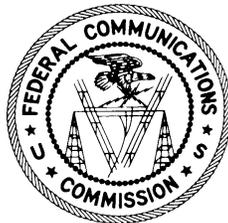


# **Voice Telephone Services: Status as of December 31, 2015**

Industry Analysis and Technology Division  
Wireline Competition Bureau  
November 2016



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This report is available for reference in the FCC's Reference Information Center, Courtyard Level, 445 12th Street, SW, Washington, DC. Copies may be purchased by contacting Best Copy and Printing, Inc., 445 12th Street, SW, Room CY-B402, Washington, DC 20554, telephone (800) 378-3160, or via their website at [www.bcpiweb.com](http://www.bcpiweb.com). The report can also be downloaded from the Voice Telephone Services Reports webpage at <https://www.fcc.gov/general/iatd-data-statistical-reports>.

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### SUPPLEMENTAL MATERIALS AVAILABLE ON FCC WEBSITE

- Table 1 and Table 2 in Excel format (national-level data back to June 2014)
- State-level Subscriptions table in Excel format (data back to June 2014)
- State-level Number of Providers table in Excel format (data back to June 2014)
- County-level Subscriptions information in Excel format (data back to June 2014)
- CSV-format file of consistent data series published for 2008-2015
- Crosswalk to the report *Local Telephone Competition: Status as of December 31, 2013* in PDF format

# Voice Telephone Services: Status as of December 31, 2015

## Introduction

The Commission has used FCC Form 477 to collect subscribership information from providers of voice telephone services – the incumbent local exchange carriers (ILECs), competitive local exchange carriers (CLECs), and mobile voice providers – since December 1999. The Commission has required interconnected Voice over Internet Protocol (“interconnected VoIP”) service providers to report subscribership information since December 2008 because the use of VoIP technology is growing rapidly and it increasingly is used to provide voice telephone service.<sup>1</sup> Also, starting with the data reported for 2014, Form 477 has been modified to distinguish “over-the-top” (colloquially, “bring your own broadband”) interconnected VoIP subscriptions from other interconnected VoIP subscriptions.<sup>2</sup>

This report summarizes the information collected about telephone services as of December 31, 2015. It demonstrates continued growth in subscribership to interconnected VoIP and mobile voice services and continued decline in subscribership to traditional wired telephone services.<sup>3</sup>

## Comparison to Local Telephone Competition Report

This report previously was titled *Local Telephone Competition*. Reports under the earlier title summarized Form 477 data through December 31, 2013. Reports under the current title provide much of the summarized data as supplemental spreadsheet files, available at <https://www.fcc.gov/voice-telephone-services-report>. A crosswalk between data elements in this report and data elements in the *Local Telephone Competition* report is available at that page.

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<sup>1</sup> The FCC’s rules (at 47 C.F.R. § 9.3) state:

An interconnected Voice over Internet Protocol (VoIP) service is a service that:

- (1) Enables real-time, two-way voice communications;
- (2) Requires a broadband connection from the user’s location;
- (3) Requires Internet protocol-compatible customer premises equipment (CPE); and
- (4) Permits users generally to receive calls that originate on the public switched telephone network and to terminate calls to the public switched telephone network.

We note that the current interpretation of element (4) of the definition excludes the VoIP services that Skype offers in the United States, and subscribers to those services are not reported on Form 477.

<sup>2</sup> The Technical Notes and the Glossary that appear at the end of this report provide more-detailed information about the current Form 477 and the meaning of terms used in this report. To be consistent with modifications to Form 477 that were adopted in 2013 (to be effective for reporting June 2014 and later data), and to avoid confusion, this report no longer uses the terms “standalone VoIP” and, by contrast, “broadband bundle.” Standalone VoIP in the earlier, *Local Telephone Competition*, reports has a different meaning from “over-the-top” VoIP in this report. In particular, subscriptions reported as standalone VoIP for December 2013 and earlier dates included over-the-top subscriptions as defined in this report and also video-plus-VoIP service subscriptions sold by cable TV system operators and other entities that own last-mile facilities to end-user premises. We note that, accordingly, 13% of total interconnected VoIP subscriptions were categorized as standalone VoIP in December 2013 and, by contrast, 10% of total interconnected VoIP subscriptions were categorized as over-the-top VoIP in December 2014.

