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July 22, 1987

## FCC RELEASES STUDY ON TRENDS IN TELEPHONE SERVICE

The FCC has released a report on Trends in Telephone Service reflecting information from the consumers' standpoint. The report collects into a single source and puts into context information from other, detailed reports prepared by the Industry Analysis Division of the Common Carrier Bureau.

A review of the data currently available shows continued good news for consumers:

- o The number and percentage of households with telephone service is increasing. Telephone penetration stood at 92.5 percent nationwide in March 1987, up from 91.4 percent in November 1983 when the Commission first collected this information. Five million households have been added to the nation's telephone system during this period.
- o Equal access is proceeding apace. By the end of 1986, nearly 70% of all subscribers could choose their primary long-distance carrier for easy 1 + dialing, compared to less than 4% at the end of 1984.
- o Telephone service price increases, which peaked in 1980-84, have moderated substantially. Local rate increases have slowed dramatically, and interstate long distance usage rates for residential customers have fallen over 30% since the beginning of 1984.
- o Based on actions of state regulatory commissions and the amount of pending rate hike requests by the telephone companies, local rate increases for the coming year, if any, should be quite moderate. During the first half of 1987, rate reductions and refunds ordered by state commissions exceeded any increases granted. This is the first time that this has happened since the FCC began monitoring state rate cases.
- o The number of long-distance competitors appears to be increasing. Over 500 long-distance carriers serve in one part or another of the nation, and 219 carriers provided service through 1 + dialing in one or more states.

This report is available for reference in Room 537, Industry Analysis Division, Common Carrier Bureau, 1919 M Street, N.W. Copies may be purchased by calling International Transcription Service at (202) 857-3800.

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For further information, contact the Industry Analysis Division at (202) 632-0745.

Trends in Telephone Service

Industry Analysis Division

Common Carrier Bureau

Federal Communications Commission

July 1987

## Trends in Telephone Service

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### INTRODUCTION:

As do most regulatory agencies, the Federal Communications Commission accumulates a great deal of information from the companies it regulates. Such information is essential to economic regulation, and is provided to the Commission both in the tariff process and in periodic reports. Most of this information deals with investments, revenues, expenses, and earnings. Only in recent years has the Commission begun to systematically collect information from the consumers' perspective. This paper summarizes the range of information now available on a routine basis that extends beyond the essential information needed for economic regulation.

### TELEPHONE SUBSCRIBERSHIP:

Under contract with the Federal Communications Commission, 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 every month by an independent and 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. According to the Current Population Survey, five million households have been added to the nation's telephone system since November 1983 while the number of households without telephone service has fallen.

Table 1  
Telephone Penetration in the U.S.

<u>Date</u>	<u>Households</u> (millions)	<u>Households</u> <u>with</u> <u>Telephones</u> (millions)	<u>Percentage</u> <u>with</u> <u>Telephones</u>	<u>Households</u> <u>without</u> <u>Telephones</u> (millions)	<u>Percentage</u> <u>without</u> <u>Telephones</u>
November 1983	85.8	78.4	91.4%	7.4	8.6%
March 1984	86.0	78.9	91.8	7.1	8.2
July 1984	86.6	79.3	91.6	7.3	8.4
November 1984	87.4	79.9	91.4	7.5	8.6
March 1985	87.4	80.2	91.8	7.2	8.2
July 1985	88.2	81.0	91.8	7.2	8.2
November 1985	88.8	81.6	91.9	7.2	8.1
March 1986	89.0	82.1	92.2	6.9	7.8
July 1986	89.5	82.5	92.2	7.0	7.8
November 1986	89.9	83.1	92.4	6.8	7.6
March 1987	90.2	83.4	92.5	6.8	7.5

EQUAL ACCESS:

At the end of 1984, the Bell Operating Companies served 91 million of the nation's 114 million telephone lines (approximately 80%). Under the Modification of Final Judgment (MFJ) which settled the AT&T antitrust case, the Bell Operating Companies were obligated to begin converting offices to equal access during 1984, to convert one-third of their lines by September 1985, and to make equal access generally available by September 1986. By the end of 1986, the Bell Operating Companies had converted about three quarters of their lines to equal access. The remaining lines are at smaller, older offices where equal access will be provided in future years as the offices are converted to more modern equipment. Independent telephone companies are also converting offices to equal access, although on a somewhat different time schedule.

