534
California	22	16,838,970	4,457,991	0	185,771	21,482,732
Colorado	28	2,529,498	0	3,005	111,002	2,643,505
Connecticut	2	0	2,130,708	21,731	0	2,152,439
Delaware	1	532,170	0	0	0	532,170
Dist. of Columbia	1	919,999	0	0	0	919,999
Florida	12	6,222,466	4,105,019	0	163,449	10,490,934
Georgia	36	3,996,188	26,284	81,625	666,113	4,770,210
Hawaii	2	0	707,649	0	346	707,995
Idaho	21	488,173	148,028	4,491	40,148	680,840
Illinois	56	6,830,127	985,327	40,892	124,902	7,981,248
Indiana	42	2,164,982	1,163,258	95,571	46,846	3,470,657
Iowa	154	1,033,852	333,386	199,410	22,307	1,588,955
Kansas	39	1,331,425	136,602	19,851	96,946	1,584,824
Kentucky	19	1,173,620	716,110	142,732	31,594	2,064,056
Louisiana	20	2,261,587	0	9,486	164,265	2,435,338
Maine	20	678,653	0	32,584	97,186	808,423
Maryland	2	3,487,156	0	6,453	0	3,493,609
Massachusetts	3	4,460,078	0	2,805	1,066	4,463,949
Michigan	39	5,312,786	751,979	32,717	160,517	6,257,999
Minnesota	88	2,133,116	383,386	214,624	146,750	2,877,876
Mississippi	19	1,236,080	5,882	26,553	52,731	1,321,246
Missouri	44	2,499,418	656,313	24,718	143,567	3,324,016
Montana	18	350,983	8,191	3,620	145,266	508,060
Nebraska	41	522,260	364,970	27,928	80,276	995,434
Nevada	14	330,523	849,231	0	27,128	1,206,882
New Hampshire	12	767,486	0	1,932	48,704	818,122
New Jersey	3	5,992,697	198,847	0	9,406	6,200,950
New Mexico	15	767,814	93,595	0	39,950	901,359
New York	44	11,453,906	973,062	19,684	268,156	12,714,808
North Carolina	26	2,337,945	1,723,261	224,827	408,571	4,694,604
North Dakota	24	249,644	0	63,818	88,353	401,815
Ohio	42	4,010,838	2,230,903	65,581	421,500	6,728,822
Oklahoma	39	1,615,640	112,671	12,981	213,083	1,954,375
Oregon	33	1,332,560	541,649	11,894	136,292	2,022,395
Pennsylvania	36	6,156,891	1,048,081	505,949	240,516	7,951,437
Rhode Island	1	653,123	0	0	0	653,123
South Carolina	27	1,405,838	298,719	80,417	361,636	2,146,610
South Dakota	31	266,165	0	89,807	50,322	406,294
Tennessee	25	2,616,876	340,374	128,373	185,262	3,270,885
Texas	57	9,328,001	2,178,871	8,954	490,426	12,006,252
Utah	13	1,049,110	20,914	4,466	25,304	1,099,794
Vermont	10	333,927	0	4,173	56,142	394,242
Virginia	21	3,332,035	941,618	90,999	16,835	4,381,487
Washington	23	2,380,323	875,344	3,850	240,202	3,499,719
West Virginia	10	800,553	142,960	8,062	7,417	958,992
Wisconsin	88	2,209,723	521,722	201,833	362,573	3,295,851
Wyoming	10	237,080	7,399	0	39,766	284,245
United States	1,432	132,057,888	30,848,670	2,594,695	6,951,244	172,452,497
Guam	1	0	0	0	73,185	73,185
N. Mariana Isl.	1	0	20,639	0	0	20,639
Puerto Rico	2	0	0	0	1,256,646	1,256,646
Virgin Islands	1	0	0	0	60,902	60,902
Grand Total	1,437	132,057,888	30,869,309	2,594,695	8,341,977	173,863,869