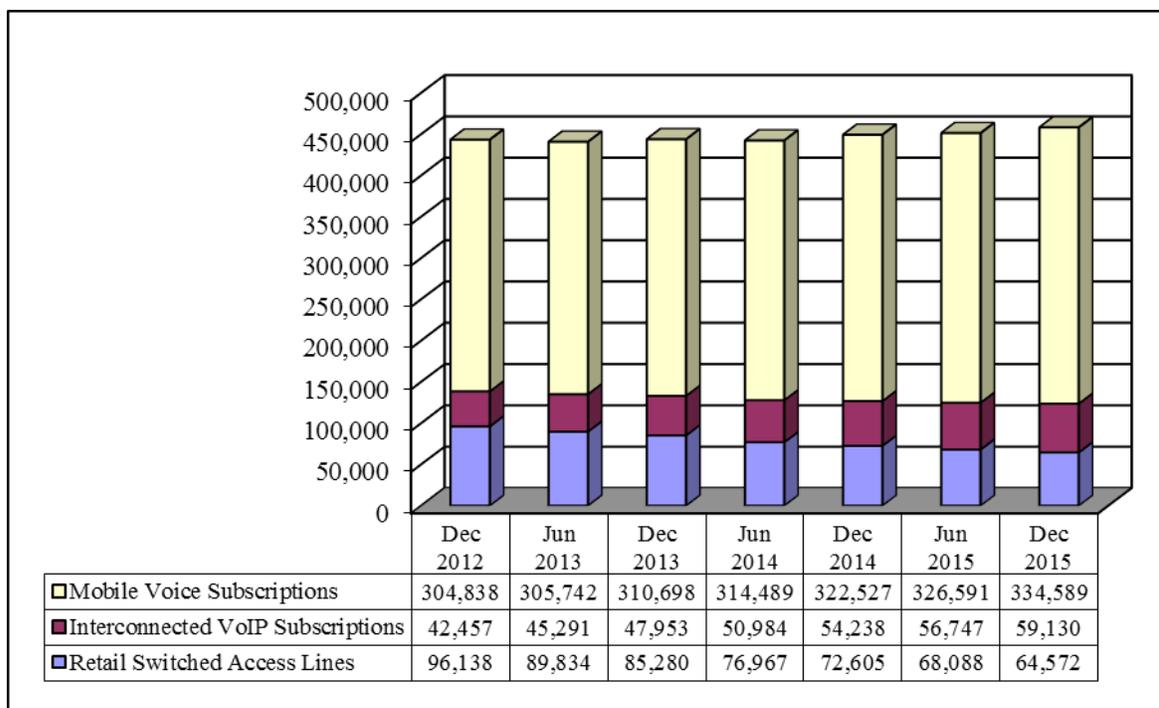
<sup>3</sup> The presentation of mobile wireless telephone subscriber counts in this report does not constitute, or imply, Commission analysis of the extent to which wireline and mobile wireless telephone services are demand substitutes or complements in general or in any particular situation.

## Retail Voice Telephone Service Connections

Retail voice telephone service customers are served by two wireline technologies – “end-user” switched access lines and interconnected VoIP “subscriptions” – and by mobile wireless subscriptions.