Table 2  
Equal Access Conversion Schedule \*  
(Percentage of Lines Converted)

	Bell Operating Companies	Independent Telephone Companies	Total Industry
December 31, 1984	3.9%	1.5%	3.5%
December 31, 1985	51.1	4.9	43.7
December 31, 1986	74.5	38.6	68.7
December 31, 1987	82.2	58.4	78.3

\* Data from Tariff Review Plans filed November 7, 1986.

CHANGES IN THE PRICE OF 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. The Consumer Expenditure Survey, which is used to provide weights for consumer price indexes, indicates that the average American household spends about as much on long distance service as on local service. The following sections illustrate the range of information available from BLS programs.

1. Long Term Trends in the Overall Price of Telephone Service:

A price index for telephone services was first published in 1935. Since that time, telephone prices have tended to increase at a slower pace than most other prices. Table 3 shows long run changes in telephone prices, the overall CPI and each of the seven major categories that currently constitute the CPI, and for several services that are often characterized as being public utilities. The price of telephone service has increased less rapidly than almost any other category over both the entire 50 year period for which indexes are available and for the most recent ten year period.

Table 3  
Annual Rate of Change For Various Price Indexes\*

	1935 to 1986	1976 to 1986
CPI all goods and services	4.16%	6.77%
CPI major categories		
- food & beverages	**	5.80
- housing	**	7.51
- apparel & upkeep	4.24	3.48
- transportation	4.11	6.38
- medical care	4.99	8.91
- entertainment	**	5.54
- other goods & services	**	7.85
CPI telephone service	2.30	4.66
CPI public transportation	5.13	9.36
CPI piped gas	4.11	10.62
CPI electricity	2.49	7.59
CPI sewer & water maintenance	**	8.32

\* Exponential rates calculated using the first and last years of each comparison period.

\*\* Series not established until after 1935.

2. Recent Changes in the Overall Price of Telephone Service:

Changes in telephone prices tend to lag behind other price changes. Overall inflation in the American economy peaked in 1979 and 1980. In contrast, the price of telephone services rose most rapidly during the years 1981 through 1984, with the rate of increase declining in 1985 and again in 1986. In Table 4, the annual rate of change is shown for the overall CPI and the CPI for telephone service for each of the last ten years.

Table 4  
Annual Rate of Change in Price Indexes

	CPI: All goods & Services	CPI: Telephone Services	-
1977 *	6.8%	.5%	
1978 *	9.0	.8	
1979 *	13.3	.8	
1980 *	12.4	4.5	
1981 *	8.9	11.8	
1982 *	3.9	7.3	
1983 *	3.8	3.6	
1984 *	4.0	9.2	
1985 *	3.8	4.7	
1986 *	1.1	2.7	
1987 **	2.3	-0.7	

\* Measured from December to December.

\*\* Measured from December 1986 to May 1987. This represents the percentage change occurring during these months rather than an annual rate of change.

### 3. Price Indexes for Local Service

The Bureau of Labor Statistics publishes a number of price indexes related to local telephone service, two of which are of considerable interest from a consumer perspective. The CPI index of local telephone charges is based on a broadly defined "market basket" that includes monthly service charges, message unit charges, equipment, installation, enhanced services (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 and all other expenditures. The annual rates of change for these two indexes are presented in Table 5. In the CPI index, about half of the 1984 increase occurred during January, reflecting adjustments made at the time of AT&T's divestiture of its operating companies. In January 1987, when the PPI index was revised to include subscriber line charges, revised index numbers for 1985 and 1986 were issued based on the new methodology.

