10. Infrastructure

The infrastructure information contained in this section is based upon data collected by the FCC as part of its price-cap monitoring procedures.[1] This summary is intended to highlight changes in the use of technology in the local telephone company plant.   The data (ARMIS 43-07 reports[2]) upon which this infrastructure summary is based are due April 1 for the previous calendar year. This infrastructure section includes data through calendar year 2004.[3] The most recent data were due April 1, 2005. Revisions are only included in this section if they are filed early enough for inclusion; however, this section contains many revisions to historical data filed subsequent to cutoff dates for last year's summary.

Background

The data items presented here summarize ARMIS Report 43-07, which is filed by local exchange carriers subject to mandatory price-cap regulation. The information contained in this section is for the years 1994 through 2004. Recent changes to our infrastructure data collection process are reflected beginning with filed data for calendar year 2003. A number of items were eliminated from reporting requirements and historical information for these items is no longer shown in this section.[4] Most of the eliminated items relate to switching technologies that have

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1   *Policy and Rules Concerning Rates For Dominant Carriers*, CC Docket No. 87-313, Second Report and Order, 5 FCC Rcd 6786 (1990) (*LEC Price Cap Order*), Erratum, 5 FCC Rcd 7664 (Com. Car. Bur. 1990); *Policy and Rules Concerning Rates For Dominant Carriers*, CC Docket No. 87-313, Memorandum Opinion and Order, 8 FCC Rcd 7474 (Com. Car. Bur. 1993) (*Service Quality Modifications Order*).

2   ARMIS, an acronym for Automated Reporting Management Information System, is a publicly available repository of financial, plant, demand, and quality-of-service data. Additional infrastructure data are contained in the ARMIS 43-08 report. See *Statistics of Communications Common Carriers*, published annually by the Wireline Competition Bureau's Industry Analysis and Technology Division for a compilation of ARMIS 43-08 infrastructure data.

3   See *Infrastructure of the Local Operating Companies Aggregated to the Holding Company Level*, released April 24, 1995 for data for the years 1989 and 1990. Some of the data for those early years are not a part of this summary and may contain discrepancies that make the early data inconsistent with that of later years. Reports containing data for the early years can be found in the infrastructure section of the Wireline Competition Bureau Statistical Reports Internet site at www.fcc.gov/wcb/stats under the file names INFRA99.ZIP, INFRA98.ZIP, INFRA95.ZIP, and INFRA93.ZIP. More recent reports can be found in Section 10 of earlier versions of this report on the same web page under the section covering the Commission's Federal-State Joint Board Monitoring Reports.

4   Historical information for the entries that are no longer reported can be found in *Monitoring Reports* released prior to 2003 and in the reports noted in footnote 3.

become obsolete or reflect virtually complete deployment of capabilities such as touch-tone capability. New data are being collected on hybrid copper/fiber interfaces in the network but most of the carriers have requested proprietary treatment for the data. As a result, the data are not provided in this section.

The ARMIS 43-07 reports are filed only by those local exchange companies originally subject to mandatory price-cap regulation--the Bell operating companies (BOCs).[5] Together, these large companies are estimated to serve about 90% of all incumbents' access lines nationwide. The data are generally filed at the study area level, which typically consists of a company's operations within a state. The state-by-state data are available from the Commission's ARMIS web page at <http://www.fcc.gov/wcb/eafs/>.[6] This web page has been redesigned and provides more features than were previously available. The information summarized in this section is organized into two sets of tables with the following designations: Table 10.1 shows switching system data and gross plant expenditures covering all types of plant. Table 10.2 shows transmission system data. Each set of tables contains segments for each of the regional Bell operating companies (along with Verizon's GTE companies shown separately) with aggregated summary data for all the reporting companies. The data summarized for each holding company reflect the aggregate of data filed for individual states or study areas and should be useful in assessing overall trends. In some cases, refiled data may cause values to differ from prior summary reports. Recent data reflect mergers of GTE and Bell Atlantic, which are now under the name Verizon Communications, and the acquisitions by SBC of Ameritech, Pacific Telesis, and Southern New England Telephone.

<u>Description of the Technologies and Analysis of the Data</u>

The data in the attached tables provide an historical series for a variety of plant elements that illustrate the deployment of technology in the networks of the major local exchange carriers.[7] The data items provide a picture of the well established technologies in use. This section highlights key trends in the evolution of basic telecommunications infrastructure and illustrates the replacement of older technologies with newer ones. In some cases, older

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5   See footnote 1.

6   To access ARMIS data from <www.fcc.gov/wcb/eafs> click on the words "download ARMIS data" and select the desired report, table and row(s)." To access data instructions and definitions applicable to the 43-07 report click on the words "ARMIS site map" at the top of the second screen and then select the 43-07 report and table desired.

7   A number of irregularities including time series anomalies have been noted in the data. The companies are typically notified of these observed problems and either file revisions or explanations. Revisions are initially made available on the ARMIS database website noted above.

technologies either no longer exist or are in very limited use. This section reflects recent revisions to the ARMIS 43-07 report from which the data in this summary are obtained.[8]

ARMIS data currently collected only cover circuit switches that provide a dedicated path through the network for the duration of a call, not routers or switches that are used to handle Internet traffic or in connection with frame relay and ATM services that are specifically designed to handle data packets.[9] Almost all of the major local exchange carrier switches are digital. More than 40 percent of these are ISDN capable. However, the rate at which new ISDN switching capability is being added to the network has slowed considerably, in recent years with 136 additional ISDN capable switches being reported in 2004. In 2004, the reported number of equipped ISDN Primary Rate Interfaces increased about 2 percent, from 556,226 to 567,255 and ISDN basic rate interfaces also increased about 2%.[10]

A number of transmission elements are included in Table 10.2. Definitions for these elements can be found on the Commissions ARMIS website noted above. These illustrate the rapid development of fiber capacity in terms of terminations, sheath kilometers, and links. The number of sheath kilometers of fiber more than doubled over the decade 1994-2004, with about 42,000 new fiber sheath kilometers being reported in 2004. During the same period, the number of sheath kilometers of copper remained steady at somewhat over 5 million, and other sheath data, in relative terms, were not significant.