- In December 2015, there were 65 million end-user switched access lines in service, 59 million interconnected VoIP subscriptions, and 335 million mobile subscriptions in the United States, or 458 million retail voice telephone service connections in total. See Figure 1.
- Over the three-year period presented in Figure 1, interconnected VoIP subscriptions increased at a compound annual growth rate of 12%, mobile voice subscriptions increased at a compound annual growth rate of 3%, and retail switched access lines declined at 12% per year.<sup>4</sup>

**Figure 1**  
**Retail Voice Telephone Service Connections, 2012 - 2015**  
**(in Thousands)**



- Of the 124 million wireline retail voice telephone service connections (including both switched access lines and interconnected VoIP subscriptions) in December 2015, 68 million (or 55%) were residential connections and 56 million (or 45%) were business connections.<sup>5</sup> See Figure 2.

<sup>4</sup> The compound annual growth rate (CAGR) is a smoothed rate of growth calculated in three steps. First, divide the ending value by the beginning value. Second, raise the result of that division to a power equal to one divided by the number of years in the period (in this case, 3 years, so the power is 1/3). Third, subtract the number one from the result of the second step.

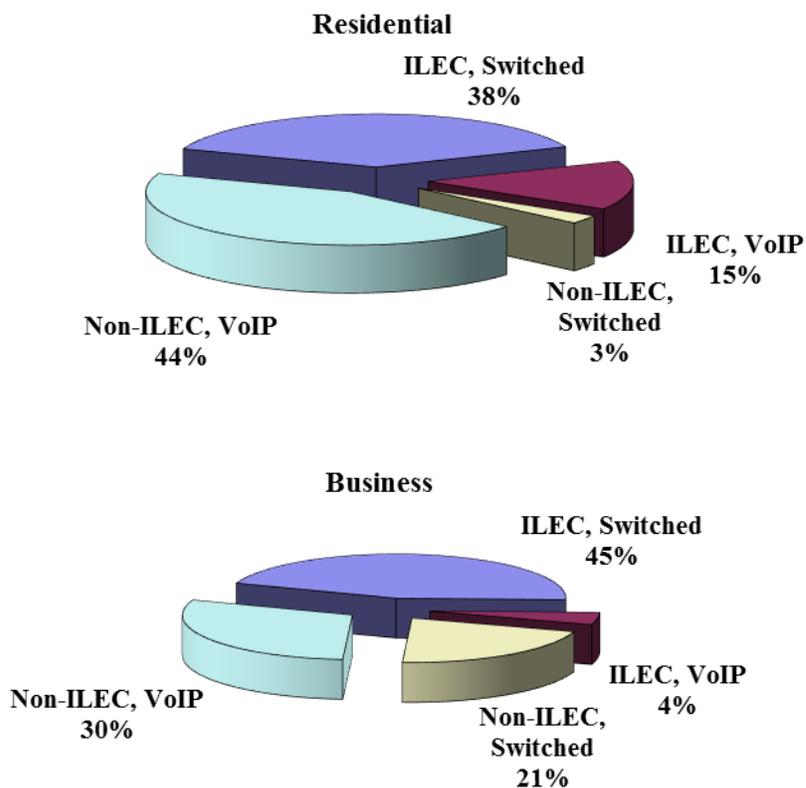
<sup>5</sup> FCC Form 477 does not distinguish between residential and business subscribers to mobile *voice* service. The information that Form 477 collects about mobile *broadband* service is summarized elsewhere; see *Internet Access Services: Status as of December 31, 2015*, available at <https://www.fcc.gov/reports-research/reports/internet-access-services-reports/internet-access-services-reports>.

**Figure 2**  
**Wireline Retail Voice Telephone Service Connections by Technology, Regulatory Status,**  
**and Customer Type as of December 31, 2015 (in Thousands)**

<b>Total</b>	<b>Switched Access Lines</b>	<b>Interconnected VoIP</b>	<b>Total</b>
ILEC	51,073	12,605	63,678
Non-ILEC	13,499	46,525	60,024
<b>Total</b>	<b>64,572</b>	<b>59,130</b>	<b>123,702</b>
<b>Residential</b>			
ILEC	25,807	10,093	35,900
Non-ILEC	1,757	29,868	31,624
<b>Residential Total</b>	<b>27,564</b>	<b>39,960</b>	<b>67,524</b>
<b>Business</b>			
ILEC	25,265	2,512	27,778
Non-ILEC	11,743	16,657	28,400
<b>Business Total</b>	<b>37,008</b>	<b>19,170</b>	<b>56,177</b>

Figures may not sum to totals due to rounding.