Table 5  
Annual Rate of Change in Price Indexes  
For Local Telephone Service

	CPI: All Local Charges	PPI: Monthly Service Charges For Residential Service
1978 *	1.5%	3.1%
1979 *	1.7	1.6
1980 *	7.1	7.1
1981 *	12.6	15.6
1982 *	10.8	9.0
1983 *	3.2	0.2
1984 *	17.1	10.4
1985 *	8.9	12.4
1986 *	7.1	8.9
1987 **	2.8	-0.7

\* Measured from December to December.

\*\* Measured from December 1986 to May 1987. This represents the percentage change occurring during these months rather than an annual rate of change.

4. Price Indexes for Long Distance Service:

CPI data is available for intrastate toll and interstate toll services since December 1977. Table 6 presents the annual changes in these series for recent years. The high inflation of the late 1970's is reflected in the long distance price increases beginning in 1980. Intrastate toll rates have stabilized since that time, and interstate rates have steadily fallen since 1983.

Table 6  
Annual Rate of Change in Price Indexes  
For Long Distance Service \*

	CPI: Interstate Toll calls	CPI: Intrastate Toll calls
1978 *	-0.8%	1.3%
1979 *	-0.8	0.2
1980 *	3.5	6.1
1981 *	14.6	4.1
1982 *	2.6	7.4
1983 *	1.4	3.7
1984 *	-4.3	0.5
1985 *	-3.8	0.3
1986 *	-9.5	0.4
1987 **	-9.2	-1.6

\* Measured from December to December.

\*\* Measured from December 1986 to May 1987. This represents the percentage change occurring during these months rather than an annual rate of change.

5. Very Recent Trends and the Near Term Outlook:

Telephone prices have historically lagged behind inflation in the rest of the economy and, to a lesser extent, behind changes in interest rates. With both inflation and interest rates having declined, future changes in telephone prices should be more moderate than during the early 1980's. During 1986, the CPI index for all telephone services increased only 2.7% -- the smallest annual increase since 1979. With virtually no large rate cases pending before state public utility commissions, changes in local rates during the next year should be moderate.



The residential subscriber line charge increased from \$2.00 per month to \$2.60 per month on July 1, 1987. This change should result in an increase of about 4.4% in the PPI residential local service index, and about 3.3% in the CPI local service index. Also on July 1, AT&T lowered its prices for direct dialed interstate calls by 4.8%. Competing companies have announced similar decreases. As a result of these price cuts, the CPI and PPI series for interstate calls will decline by about 4.3%. The net effect of the various price changes occurring July 1 should be a 1.4% increase in the CPI index for all telephone services. When combined with the price decreases in telephone services occurring earlier this year, the CPI index of all telephone services should be up less than 1% through July. There are no further changes in subscriber line charges scheduled for the remainder of 1987 and no large rate cases pending before state regulatory commissions. As a result, it now appears that increases in the price of telephone service purchased by residential customers during 1987 may be well below the overall rate of inflation for the first time since 1980.

#### INFORMATION ON RATE LEVELS:

The price indexes published by the Bureau of Labor Statistics indicate percentage changes in the price of the telephone services. The BLS does not publish the actual level of rates.

Local rates are regulated by state public utility commissions and vary so much from area to area that it is hard to characterize any rate as "typical". In most states, the Bell Operating Companies and larger independents charge higher rates in metropolitan areas than in rural areas -- a pricing practice that dates back to the turn of the century and is traditionally justified in the belief that the value of the service provided is higher for subscribers with larger local calling areas. California differs from most states in that rates are averaged throughout the state. There, the basic local rate is \$8.25 for areas served by Pacific Bell and \$9.75 for areas served by General of California.

Table 7 presents our estimate of average local residential rates in April 1987. It is based on a survey using the same sampling areas and weights used by the BLS in constructing the Consumer Price Index. The national average for flat rate residential service was \$12.51 monthly. Lower priced service alternatives are typically available, at an average monthly charge of \$6.08.