Table 10.2 also highlights the relative magnitude of equipped and working channels. Copper working channels have declined in 2004, while fiber working channels increased. Total interoffice circuit links have also declined from last year. Although circuits connecting local central offices could typically be provided on only two fibers, the economics of fiber deployment have resulted in deployments of typical fiber cables containing more than 40 fibers. This suggests that there is a significant amount of fiber capacity currently unused in the *interoffice* transmission plant.[11]

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8   *2000 Biennial Regulatory Review – Comprehensive Review of the Accounting Requirements and ARMIS Reporting Requirements for Incumbent Local Exchange Carriers: Phase 2; Amendments to the Uniform System of Accounts for Interconnection; Jurisdictional Separations Reform and Referral to the Federal-State Joint Board; and Local Competition and Broadband Reporting*, CC Docket Nos. 00-199, 99-301, 97-212, 80-286, Report and Order in CC Docket Nos. 00-199, 97-212, and 80-286, Further Notice of Proposed Rulemaking in CC Docket Nos. 00-199, 99-301, and 80-286, 16 FCC Rcd 19911 (2001), *recon pending* (*Phase 2 Report and Order*).

9   Remote switches as defined in this report only cover those switches capable of functioning if the host switch fails.

10   Table 10.1 includes the number of switch terminations that are available for ISDN and ISDN capable lines. Table 10.2 includes the number of copper loops that are capable of supporting ISDN.

11   A large portion of the cost of fiber deployment is associated with labor and installation

Although the historical level of growth in fiber has been high, its use in the local loop at present appears to be relatively small. The reporting companies included in this section had an installed base of about 241 million copper-pair mainframe terminations in their central offices for local loop use in 2004. In comparison, about 2.8 million fiber loop central office terminations had been installed by end-of-year 2004. The data show that the number of these terminations increased by about 4% during 2004. In 2004 DS-3 terminations on fiber facilities grew by about 12%. Fiber and hybrid copper/fiber systems are becoming increasingly important in the local loop as the number of high-quality copper pairs available to support higher data rate digital services declines.

As noted earlier, the data presented in this section do not include data associated with hybrid fiber/copper interfaces including information on offerings of xDSL services for which the companies requested proprietary treatment.[12] Readers interested in more disaggregated information may wish to examine data at a more localized level than presented here.[13]

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rather than with the cable itself. Thus, the incremental cost of installing a larger fiber cable is typically relatively small. This suggests that the sheath-kilometer parameter shown in the attached tables may be a better measure of fiber coverage than fiber kilometers. In general, care should be exercised in interpreting aggregate fiber data when determining, for example, whether fiber is concentrated in certain parts of a company's service area with relatively little fiber elsewhere. See *Fiber Deployment Update - End of Year 1998*, released Sept. 9, 1999: <www.fcc.gov/wcb/iatd/stats.html>: FIBER98.ZIP (authored by J. Kraushaar, Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission).

12   xDSL (Digital Subscriber Loop) services that are now available offer broadband digital capability using special terminal equipment that enhances the capability of existing copper access lines.

13   Individual study-area data are also available to address more localized issues. This information is available from the ARMIS web page at <www.fcc.gov/wcb/eafs/>.

Table 10.1
Switching Data
Total - All Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Local Switches	15,073	15,556	16,267	16,099	16,117	16,261	14,841	14,837	14,051	14,053	14,064
Tandems	442	458	484	481	493	492	504	517	526	544	568
Hosts	2,186	2,310	2,432	2,519	2,471	2,461	2,401	2,338	2,274	2,169	2,156
Remotes (Stand Alone Only)	6,451	6,902	7,098	7,122	7,977	8,103	7,406	7,412	7,383	7,382	7,312
Total Switches	15,251	15,740	16,486	16,363	16,392	16,516	15,092	15,109	14,353	14,376	14,399
Analog Stored Program Control	1,179	1,002	735	509	431	314	203	139	107	84	73
Digital Stored Program Control	13,138	14,055	15,356	15,686	15,961	16,202	14,889	14,970	14,245	14,292	14,326
Total Number Access Lines in Service (000)	132,421	138,144	143,239	151,167	155,530	159,364	160,557	155,543	148,292	142,698	136,057
Analog Stored Program Control Lines Served	33,699	29,409	24,803	19,883	16,688	11,713	7,317	4,810	3,283	2,436	1,981
Digital Stored Program Control Lines Served	97,859	108,170	118,149	131,127	138,842	147,651	153,240	150,732	145,009	140,262	134,076
Total Switches Equipped w/SS7-394 (InterLATA) Svc.	10,195	11,742	13,171	13,813	15,148	15,994	14,822	14,954	14,258	14,342	14,366
Total Switches Equipped with ISDN	2,668	3,256	3,852	4,759	5,392	5,735	5,414	5,465	5,664	5,651	5,787
Lines with Access to ISDN (000)	61,518	77,492	95,113	109,817	121,408	127,357	132,886	129,075	124,451	119,422	115,561
Basic Rate ISDN (BRI) Interfaces Equipped	800,964	1,038,902	1,507,551	2,224,772	2,491,509	2,720,871	2,815,671	3,097,905	2,860,453	2,590,905	2,637,353
Primary Rate ISDN (PRI) Interfaces Equipped	15,526	32,580	67,885	164,294	234,515	334,910	521,503	720,590	753,491	556,226	567,255

Source: ARMIS Report 43-07.

Table 10.1
Switching Data
BellSouth Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Local Switches	1,658	1,647	1,650	1,654	1,653	1,649	1,644	1,642	1,637	1,629	1,625
Tandems	70	71	70	70	71	71	73	77	77	78	79
Hosts	280	289	297	317	307	306	297	304	305	295	295
Remotes (Stand Alone Only)	732	742	747	766	765	765	776	819	829	877	811
Total Switches	1,677	1,668	1,670	1,674	1,673	1,668	1,665	1,665	1,664	1,658	1,653
Analog Stored Program Control	182	158	130	106	100	83	69	54	44	41	39
Digital Stored Program Control	1,495	1,510	1,540	1,568	1,573	1,585	1,596	1,611	1,620	1,617	1,614
Total Number Access Lines in Service (000)	20,141	21,064	22,019	23,080	23,909	24,458	24,558	23,756	22,955	22,206	21,317
Analog Stored Program Control Lines Served	4,837	4,455	4,020	3,746	3,536	2,972	2,362	1,729	1,309	1,154	1,030
Digital Stored Program Control Lines Served	15,304	16,609	17,999	19,334	20,373	21,486	22,197	22,027	21,646	21,052	20,287
Total Switches Equipped w/SS7-394 (InterLATA) Svc.	1,627	1,629	1,652	1,674	1,673	1,668	1,665	1,665	1,664	1,658	1,653
Total Switches Equipped with ISDN	407	467	518	584	596	645	691	678	697	701	809
Lines with Access to ISDN (000)	9,708	10,988	12,948	14,894	15,980	17,413	18,396	17,660	17,457	16,927	17,536
Basic Rate ISDN (BRI) Interfaces Equipped	76,348	80,641	122,043	167,512	183,458	202,391	223,294	228,898	230,066	269,254	281,088
Primary Rate ISDN (PRI) Interfaces Equipped	3,534	4,803	9,154	21,389	33,564	51,669	72,347	85,983	81,328	81,682	86,399

Source: ARMIS Report 43-07.