TABLE 20.3
TELEPHONE LOOPS BY HOLDING COMPANIES AS OF DECEMBER 31, 1997
(GREATER THAN 50,000 LOOPS)

Holding Companies	Loops
Bell Atlantic Corporation	39,568,674
SBC Communications	32,885,829
BellSouth Telecommunications, Inc.	23,175,568
Ameritech	20,528,456
GTE Corporation	18,207,583
U S West, Inc.	15,899,361
Sprint Corporation (United)	7,347,926
Southern New England Telephone Company	2,130,708
Alltel Corporation	1,726,212
Puerto Rico Telephone Authority	1,256,646
Century Telephone Enterprises, Inc.	1,180,911
Frontier Corporation	1,032,765
Cincinnati Bell, Inc.	976,922
Citizens Utility Company	916,231
Telephone & Data Systems, Inc.	519,323
Aliant Communications Company	279,581
C-TEC Corporation	256,674
ATU Telecommunications	163,729
North State Telephone Company	118,096
Roseville Telephone Company	111,074
Rock Hill Telephone Company	105,967
The Concord Telephone Company	103,380
Lufkin-Conroe Communications, Inc.	101,217
Consolidated Communications, Inc.	74,919
Guam Telephone Authority	73,185
Horry Telephone Cooperative, Inc.	72,893
Conestoga Telephone & Telegraph Company	71,794
Standard Telephone Company	67,889
North Pittsburgh Telephone Company	67,783
MJD Communications, Inc.	66,438
Virgin Islands Telephone Corporation	60,902
Mankato Citizens Telephone Company	60,085
Hargray Communication Group, Inc.	57,945
Denver & Ephrata Telephone Company	54,137
Farmers Telephone Cooperative, Inc.	52,017
Other Companies	4,776,135
Total	173,863,869

Source: NECA universal service filings.

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	110.8	54.2	165.0	95.1	15.7	16.5
1997	114.4	58.1	172.5	96.5	17.9	18.6

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).

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

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-four were added in 1997, twenty-four codes were added in 1998, twenty-eight codes are to be added in 1999 and five are scheduled at this time to be added in 2000. The changes in area codes from 1984 to 2000 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.

Of the 215 area codes in use, over 70 may need new area codes within the next few years. In response to this, the FCC recently launched a telephone area code consumer information campaign. A "Consumer Advisory" on area codes is posted on the FCC's internet web site at http://www.fcc.gov on the World Wide Web. "Frequently Asked Questions" about area codes and telephone numbers can also be found on this web page.

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 code to be placed in service will be 866, which is scheduled to be released early in 2000, followed by 855. Database Service Management, Inc., maintains the database on toll-free numbers.

TABLE 21.1

AREA CODES ASSIGNMENTS
(1984-2000)

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 CODES ASSIGNMENTS - CONTINUED
(1984-2000)

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 CODES ASSIGNMENTS - CONTINUED
(1984-2000)

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
Colorado	2/98	303	720
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
Chicago	5/98	847	224
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
California	7/98	310	424
Louisiana	8/98	504	225
California	11/98	209	559
Pennsylvania	12/98	717	570
Pennsylvania	12/98	215	267
Pennsylvania	12/98	610	484
Nevada	12/98	702	775
Texas (Houston)	1/99	281	832
Texas (Houston)	1/99	713	832
Alberta	1/99	403	780
California	1/99	408	669
California	2/99	805	661
Texas	2/99	512	361
Arizona	3/99	602	480
Arizona	3/99	602	623
Kentucky	4/99	502	270
New York	4/99	718	347
Missouri	5/99	314	636
Mississippi	5/99	601	662

TABLE 21.1

AREA CODES ASSIGNMENTS - CONTINUED
(1984-2000)

Location	Date	Previous Code	Added Code
Florida	5/99	407	321
California	6/99	619	858
New Jersey	6/99	609	856
Michigan	6/99	616	231
Virginia	6/99	703	571
New York (Manhattan)	7/99	212	646
Texas (Dallas)	7/99	214	469
Texas (Dallas)	7/99	972	469
Oregon	7/99	503	971
Wisconsin	9/99	414	262
Florida	9/99	941	863
Tennessee	11/99	423	865
New York	11/99	516	631
California	6/00	619	935
California	10/00	714	657

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

* 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

* 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

* 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.