ILEC = Incumbent local exchange carrier. A voice-service affiliate of an ILEC that is operating outside the ILEC's traditional service area ("study area") is a Non-ILEC.



- Cross-classified by technology and the retailer’s regulatory status in Figure 2, the 68 million wireline residential connections in December 2015 were: 38% ILEC switched access lines, 44% non-ILEC interconnected VoIP subscriptions, 15% ILEC interconnected VoIP subscriptions, and 3% non-ILEC switched access lines. Similarly, the 56 million wireline business connections were: 45% ILEC switched access lines, 30% non-ILEC interconnected VoIP subscriptions, 4% ILEC interconnected VoIP subscriptions, and 21% non-ILEC switched access lines.

### **Retail Service Relationships**

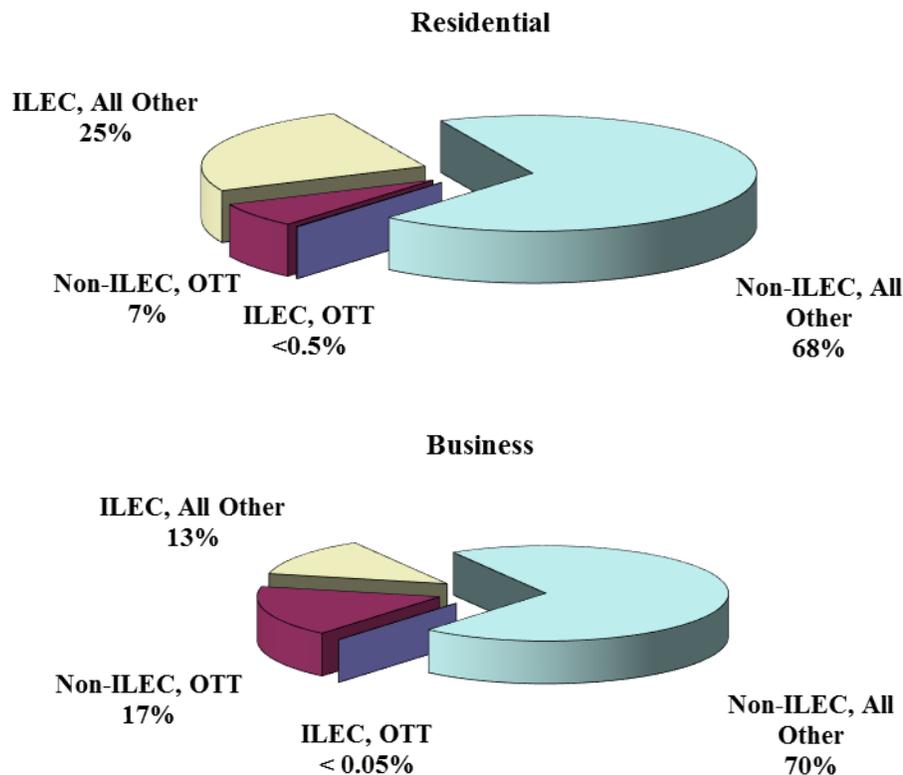
The revised Form 477 program collects two types of information about retail service relationships.

- Interconnected VoIP service retailers distinguish over-the-top (“OTT”) interconnected VoIP subscriptions—which, in the revised Form 477 program, means that the VoIP service end user has purchased (or has use of) a broadband connection from an entity that is not affiliated with the VoIP service retailer—by contrast to all other interconnected VoIP subscriptions. See Figure 3.
- Retailers of switched access lines and retailers of interconnected VoIP service distinguish between sales to end users who do not also purchase Internet access from them (including affiliates) and sales to end users who do purchase both these services. See Figure 4.