Table 10.1
Switching Data
Qwest Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Local Switches	1,738	1,641	1,521	1,441	1,446	1,428	1,400	1,354	1,337	1,322	1,323
Tandems	51	51	51	51	51	51	53	51	56	56	56
Hosts	232	238	248	249	253	251	245	231	226	217	219
Remotes (Stand Alone Only)	984	961	852	781	786	752	733	680	651	631	630
Total Switches	1,752	1,654	1,534	1,492	1,458	1,441	1,414	1,363	1,351	1,336	1,337
Analog Stored Program Control	213	188	146	113	95	71	20	1	1	0	0
Digital Stored Program Control	1,519	1,465	1,387	1,379	1,363	1,370	1,394	1,362	1,350	1,336	1,337
Total Number Access Lines in Service (000)	14,309	14,817	15,405	16,132	16,859	17,449	17,626	16,664	15,682	14,277	13,425
Analog Stored Program Control Lines Served	5,303	4,706	4,245	4,228	3,574	2,501	636	30	28	0	0
Digital Stored Program Control Lines Served	8,988	10,110	11,159	11,905	13,286	14,948	16,991	16,634	15,654	14,277	13,425
Total Switches Equipped w/SS7-394 (InterLATA) Svc.	819	1,116	1,143	1,305	1,346	1,350	1,340	1,311	1,311	1,312	1,315
Total Switches Equipped with ISDN	240	262	327	541	557	583	623	603	587	635	638
Lines with Access to ISDN (000)	5,045	6,192	9,668	10,264	11,189	12,522	14,611	14,082	13,153	12,575	11,806
Basic Rate ISDN (BRI) Interfaces Equipped	120,058	126,530	146,570	162,953	165,733	167,623	176,696	174,079	199,302	201,232	195,674
Primary Rate ISDN (PRI) Interfaces Equipped	742	2,315	2,734	4,329	4,867	6,112	7,822	11,046	61,993	65,672	67,908

Source: ARMIS Report 43-07.

Table 10.1
Switching Data
SBC Ameritech Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Local Switches	1,413	1,415	1,410	1,435	1,419	1,432	1,447	1,451	1,455	1,439	1,436
Tandems	47	46	46	47	51	52	53	55	63	65	87
Hosts	236	238	236	243	236	234	234	235	236	236	236
Remotes (Stand Alone Only)	717	731	743	769	764	775	790	789	790	776	779
Total Switches	1,460	1,461	1,456	1,482	1,470	1,485	1,500	1,506	1,518	1,504	1,523
Analog Stored Program Control	119	97	71	58	46	39	37	34	24	16	8
Digital Stored Program Control	1,341	1,364	1,385	1,424	1,424	1,446	1,463	1,472	1,494	1,488	1,515
Total Number Access Lines in Service (000)	18,122	19,310	19,553	20,335	20,790	21,036	20,898	20,074	19,151	18,309	17,287
Analog Stored Program Control Lines Served	3,845	3,727	3,228	2,793	2,193	1,811	1,730	1,491	927	562	276
Digital Stored Program Control Lines Served	14,278	15,583	16,324	17,541	18,597	19,225	19,168	18,583	18,224	17,747	17,011
Total Switches Equipped w/SS7-394 (InterLATA) Svc.	1,254	1,400	1,438	1,463	1,451	1,476	1,492	1,496	1,504	1,504	1,523
Total Switches Equipped with ISDN	444	489	601	695	784	816	822	844	933	863	883
Lines with Access to ISDN (000)	10,259	12,860	13,802	15,464	16,804	17,472	17,388	16,814	16,810	16,160	15,531
Basic Rate ISDN (BRI) Interfaces Equipped	87,862	97,550	226,355	180,280	220,867	259,312	271,468	283,600	290,367	282,643	282,159
Primary Rate ISDN (PRI) Interfaces Equipped	1,505	1,677	4,247	14,569	24,800	38,037	53,926	70,542	75,184	75,766	79,519

Source: ARMIS Report 43-07.

Table 10.1
Switching Data
SBC Pacific Telesis Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Local Switches	837	840	833	810	801	799	778	781	779	779	778
Tandems	20	20	20	21	24	24	24	31	31	31	35
Hosts	121	117	114	135	121	116	189	114	114	116	116
Remotes (Stand Alone Only)	320	316	310	364	361	350	361	360	358	359	357
Total Switches	857	860	853	830	824	822	802	812	810	807	813
Analog Stored Program Control	109	87	72	49	38	17	0	0	0	0	0
Digital Stored Program Control	746	772	781	781	786	805	802	812	810	807	813
Total Number Access Lines in Service (000)	15,417	16,021	16,460	17,155	18,158	18,285	18,236	17,788	17,248	16,693	16,156
Analog Stored Program Control Lines Served	5,029	4,036	3,354	2,422	1,825	754	0	0	0	0	0
Digital Stored Program Control Lines Served	10,387	11,985	13,106	14,733	16,333	17,531	18,236	17,788	17,248	16,693	16,156
Total Switches Equipped w/SS7-394 (InterLATA) Svc.	764	772	794	791	803	796	778	812	810	807	813
Total Switches Equipped with ISDN	347	417	473	531	551	574	574	562	560	588	592
Lines with Access to ISDN (000)	8,494	10,291	11,895	13,632	15,134	16,529	17,589	16,966	16,427	16,251	15,759
Basic Rate ISDN (BRI) Interfaces Equipped	115,146	171,305	304,182	314,003	468,493	489,369	421,744	630,816	615,934	347,052	339,563
Primary Rate ISDN (PRI) Interfaces Equipped	708	3,491	13,448	20,125	31,345	47,794	49,712	94,742	54,902	34,378	34,926

Source: ARMIS Report 43-07.

Table 10.1
Switching Data
SBC Southern New England

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Local Switches							139	137	136	161	161
Tandems							6	1	6	7	7
Hosts							79	81	32	30	30
Remotes (Stand Alone Only)							71	56	73	82	82
Total Switches							139	137	136	165	168
Analog Stored Program Control							3	0	0	0	0
Digital Stored Program Control							136	137	136	165	168
Total Number Access Lines in Service (000)							2,450	2,334	2,258	2,173	2,069
Analog Stored Program Control Lines Served							125	0	0	0	0
Digital Stored Program Control Lines Served							2,325	2,334	2,258	2,173	2,069
Total Switches Equipped w/SS7-394 (InterLATA) Svc.							141	137	136	165	168
Total Switches Equipped with ISDN							74	101	137	103	107
Lines with Access to ISDN (000)							1,845	2,031	2,030	1,870	1,776
Basic Rate ISDN (BRI) Interfaces Equipped							40,569	38,423	43,254	51,076	51,138
Primary Rate ISDN (PRI) Interfaces Equipped							92,208	169,488	192,720	8,465	8,413

Source: ARMIS Report 43-07.