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 and LTS payments from 1986 to 1998. Table 22.2 shows projected USF, LTS, and LSS payments by state for 1998. It should be noted that these projections do not include subsequent quarterly true-ups.

TABLE 22.1
UNIVERSAL SERVICE FUND AND LONG-TERM SUPPORT PAYMENT HISTORY

Year	Universal Service Fund		Long-Term Support	
	Actual Payments	Cumulative Payments	Actual Payments	Cumulative Payments
1986	$55,626,903	$55,626,903	$0	$0
1987	125,691,874	181,318,777	0	0
1988	183,268,189	364,586,966	0	0
1989	264,553,840	629,140,806	235,700,497	235,700,497
1990	339,176,069	968,316,875	262,563,073	498,263,570
1991	484,814,443	1,453,131,318	271,729,978	769,993,548
1992	609,361,768	2,062,493,086	305,735,598	1,075,729,146
1993	749,546,328	2,812,039,414	322,651,085	1,398,380,231
1994	725,434,165	3,537,473,579	346,644,678	1,745,024,909
1995	749,546,328	4,287,019,907	382,255,111	2,127,280,020
1996	762,697,762	5,049,717,669	425,624,307	2,552,904,327
1997	793,937,100	5,843,654,769	469,515,463	3,022,419,790
1998	826,636,987	6,670,291,756	471,936,214	3,494,356,004

Source: Industry Analysis Division, *Monitoring Report.*

TABLE 22.2
PROJECTED HIGH-COST SUPPORT PAYMENTS BY STATE: 1998*

State	Universal Service Fund	Long-Term Support	Local Switching Support	Total Support
Alabama	$21,947,616	$6,812,558	$10,153,266	$38,913,440
Alaska	31,963,777	16,287,535	14,909,157	63,160,470
Arizona	19,492,163	2,996,004	7,785,833	30,274,001
Arkansas	46,089,633	14,974,038	9,584,889	70,648,560
California	28,886,748	15,252,293	8,255,564	52,394,605
Colorado	29,084,089	12,480,408	4,354,619	45,919,116
Connecticut	0	173,885	1,229,387	1,403,271
Delaware	0	0	0	0
Dist. of Columbia	0	0	0	0
Florida	11,300,827	6,216,006	4,622,852	22,139,686
Georgia	41,660,333	17,469,442	12,673,651	71,803,426
Hawaii	0	253,710	645,216	898,926
Idaho	19,505,787	2,651,783	6,406,782	28,564,351
Illinois	5,717,032	5,260,687	11,745,592	22,723,310
Indiana	2,922,762	5,051,789	8,062,461	16,037,012
Iowa	5,682,281	7,444,862	15,926,049	29,053,192
Kansas	36,263,126	9,228,572	12,687,975	58,179,674
Kentucky	14,146,447	5,274,410	5,764,233	25,185,091
Louisiana	41,626,484	17,112,419	8,025,003	66,763,905
Maine	5,142,391	5,566,003	6,145,029	16,853,424
Maryland	0	93,174	497,916	591,089
Massachusetts	6,686	89,836	270,257	366,779
Michigan	13,982,051	8,628,866	10,042,616	32,653,533
Minnesota	8,924,455	11,401,747	18,068,447	38,394,648
Mississippi	18,338,576	4,903,515	4,226,669	27,468,760
Missouri	29,578,017	10,545,430	9,463,755	49,587,202
Montana	23,467,678	9,989,579	9,693,921	43,151,178
Nebraska	6,281,317	3,723,244	10,408,820	20,413,381
Nevada	3,252,723	1,029,177	4,789,246	9,071,146
New Hampshire	2,473,619	1,583,426	4,873,081	8,930,126
New Jersey	2,012,385	0	1,097,875	3,110,260
New Mexico	19,260,613	5,929,144	9,278,955	34,468,711
New York	10,664,865	7,008,888	18,238,267	35,912,019
North Carolina	21,836,970	13,015,756	6,240,669	41,093,395
North Dakota	5,074,893	5,440,606	11,023,045	21,538,543
Ohio	4,476,642	5,189,569	5,023,827	14,690,038
Oklahoma	27,353,330	15,826,197	15,833,411	59,012,937
Oregon	18,563,458	10,471,338	7,584,140	36,618,937
Pennsylvania	1,383,836	14,037,268	8,771,332	24,192,436
Rhode Island	0	0	0	0
South Carolina	23,680,509	9,971,023	12,919,526	46,571,058
South Dakota	3,160,201	4,331,610	10,412,199	17,904,010
Tennessee	8,152,076	9,452,075	10,515,599	28,119,750
Texas	75,837,949	29,658,890	19,282,803	124,779,642
Utah	2,981,619	1,268,015	4,761,353	9,010,987
Vermont	4,144,186	3,291,398	4,766,929	12,202,512
Virginia	4,780,376	3,348,990	5,225,657	13,355,023
Washington	23,442,891	12,470,927	6,955,915	42,869,733
West Virginia	17,173,230	1,069,241	3,064,611	21,307,082
Wisconsin	13,108,671	13,716,424	24,465,366	51,290,461
Wyoming	12,501,742	4,082,462	4,528,568	21,112,772
United States	767,327,061	372,074,217	411,302,329	1,550,703,607
Guam	0	1,036,397	0	1,036,397
N. Mariana Isl.	3,601,484	0	1,332,414	4,933,899
Puerto Rico	48,786,061	93,890,023	0	142,676,084
Virgin Islands	11,315,559	4,935,577	0	16,251,136
Grand Total	$831,030,165	$471,936,214	$412,634,743	$1,715,601,122