Table 7  
Average Monthly Telephone Rates  
as of April 1987

	Cost*	Tax*	Total*
Lowest generally available price**	\$ 6.08	\$ .61	\$ 6.69
Federal and State subscriber line charges	<u>2.08</u>	<u>.21</u>	<u>2.29</u>
Total	8.16	.82	8.98
Lowest generally available price with 50 five-minute messages	8.56	.87	9.43
Federal and State Subscriber line charges	<u>2.08</u>	<u>.21</u>	<u>2.29</u>
Total	10.64	1.08	11.72
Private rotary line, unlimited calling***	12.51	1.30	13.81
Federal and State subscriber line charges	<u>2.08</u>	<u>.21</u>	<u>2.29</u>
Total	14.59	1.51	16.10
Inside wire maintenance charge	.82	.10	.92
Installation of rotary service where no premise visit is required	45.12	2.89	48.01
Minimum first payment if no deposit or advance if required ****			34.67
Minimum first payment if a deposit advance will be required ****			90.58

\* Cost includes certain surcharges. Taxes include emergency 911 service fees.

\*\* The lowest generally available price is the monthly charge for party line or measured service if available in the downtown area. The private rotary line unlimited calling rate was used in the 5 cities where lower rates were not available. The average does not include lifeline rates or subsidized rates which are only available to customers who meet "means" criteria such as age or use of food stamps.

\*\*\* Unlimited calling service is not available in New York City or Chicago. Equivalent rates were estimated as the measured service rate with 100 message units.

\*\*\*\* Assuming rotary service with unlimited calling, no toll usage, and the customer has the installation charge billed in installments if permitted.

In Table 8, the prices of several long distance calls are shown based on AT&T's tariffed rates during January 1984 and July 1987. During this period, AT&T's per minute charges for interstate calls have been reduced about 32% for the average residential customer.

Table 8  
Changes in the Price of Directly Dialed Long Distance Calls  
(AT&T Prices from Washington, D.C.)

For calls to:		Five minute calls			Ten minute calls		
		January 1984	July 1987	Percentage change	January 1984	July 1987	Percentage change
New York City*	Day	\$2.14	\$1.31	-39%	\$4.09	\$2.56	-37%
	Evening	1.28	.81	-37	2.45	1.59	-35
	Night	.86	.61	-29	1.64	1.20	-27
Atlanta & Chicago**	Day	2.34	1.50	-36	4.49	2.95	-34
	Evening	1.40	.93	-34	2.69	1.83	-32
	Night	.94	.70	-26	1.80	1.39	-23
Los Angeles***	Day	2.70	1.55	-43	5.15	3.05	-41
	Evening	1.62	.96	-41	3.09	1.90	-39
	Night	1.08	.72	-33	2.06	1.42	-31

\* The prices shown for calls between New York City and Washington, D.C. apply to all calls with distances between 125 and 292 miles.

\*\* The prices shown apply to all calls with distances between 431 and 925 miles.

\*\*\* The prices shown apply to all calls with distances between 1911 and 3000 miles.

#### STATE TELEPHONE RATE CASES:

The actions of state regulatory commissions provide important indicators of future rate changes. Rate cases completed by the state commissions tend to result in immediate rate changes. At the same time, the amount of rate relief requested by local telephone companies, but not yet acted upon by state commissions, provides an indicator of future rate changes.

Beginning in 1984, we have compiled quarterly data on major rate cases completed by state public utility commissions. On average, state commissions have tended to grant slightly less than half of the increases requested by telephone companies. During the first half of 1984, state commissions completed action on a number of extraordinarily large rate cases. After the first half of 1984, however, the level of activity in state cases has diminished substantially. In 1986, state commissions granted less than \$300 million in revenue increases, compared with nearly \$4 billion in 1984. During the first half of 1987, the dollar amount of rate reductions and refunds ordered by state commissions exceeded the dollar amount of rate increases authorized. The first half of 1987 represented the first period that this has occurred since the FCC began monitoring state rate cases.