Table 10.1
Switching Data
SBC Southwestern Bell Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Local Switches	1,511	1,644	1,670	1,690	1,644	1,658	1,663	1,660	1,652	1,658	1,654
Tandems	60	60	60	60	67	56	69	70	70	71	68
Hosts	233	245	241	267	230	228	229	230	244	245	246
Remotes (Stand Alone Only)	779	935	1,077	1,077	1,158	1,163	1,152	1,150	1,150	1,101	1,093
Total Switches	1,539	1,679	1,730	1,750	1,711	1,727	1,715	1,716	1,722	1,728	1,722
Analog Stored Program Control	264	252	162	136	115	88	67	46	34	23	23
Digital Stored Program Control	1,202	1,369	1,568	1,614	1,596	1,639	1,648	1,670	1,688	1,705	1,699
Total Number Access Lines in Service (000)	13,611	14,095	14,104	15,306	15,872	16,287	16,411	15,842	15,294	14,670	13,912
Analog Stored Program Control Lines Served	6,608	6,531	5,657	5,055	4,119	3,107	2,246	1,448	963	652	615
Digital Stored Program Control Lines Served	6,907	7,502	8,447	10,251	11,753	13,180	14,165	14,394	14,331	14,018	13,297
Total Switches Equipped w/SS7-394 (InterLATA) Svc.	1,263	1,466	1,597	1,724	1,707	1,724	1,713	1,713	1,722	1,728	1,722
Total Switches Equipped with ISDN	123	303	331	331	360	428	441	461	472	479	498
Lines with Access to ISDN (000)	1,933	8,826	9,440	10,577	13,361	12,158	12,169	12,056	11,241	10,721	10,069
Basic Rate ISDN (BRI) Interfaces Equipped	57,041	108,784	104,604	185,018	225,427	267,190	281,459	310,326	308,501	309,907	309,172
Primary Rate ISDN (PRI) Interfaces Equipped	1,238	5,084	6,150	15,434	31,570	46,533	59,513	68,236	68,793	71,035	70,860

Source: ARMIS Report 43-07.

Table 10.1
Switching Data
Verizon - Bell Atlantic Companies

	1994	1995	1996	1998	1998	1999	2000	2001	2002	2003	2004
Local Switches	2,705	2,696	2,684	2,616	2,616	2,636	2,634	2,622	2,623	2,628	2,639
Tandems	65	65	71	67	67	74	76	81	87	102	101
Hosts	358	371	367	369	369	381	386	382	464	375	371
Remotes (Stand Alone Only)	1,407	1,424	1,444	1,405	1,405	1,437	1,435	1,424	1,424	1,441	1,445
Total Switches	2,738	2,729	2,723	2,652	2,652	2,682	2,683	2,675	2,682	2,705	2,702
Analog Stored Program Control	246	194	137	37	37	16	7	4	4	4	3
Digital Stored Program Control	2,492	2,535	2,586	2,615	2,615	2,666	2,676	2,671	2,677	2,701	2,699
Total Number Access Lines in Service (000)	35,745	36,959	38,305	40,838	40,838	41,833	41,669	40,582	38,810	38,003	36,105
Analog Stored Program Control Lines Served	7,569	5,576	4,057	1,442	1,442	568	218	112	55	67	60
Digital Stored Program Control Lines Served	28,176	31,383	34,248	39,396	39,396	41,266	41,451	40,469	38,754	37,936	36,045
Total Switches Equipped w/SS7-394 (InterLATA) Svc.	2,381	2,577	2,650	2,641	2,641	2,671	2,672	2,664	2,682	2,704	2,700
Total Switches Equipped with ISDN	839	930	1,079	1,298	1,298	1,304	1,305	1,303	1,328	1,308	1,289
Lines with Access to ISDN (000)	21,107	22,117	27,682	34,367	34,367	36,336	36,825	35,636	34,012	32,010	30,667
Basic Rate ISDN (BRI) Interfaces Equipped	282,051	363,320	505,652	1,088,060	1,088,060	1,167,022	1,226,934	1,258,543	1,003,709	966,634	1,015,554
Primary Rate ISDN (PRI) Interfaces Equipped	6,393	12,507	24,775	71,983	71,983	97,177	123,323	150,029	149,282	151,276	149,131

Source: ARMIS Report 43-07.

Table 10.1
Switching Data
Verizon - GTE Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Local Switches	5,211	5,673	6,499	6,453	6,538	6,659	5,136	5,190	4,432	4,437	4,448
Tandems	129	145	166	165	162	164	150	151	136	134	135
Hosts	726	812	929	939	955	945	742	761	653	655	643
Remotes (Stand Alone Only)	1,512	1,793	1,925	1,960	2,738	2,861	2,088	2,134	2,108	2,115	2,115
Total Switches	5,228	5,689	6,520	6,483	6,604	6,691	5,174	5,235	4,470	4,473	4,481
Analog Stored Program Control	46	26	17	10	0	0	0	0	0	0	0
Digital Stored Program Control	4,343	5,040	6,109	6,305	6,604	6,691	5,174	5,235	4,470	4,473	4,481
Total Number Access Lines in Service (000)	15,076	15,878	17,393	18,321	19,105	20,015	18,709	18,503	16,894	16,366	15,785
Analog Stored Program Control Lines Served	508	378	242	197	0	0	0	0	0	0	0
Digital Stored Program Control Lines Served	13,819	14,998	16,866	17,966	19,105	20,015	18,709	18,503	16,894	16,366	15,785
Total Switches Equipped w/SS7-394 (InterLATA) Svc.	2,087	2,782	3,897	4,215	5,527	6,309	5,021	5,156	4,429	4,464	4,472
Total Switches Equipped with ISDN	268	388	523	779	1,246	1,385	884	913	950	974	971
Lines with Access to ISDN (000)	4,972	6,218	9,678	10,619	14,574	14,926	14,064	13,830	13,320	12,908	12,418
Basic Rate ISDN (BRI) Interfaces Equipped	62,458	90,772	98,145	126,946	139,471	167,964	173,507	173,220	169,320	163,107	163,005
Primary Rate ISDN (PRI) Interfaces Equipped	1,406	2,703	7,377	16,465	36,386	47,588	62,652	70,524	69,289	67,952	70,099

Source: ARMIS Report 43-07.