Source: Industry Analysis Division, *Monitoring Report*.

* Note that actual support payments are reported in Table 22.1 and projected support payments are reported in Table 22.2. Projected support payments do not include quarterly true-ups. Actual support payments are not available at the state level.

APPENDIX

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*. A preliminary report for 1998 is available on the **FCC-State Link**. The 1997/1998 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/edgar.htm>.

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 indexes (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**.

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

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 Lockheed Martin IMS. Additional information on NANPA can be found on the internet at <http://www.nanpa.com>.

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/>.

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 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.

Table 20.1 contains lines from the United States Telephone Association (USTA). USTA (1401 H Street N.W., Washington D.C. 20005, 202-326-7300) represents virtually all 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>.

For more information on the following subjects, the following individuals may be contacted at 202-418-0940:

Access Charges	Jim Zolnierek
Complaints	Craig Stroup
Consumer Expenditures	Phil Cheilik
Employment	Jim Zolnierek
Equal Access	Jim Eisner or Jim Lande
International Statistics	Linda Blake or Jim Lande
Lifeline	Suzanne McCrary or Larry Povich
Lines	Alex Belinfante or Jim Eisner
Local Competition.	Ellen Burton or Jim Zolnierek
Market Shares	Jim Zolnierek or Katie Rangos
Minutes	Alex Belinfante
Prices and Rates	Phil Cheilik or Jim Eisner
Rate of Return	Katie Rangos
Residential Telephone Usage	Jim Eisner
Subscribership and Penetration	Alexander Belinfante
Technology	Jonathan Kraushaar
Telecommunications Relay Fund Worksheets	Jim Lande or Katie Rangos
Universal Service	Jim Eisner or Alex Belinfante

Customer Response

Publication: Trends In Telephone Service, September 1999

You can help us provide the best possible information to the public by completing this form and returning it to the Industry Analysis Division of the FCC's Common Carrier Bureau.

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