Table 9  
Completed Telephone Rate Cases  
(Millions of Dollars)

	Revenue Increases <u>Requested</u>	Revenue Increases <u>Granted</u>	<u>Percentage Granted</u>
1984 First quarter	\$ 2,033.8	\$ 1,175.6	58%
Second quarter	3,982.0	2,054.2	52
Third quarter	531.0	284.5	54
Fourth quarter	774.6	361.2	47
Total	<u>7,321.4</u>	<u>3,875.5</u>	<u>53%</u>
1985 First quarter	471.4	246.3	52
Second quarter	584.5	314.8	54
Third quarter	648.5	286.5	44
Fourth quarter	936.1	307.3	33
Total	<u>2,640.5</u>	<u>1,154.9</u>	<u>44%</u>
1986 First quarter	826.2	58.0	7
Second quarter	654.1	57.9	9
Third quarter	276.3	173.3	63
Fourth quarter	1.8	0.8	45
Total	<u>1,758.4</u>	<u>290.0</u>	<u>16%</u>
1987 First quarter	5.8	(2.4)	N.M.*
Second quarter	49.6	(90.2)	N.M.*

\* N.M.: Not meaningful

At the time of divestiture, rate cases pending before state public utility commissions totaled nearly \$7 billion dollars. By June 1987, the total cases pending had declined to about \$100 million. Since it typically takes more than a year for a rate case to be completed, the low level of pending cases should indicate a correspondingly low level of state and local increases during at least the next year.

Table 10  
 Summary of Telephone Revenue Requests Pending  
 Before State Public Utility Commissions  
 (Millions of Dollars)

<u>Date</u>	<u>Revenue Requests Pending</u>
September 30, 1983	\$6,493.4
December 31, 1983	6,970.0
March 31, 1984	4,851.9
June 30, 1984	1,675.6
September 30, 1984	3,387.5
December 31, 1984	3,672.3
March 31, 1985	3,779.0
June 30, 1985	3,316.3
September 30, 1985	2,664.2
December 31, 1985	1,437.3
March 31, 1986	766.2
June 30, 1986	362.0
September 30, 1986	315.7
December 31, 1986	322.6
March 31, 1987	135.0
June 30, 1987	108.1

LONG DISTANCE COMPETITORS:

In 1983, the Federal Communications Commission decided to "forbear" from regulating "non-dominant" long distance carriers. Among carriers providing interstate service, only AT&T remains subject to comprehensive economic regulation. Because the FCC has exempted other carriers from the burdens of regulation, the Commission collects no data from those carriers.

Nevertheless, we have two different sources of information on the number of long distance competitors. The first source, Carrier Identification Codes, provides information on the number of carriers seeking to acquire certain types of interconnecting arrangements with local telephone companies.

Any long distance carrier that seeks to use "trunk side" connections with local operating companies is provided a three digit identification code so that traffic can be efficiently routed to the carrier. All firms seeking to purchase either Feature Group B or Feature Group D access from local telephone companies are assigned Carrier Identification Codes by the administrators of the North American Numbering Plan. We believe that the number of firms seeking and obtaining these codes provides information on the entry of new firms into the long distance market during the period prior to 1986:

Table 11  
Number of Firms with Carrier Identification Codes

June 30, 1982:	13
December 31, 1982:	11
June 30, 1983:	25
December 31, 1983:	42
June 30, 1984:	65
December 31, 1984:	123
June 30, 1985:	179
December 31, 1985:	217
June 30, 1986:	276
December 31, 1986:	334
June 30, 1987:	397

Beginning in 1986, we have received information provided by each of the seven Regional Holding Companies that were formed as a result of the AT&T divestiture. Each regional company has provided a list of carriers purchasing "switched access" from their Bell Operating Companies. Because all long distance carriers purchase access from local telephone companies, the number of such carriers can be supplied by local telephone companies without imposing reporting requirements on long distance carriers.