Table 10.2
Transmission System Data
Total - All Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Sheath Kilometers:											
Total Sheath Kilometers	5,396,684	5,440,947	5,581,057	5,664,315	5,763,419	5,846,319	5,761,869	5,848,516	5,791,105	5,851,790	5,942,045
Copper	5,029,164	5,028,941	5,125,753	5,163,039	5,212,873	5,255,778	5,132,364	5,166,537	5,086,669	5,118,314	5,166,481
Fiber	359,887	404,891	448,098	495,380	536,520	576,868	613,646	665,805	692,031	720,877	763,132
Other	7,633	7,116	7,207	5,896	14,026	13,672	15,860	16,174	12,406	12,600	12,433
Interoffice Working Facilities:											
Total Circuit Links	23,148,333	25,297,979	24,244,165	28,847,081	32,231,481	41,879,877	48,661,944	52,923,180	52,949,635	52,112,866	50,950,480
Loop Plant -- Central Office Terminations:											
Total Equipped Channels	249,649,715	258,253,080	268,251,039	264,429,362	291,636,650	316,611,286	334,896,812	358,698,149	312,233,882	297,583,679	300,300,134
Copper	220,135,875	225,175,050	227,713,136	230,903,175	239,252,059	242,631,789	248,907,611	252,260,939	244,927,670	238,212,199	234,120,897
Fiber Digital Carrier	29,507,696	33,071,868	40,533,114	33,515,370	52,379,288	73,974,959	85,985,244	106,433,399	67,303,642	59,370,412	66,179,010
Other	6,144	6,162	4,789	10,817	5,303	4,538	3,957	3,811	2,570	1,068	227
Total Working Channels	147,195,693	152,380,602	161,508,833	170,083,120	194,840,965	207,743,891	218,927,639	227,878,106	169,157,091	155,978,400	148,255,276
Copper	135,381,925	139,111,176	144,505,778	147,286,389	154,355,633	154,646,229	157,839,973	152,364,455	137,228,369	127,261,709	117,320,498
Fiber Digital Carrier	11,810,830	13,266,569	17,000,345	22,793,636	40,483,024	52,850,716	61,085,767	75,512,132	31,927,283	28,716,169	30,934,695
Other	2,940	2,857	2,710	3,095	2,308	246,946	1,899	1,519	1,439	522	83
Other Transmission Facility Data:											
Copper Pairs Term Main Frame (Loop Plant Only)	208,473,679	211,518,359	213,009,375	215,534,261	218,990,613	218,470,177	221,252,639	238,862,029	242,252,929	242,520,915	240,835,374
Fiber Strands Term in the CO (Loop Plant Only)	650,573	1,102,517	1,365,991	1,651,999	1,946,608	2,005,074	2,350,285	2,744,584	3,098,223	2,705,122	2,819,962
Fiber Term at Customer Premises DS1 Rate	163,017	206,572	269,767	363,189	506,572	629,237	876,058	1,290,658	1,325,187	1,710,437	1,837,473
Fiber Term at Customer Premises DS3 Rate & Higher	16,139	18,773	31,304	29,893	56,208	105,420	190,106	232,430	212,277	265,280	296,659
ISDN Capable Lines	NA	NA	NA	105,949,659	107,514,215	123,018,845	117,157,253	105,443,488	106,355,653	96,011,618	86,074,376

NA: Not available

Source: ARMIS Report 43-07.

Table 10.2
Transmission System Data
BellSouth Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Sheath Kilometers:											
Total Sheath Kilometers	1,005,397	1,020,809	1,034,601	1,050,186	1,074,896	1,094,569	1,115,897	1,134,363	1,145,506	1,155,144	1,170,351
Copper	930,812	937,626	943,090	951,758	965,108	973,995	983,221	989,541	992,446	994,980	1,000,413
Fiber	73,370	82,012	90,093	96,852	105,335	116,507	129,209	141,356	149,609	156,707	166,476
Other	1,215	1,171	1,418	1,576	4,453	4,067	3,466	3,466	3,452	3,457	3,462
Interoffice Working Facilities:											
Total Circuit Links	4,287,654	4,756,430	5,245,925	6,107,816	6,134,728	8,564,658	9,828,726	10,690,256	10,835,682	10,539,995	10,306,408
Loop Plant -- Central Office Terminations:											
Total Equipped Channels	34,669,704	36,022,283	37,866,890	39,550,588	40,957,871	42,025,575	38,493,186	39,191,848	39,822,163	39,957,594	40,455,852
Copper	29,995,720	30,351,794	30,903,216	31,270,774	31,917,878	31,849,537	31,600,665	31,708,156	30,263,142	30,684,759	29,089,610
Fiber Digital Carrier	4,673,140	5,669,647	6,962,832	8,278,972	9,039,151	10,175,104	6,891,115	7,481,596	9,557,876	9,272,835	11,366,242
Other	842	842	842	842	842	934	1,406	2,096	1,145	0	0
Total Working Channels	23,284,636	24,682,894	26,230,400	27,921,162	29,836,968	30,422,706	26,262,694	25,989,359	25,039,974	24,334,185	23,426,354
Copper	19,283,574	19,871,262	20,318,019	20,708,890	21,233,672	21,237,643	20,311,329	19,664,164	17,250,216	16,854,022	14,456,834
Fiber Digital Carrier	4,000,986	4,811,550	5,912,292	7,212,190	8,603,214	9,184,935	5,950,949	6,324,563	7,789,007	7,480,163	8,969,520
Other	77	82	89	82	82	128	416	632	751	0	0
Other Transmission Facility Data:											
Copper Pairs Term Main Frame (Loop Plant Only)	26,451,200	26,527,293	26,342,776	26,703,438	27,082,625	26,602,864	31,771,617	48,789,643	49,853,210	51,027,738	52,265,386
Fiber Strands Term in the CO (Loop Plant Only)	73,260	106,710	138,364	157,957	185,416	205,840	226,360	248,433	310,092	322,590	351,606
Fiber Term at Customer Premises DS1 Rate	13,941	19,132	27,482	36,911	50,431	67,886	85,205	93,687	593,755	448,233	474,787
Fiber Term at Customer Premises DS3 Rate & Higher	4,034	4,559	5,353	6,847	8,974	35,492	94,022	107,998	112,931	121,680	129,894
ISDN Capable Lines	NA	NA	NA	25,918,582	15,841,265	13,049,642	13,111,821	12,636,844	16,230,309	16,065,806	15,764,831

NA: Not available

Source: ARMIS Report 43-07.

Table 10.2
Transmission System Data
Qwest Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Sheath Kilometers:											
Total Sheath Kilometers	750,756	753,942	722,753	717,084	722,157	735,920	754,162	762,412	770,660	779,623	789,965
Copper	694,797	691,844	660,393	653,205	650,929	662,816	675,009	676,615	684,193	690,414	698,213
Fiber	55,960	62,098	62,360	63,880	65,171	66,986	69,906	76,585	80,891	83,638	86,182
Other	0	0	0	0	6,057	6,119	9,247	9,212	5,576	5,570	5,570
Interoffice Working Facilities:											
Total Circuit Links	2,569,216	2,802,203	3,178,552	3,561,748	4,129,315	5,232,282	6,152,970	6,926,823	7,018,987	6,746,390	6,521,359
Loop Plant -- Central Office Terminations:											
Total Equipped Channels	24,088,839	24,246,870	25,284,411	24,893,900	27,316,968	28,023,288	28,733,473	29,643,140	30,106,628	30,149,357	30,250,683
Copper	23,393,955	23,561,093	23,500,796	23,193,518	25,517,759	25,361,821	25,581,184	25,939,651	26,077,832	25,727,523	25,542,477
Fiber Digital Carrier	694,588	685,674	1,782,962	1,699,888	1,799,003	2,661,211	3,152,009	3,703,244	4,028,568	4,421,607	4,707,979
Other	296	103	653	494	206	256	280	245	228	227	227
Total Working Channels	15,322,355	15,347,150	16,359,345	17,195,446	17,455,809	18,011,061	18,009,155	17,058,921	16,260,389	15,607,156	15,038,312
Copper	14,863,489	14,873,448	15,232,212	16,113,600	16,222,185	16,270,241	15,887,131	14,607,962	14,400,788	13,625,667	12,996,038
Fiber Digital Carrier	458,790	473,650	1,126,650	1,081,695	1,233,523	1,740,715	2,121,920	2,450,864	1,859,511	1,981,407	2,042,191
Other	76	52	483	151	101	105	104	95	90	82	83
Other Transmission Facility Data:											
Copper Pairs Term Main Frame (Loop Plant Only)	22,179,411	22,168,426	22,291,697	20,463,591	21,558,602	21,606,866	21,572,942	21,653,395	21,724,140	22,858,456	22,907,836
Fiber Strands Term in the CO (Loop Plant Only)	83,313	81,953	112,185	123,691	174,430	202,329	238,802	299,315	309,154	316,793	322,781
Fiber Term at Customer Premises DS1 Rate	24,386	28,875	30,109	46,296	91,105	136,878	267,251	316,665	349,948	370,416	390,835
Fiber Term at Customer Premises DS3 Rate & Higher	1,297	1,289	1,223	1,142	6,085	28,354	38,224	51,546	60,366	63,678	66,830
ISDN Capable Lines	NA	NA	NA	9,236,841	9,650,185	9,983,398	9,922,088	9,012,052	8,426,381	7,591,314	7,191,782

NA: Not available

Source: ARMIS Report 43-07.

Table 10.2
Transmission System Data
SBC Ameritech Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Sheath Kilometers:											
Total Sheath Kilometers	537,133	562,934	575,407	586,712	598,858	601,779	612,988	629,321	636,725	642,674	652,737
Copper	498,239	519,775	526,955	533,491	541,197	540,170	546,336	555,024	558,670	562,163	570,185
Fiber	37,980	42,370	47,676	52,450	56,687	60,637	65,632	73,334	77,084	79,541	81,711
Other	915	789	776	771	974	972	1,020	964	971	970	842
Interoffice Working Facilities:											
Total Circuit Links	2,964,296	3,278,058	3,577,253	4,118,183	4,912,927	5,990,907	6,753,643	7,625,684	8,084,023	7,633,513	7,372,538
Loop Plant -- Central Office Terminations:											
Total Equipped Channels	31,847,802	31,957,236	33,365,840	34,740,814	36,301,862	37,842,246	39,092,223	40,436,388	42,145,712	38,326,987	38,922,520
Copper	29,482,850	29,124,886	29,571,017	29,797,059	30,063,619	30,255,769	30,775,153	30,444,126	30,690,174	34,469,562	34,918,499
Fiber Digital Carrier	2,364,952	2,832,350	3,794,823	4,943,755	6,238,243	7,586,477	8,317,070	9,992,262	11,455,538	3,857,425	4,004,021
Other	0	0	0	0	0	0	0	0	0	0	0
Total Working Channels	19,105,653	19,714,345	20,506,219	21,152,075	21,782,557	22,227,572	22,495,633	21,786,411	20,997,868	20,239,795	19,291,809
Copper	18,096,153	18,478,770	18,896,376	19,082,995	19,216,231	19,135,507	18,993,978	18,124,703	17,272,552	18,147,879	17,221,055
Fiber Digital Carrier	1,009,500	1,235,575	1,609,843	2,069,080	2,566,326	3,092,065	3,501,655	3,661,708	3,725,316	2,091,916	2,070,754
Other	0	0	0	0	0	0	0	0	0	0	0
Other Transmission Facility Data:											
Copper Pairs Term Main Frame (Loop Plant Only)	28,645,733	28,217,638	28,693,470	28,970,660	29,303,138	29,605,539	30,212,004	29,938,625	30,208,945	30,632,552	30,761,065
Fiber Strands Term in the CO (Loop Plant Only)	66,035	79,661	103,648	123,302	141,621	165,171	205,342	275,069	300,927	248,340	265,087
Fiber Term at Customer Premises DS1 Rate	26,660	31,941	39,124	46,366	53,506	62,090	78,822	106,984	118,927	318,417	345,032
Fiber Term at Customer Premises DS3 Rate & Higher	2,755	3,192	3,874	4,453	5,145	5,788	7,188	9,583	10,810	26,849	35,916
ISDN Capable Lines	NA	NA	NA	9,339,241	9,476,166	9,499,034	9,469,137	9,054,353	8,618,397	8,050,722	7,567,384

NA: Not available

Source: ARMIS Report 43-07.