The number of long distance carriers is summarized in the following two tables. Table 12 provides information on the total number of long distance carriers purchasing switched access and the total number of firms purchasing equal access.

Table 12  
Number of Long Distance Telephone Carriers

		Carriers that use Equal Access	All carriers
1986	January	157	*
	February	166	*
	March	169	*
	April	175	475
	May	178	*
	June	183	*
	July	183	494
	August	193	519
	September	190	506
	October	200	516
	November	204	521
	December	210	533
1987	January	215	551
	February	217	559
	March	219	561

\* Data not available

Table 13 includes only long distance carriers that purchase equal access. Information is provided for 47 states and the District of Columbia. Three states -- Alaska, Connecticut, and Hawaii -- are not served by the Bell Operating Companies from which we have received the data and are therefore not represented in the table.

Table 13  
Total Firms Purchasing Equal Access  
From Bell Operating Companies: 1987

STATE	JAN	FEB	MAR		JAN	FEB	MAR
ALABAMA	13	13	13	NEVADA	7	7	7
ARIZONA	19	20	20	NEW HAMPSHIRE	3	3	3
ARKANSAS	6	6	6	NEW JERSEY	20	21	21
CALIFORNIA	22	22	23	NEW MEXICO	5	5	5
COLORADO	20	19	19	NEW YORK	22	22	23
DELAWARE	4	5	5	NORTH CAROLINA	12	12	12
DISTRICT OF COLUMBIA	13	13	14	NORTH DAKOTA	7	6	6
FLORIDA	20	21	20	OHIO	17	17	17
GEORGIA	15	14	16	OKLAHOMA	12	12	12
IDAHO	8	7	7	OREGON	19	19	19
ILLINOIS	19	20	19	PENNSYLVANIA	18	18	18
INDIANA	15	15	15	RHODE ISLAND	8	8	8
IOWA	11	11	11	SOUTH CAROLINA	7	8	8
KANSAS	15	16	16	SOUTH DAKOTA	4	4	4
KENTUCKY	11	11	12	TENNESSEE	15	15	15
LOUISIANA	19	19	19	TEXAS	50	50	51
MAINE	4	6	4	UTAH	10	10	10
MARYLAND	11	10	11	VERMONT	3	4	4
MASSACHUSETTS	10	10	10	VIRGINIA	9	9	9
MICHIGAN	13	14	14	WASHINGTON	19	19	19
MINNESOTA	15	15	15	WEST VIRGINIA	6	5	6
MISSISSIPPI	6	6	6	WISCONSIN	27	27	25
MISSOURI	21	21	21	WYOMING	6	6	6
MONTANA	4	4	4				
NEBRASKA	12	12	12				

UNDUPLICATED TOTAL 215 217 219



Within any state, a carrier purchasing access may concentrate its efforts in serving only a few exchanges or a small portion of the state. Thus, the number of carriers available to a particular customer will tend to be far smaller than the number of long distance carriers that purchase access somewhere in the state. Since the larger long distance carriers serve many states, they are recorded as purchasing access in each state. Because of this, the state figures can not be added to estimate a national total of long distance carriers.

During March 1987, New Hampshire was reported to have the fewest long distance carriers purchasing equal access (3) and Texas was reported to have the largest number (51). A total of about 560 carriers were reported as serving in one part or another of the nation in March. Of these, 219 different long distance carriers were reported as purchasing equal access.

\* \* \* \* \*

The statistical data presented above provides a brief summary of several types of information now being collected by the FCC's Industry Analysis Division. In most cases, the reports underlying this summary provide a greater level of detail and are available in the Division's Public Reference Room, Room 537 at 1919 M Street, N.W. For more information, the following individuals may be contacted at (202) 632-0745:

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Prices and Rates: .....	Jim Lande
State Rate Cases: .....	Linda Blake
Equal Access: .....	Art David
Long Distance Companies and CIC Codes:.....	Katie Rangos