Table 10.2
Transmission System Data
SBC Pacific Telesis Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Sheath Kilometers:											
Total Sheath Kilometers	343,658	346,127	349,697	363,726	368,122	363,304	386,093	394,058	382,326	394,103	410,545
Copper	324,942	325,537	327,040	339,207	341,563	334,493	355,133	359,288	343,317	352,331	365,700
Fiber	17,598	19,472	21,513	23,375	25,416	27,648	29,797	33,227	37,466	40,279	43,342
Other	1,118	1,118	1,144	1,144	1,144	1,163	1,163	1,543	1,543	1,493	1,503
Interoffice Working Facilities:											
Total Circuit Links	2,568,706	2,646,904	2,240,779	3,369,967	3,760,855	4,352,282	5,032,433	5,141,975	4,792,666	4,649,070	4,410,421
Loop Plant -- Central Office Terminations:											
Total Equipped Channels	26,447,355	26,850,298	27,732,011	28,635,080	29,739,661	30,729,411	33,317,471	34,687,259	34,988,223	31,628,755	32,005,987
Copper	25,914,609	26,178,875	26,951,967	27,548,645	28,348,883	29,062,676	31,479,491	32,170,875	32,337,338	30,161,010	30,398,583
Fiber Digital Carrier	532,661	671,162	779,783	1,086,411	1,390,754	1,666,523	1,837,699	2,516,055	2,650,609	1,467,745	1,607,404
Other	85	261	261	24	24	212	281	329	276	0	0
Total Working Channels	16,110,206	16,877,850	17,719,765	18,254,128	20,103,518	20,963,786	23,081,376	22,773,561	22,080,915	17,868,331	17,311,070
Copper	15,758,760	16,448,199	17,212,991	17,569,012	19,235,044	19,936,233	21,930,468	21,380,638	20,803,417	17,070,393	16,430,928
Fiber Digital Carrier	351,364	429,536	506,657	685,092	868,450	1,027,425	1,150,752	1,392,728	1,277,338	797,938	880,142
Other	82	115	117	24	24	128	156	195	160	0	0
Other Transmission Facility Data:											
Copper Pairs Term Main Frame (Loop Plant Only)	24,577,002	24,619,462	25,055,625	25,412,880	25,953,289	26,639,408	27,102,231	27,403,873	27,620,878	27,668,068	27,754,848
Fiber Strands Term in the CO (Loop Plant Only)	33,538	34,692	37,156	88,192	97,385	101,516	115,670	139,598	182,250	49,626	51,419
Fiber Term at Customer Premises DS1 Rate	756	655	719	762	854	894	0	0	0	244,193	265,797
Fiber Term at Customer Premises DS3 Rate & Higher	3,108	4,047	3,113	6,145	7,432	9,456	13,132	16,805	19,925	23,252	29,988
ISDN Capable Lines	NA	NA	NA	12,803,002	14,007,670	14,466,224	15,930,217	14,563,646	15,240,270	8,870,683	8,272,400

NA: Not available

Source: ARMIS Report 43-07.

Table 10.2
Transmission System Data
SBC Southern New England Tel.

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Sheath Kilometers:											
Total Sheath Kilometers							78,301	78,634	79,230	77,061	77,869
Copper							68,830	68,582	68,786	66,119	66,717
Fiber							9,471	10,052	10,444	10,810	11,076
Other							0	0	0	132	76
Interoffice Working Facilities:											
Total Circuit Links							700,958	701,243	720,401	843,381	781,235
Loop Plant -- Central Office Terminations:											
Total Equipped Channels							4,303,654	4,719,268	4,627,977	4,747,002	4,841,846
Copper							3,810,896	3,991,935	4,018,081	4,009,459	4,042,100
Fiber Digital Carrier							492,758	727,333	609,896	737,543	799,746
Other							0	0	0	0	0
Total Working Channels							2,491,272	2,551,112	2,540,750	2,296,050	2,193,809
Copper							2,129,625	2,064,154	2,140,299	1,876,364	1,768,509
Fiber Digital Carrier							361,647	486,958	400,451	419,686	425,300
Other							0	0	0	0	0
Other Transmission Facility Data:											
Copper Pairs Term Main Frame (Loop Plant Only)							3,810,896	4,108,736	3,892,983	3,860,982	3,869,497
Fiber Strands Term in the CO (Loop Plant Only)							40,777	60,062	89,466	24,006	26,986
Fiber Term at Customer Premises DS1 Rate							0	0	67,790	33,818	31,586
Fiber Term at Customer Premises DS3 Rate & Higher							0	0	0	6,182	4,092
ISDN Capable Lines							317,994	384,431	398,824	1,049,395	990,236

NA: Not available

Source: ARMIS Report 43-07.

Table 10.2
Transmission System Data
SBC Southwestern Bell Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Sheath Kilometers:											
Total Sheath Kilometers	652,224	662,108	676,945	685,526	700,914	715,915	734,982	749,279	758,096	768,714	777,213
Copper	609,725	612,764	617,776	622,960	634,236	645,280	657,915	665,754	671,033	678,357	684,030
Fiber	40,621	47,530	57,228	60,561	66,074	70,023	76,442	82,893	86,431	89,725	92,549
Other	1,878	1,814	1,942	2,005	604	612	625	632	632	632	634
Interoffice Working Facilities:											
Total Circuit Links	2,271,891	2,583,685	2,887,611	3,374,225	4,013,947	5,040,973	5,747,378	6,133,750	6,011,924	6,248,497	6,238,881
Loop Plant -- Central Office Terminations:											
Total Equipped Channels	23,675,325	23,990,229	23,765,557	26,003,155	26,573,984	27,781,986	28,466,090	33,579,340	35,090,790	30,806,704	31,676,407
Copper	22,010,813	23,356,682	22,976,132	24,957,200	25,399,685	26,437,109	27,047,348	30,533,897	31,634,863	26,115,730	26,629,079
Fiber Digital Carrier	1,664,422	633,547	789,425	1,045,955	1,174,299	1,344,877	1,418,742	3,045,443	3,455,927	4,690,974	5,047,328
Other	90	0	0	0	0	0	0	0	0	0	0
Total Working Channels	15,446,486	15,917,610	16,579,937	16,305,661	17,626,797	17,857,937	18,053,445	16,482,996	15,888,373	15,236,915	14,528,841
Copper	14,046,786	15,376,311	15,937,288	15,532,286	16,738,819	16,854,720	16,970,439	15,386,074	14,767,650	12,653,096	11,827,658
Fiber Digital Carrier	1,399,626	541,299	642,649	773,375	887,978	1,003,217	1,083,006	1,096,922	1,120,723	2,583,819	2,701,183
Other	74	0	0	0	0	0	0	0	0	0	0
Other Transmission Facility Data:											
Copper Pairs Term Main Frame (Loop Plant Only)	22,010,903	21,990,829	22,185,268	22,926,817	22,904,300	23,579,244	24,032,521	24,062,333	24,290,865	24,407,172	24,749,958
Fiber Strands Term in the CO (Loop Plant Only)	66,497	124,026	189,365	193,409	206,178	158,881	256,736	329,584	388,011	161,950	172,172
Fiber Term at Customer Premises DS1 Rate	44,622	48,552	77,598	77,545	113,701	103,739	130,287	160,740	172,872	273,498	307,114
Fiber Term at Customer Premises DS3 Rate & Higher	2,566	2,733	4,365	5,039	5,615	1,995	3,668	4,523	4,828	20,354	26,529
ISDN Capable Lines	NA	NA	NA	3,773,275	4,157,674	12,158,269	12,168,819	12,055,812	11,177,094	4,981,445	4,680,190

NA: Not available

Source: ARMIS Report 43-07.

Table 10.2
Transmission System Data
Verizon - Bell Atlantic Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Sheath Kilometers:											
Total Sheath Kilometers	958,275	967,084	973,148	992,970	1,008,405	1,022,395	1,038,094	1,046,999	1,080,551	1,088,452	1,095,801
Copper	877,352	875,728	872,797	873,583	876,739	879,768	886,323	886,147	912,134	914,932	917,525
Fiber	78,415	89,132	98,425	118,987	130,872	141,888	151,432	160,494	168,185	173,174	177,930
Other	2,507	2,224	1,927	401	794	739	339	357	232	346	346
Interoffice Working Facilities:											
Total Circuit Links	5,159,173	5,201,204	5,213,347	5,853,744	6,834,238	8,693,801	10,262,940	11,001,835	11,120,804	11,201,109	11,045,592
Loop Plant -- Central Office Terminations:											
Total Equipped Channels	82,980,954	86,021,165	90,107,803	80,327,245	99,291,295	107,609,086	118,262,278	132,282,141	83,370,102	81,140,923	83,703,872
Copper	65,122,822	65,275,522	65,663,036	66,426,101	69,763,421	69,783,996	70,380,468	71,028,549	65,274,338	64,992,904	65,921,886
Fiber Digital Carrier	17,858,134	20,745,643	24,444,767	13,901,144	29,527,874	37,825,090	47,881,810	61,253,592	18,095,764	16,148,019	17,781,986
Other	0	0	0	0	0	0	0	0	0	0	0
Total Working Channels	40,222,933	40,922,175	43,690,966	48,600,177	66,109,986	74,269,449	84,300,998	97,520,356	44,619,456	40,052,063	38,588,203
Copper	36,776,495	36,387,944	37,927,283	39,429,529	41,983,369	43,003,921	43,790,217	43,770,856	34,803,810	32,820,501	31,437,854
Fiber Digital Carrier	3,446,439	4,534,231	5,763,683	9,170,648	24,126,617	31,265,528	40,510,781	53,749,500	9,815,646	7,231,562	7,150,349
Other	0	0	0	0	0	0	0	0	0	0	0
Other Transmission Facility Data:											
Copper Pairs Term Main Frame (Loop Plant Only)	60,557,866	60,577,213	60,635,648	61,342,895	61,875,146	61,342,016	60,962,933	60,979,463	62,622,453	62,718,766	63,581,514
Fiber Strands Term in the CO (Loop Plant Only)	273,279	604,501	704,901	872,210	1,014,974	1,127,598	1,227,204	1,359,225	1,487,203	1,552,120	1,601,097
Fiber Term at Customer Premises DS1 Rate	47,833	65,929	78,266	131,829	192,129	246,434	314,204	612,368	21,723	21,693	22,149
Fiber Term at Customer Premises DS3 Rate & Higher	1,306	1,767	2,333	4,094	18,518	24,111	32,912	40,995	2,778	2,715	2,639
ISDN Capable Lines	NA	NA	NA	31,943,090	40,648,786	47,596,665	38,205,741	35,587,450	34,658,178	33,659,351	31,478,816

NA: Not available

Source: ARMIS Report 43-07.

Table 10.2
Transmission System Data
Verizon - GTE Companies

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Sheath Kilometers:											
Total Sheath Kilometers	1,149,241	1,127,943	1,248,505	1,268,110	1,290,068	1,312,437	1,041,353	1,053,450	938,012	946,019	967,564
Copper	1,093,297	1,065,667	1,177,702	1,188,835	1,203,101	1,219,257	959,596	965,586	856,090	859,017	863,698
Fiber	55,944	62,276	70,803	79,275	86,966	93,180	81,757	87,864	81,922	87,002	103,866
Other	0	0	0	0	0	0	0	0	0	0	0
Interoffice Working Facilities:											
Total Circuit Links	3,327,397	4,029,495	1,900,698	2,461,398	2,445,471	4,004,974	4,182,896	4,701,614	4,365,148	4,250,911	4,274,046
Loop Plant -- Central Office Terminations:											
Total Equipped Channels	25,939,736	29,164,999	30,128,527	30,278,580	31,455,009	42,599,694	44,228,437	44,158,765	42,082,287	40,826,357	38,442,967
Copper	24,215,106	27,326,198	28,146,972	27,709,878	28,240,814	29,880,881	28,232,406	26,443,750	24,631,902	22,051,252	17,578,663
Fiber Digital Carrier	1,719,799	1,833,845	1,978,522	2,559,245	3,209,964	12,715,677	15,994,041	17,713,874	17,449,464	18,774,264	20,864,304
Other	4,831	4,956	3,033	9,457	4,231	3,136	1,990	1,141	921	841	0
Total Working Channels	17,703,424	18,918,578	20,422,201	20,654,471	21,925,330	23,991,380	24,233,066	23,715,390	21,729,366	20,343,905	17,876,878
Copper	16,556,668	17,675,242	18,981,609	18,850,077	19,726,313	18,207,964	17,826,786	17,365,904	15,789,637	14,213,787	11,181,622
Fiber Digital Carrier	1,144,125	1,240,728	1,438,571	1,801,556	2,196,916	5,536,831	6,405,057	6,348,889	5,939,291	6,129,678	6,695,256
Other	2,631	2,608	2,021	2,838	2,101	246,585	1,223	597	438	440	0
Other Transmission Facility Data:											
Copper Pairs Term Main Frame (Loop Plant Only)	24,051,564	27,417,498	27,804,891	29,713,980	30,313,513	29,094,240	21,787,495	21,925,961	22,039,455	19,347,181	14,945,270
Fiber Strands Term in the CO (Loop Plant Only)	54,651	70,974	80,372	93,238	126,604	43,739	39,394	33,298	31,120	29,697	28,814
Fiber Term at Customer Premises DS1 Rate	4,819	11,488	16,469	23,480	4,846	11,316	289	214	172	169	173
Fiber Term at Customer Premises DS3 Rate & Higher	1,073	1,186	11,043	2,173	4,439	224	960	980	639	570	771
ISDN Capable Lines	NA	NA	NA	12,935,628	13,732,469	16,265,613	18,031,436	12,148,900	11,606,200	15,742,902	10,128,737

NA: Not available

Source: ARMIS Report 43-07.