**Figure 3**  
**Interconnected VoIP Subscriberhip by Reported Service Features, Regulatory Status,**  
**and Customer Type as of December 31, 2015 (in Thousands)**

<b>Total</b>	<b>Over-the-Top (OTT)</b>	<b>All Other VoIP</b>	<b>Total</b>
ILEC	36	12,569	12,605
Non-ILEC	6,072	40,452	46,525
<b>Total</b>	<b>6,109</b>	<b>53,021</b>	<b>59,130</b>
<b>Residential</b>			
ILEC	34	10,058	10,093
Non-ILEC	2,754	27,113	29,868
<b>Residential Total</b>	<b>2,788</b>	<b>37,172</b>	<b>39,960</b>
<b>Business</b>			
ILEC	2	2,510	2,512
Non-ILEC	3,318	13,339	16,657
<b>Business Total</b>	<b>3,320</b>	<b>15,849</b>	<b>19,170</b>

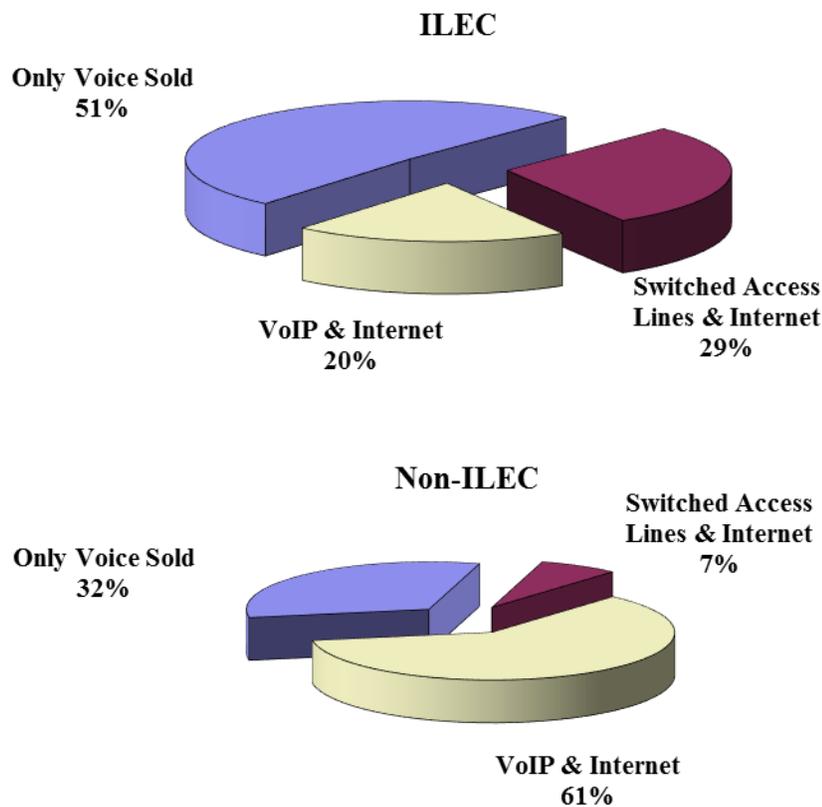
Figures may not sum to totals due to rounding.



**Figure 4**  
**Retail Relationships of Wireline Voice Telephone Service with Internet Access Service**  
**by Regulatory Status as of December 31, 2015 (in Thousands)**

<b>Total Sold to End Users</b>	<b>ILEC</b>	<b>Non-ILEC</b>	<b>Total</b>
Switched Access Lines	51,073	13,499	64,572
Over-the-Top VoIP	36	6,072	6,109
All Other VoIP	12,569	40,452	53,021
<b>Total</b>	<b>63,678</b>	<b>60,024</b>	<b>123,702</b>
<b>Internet Also Sold</b>			
Switched Access Lines	18,578	4,228	22,806
Over-the-Top VoIP	0	0	0
All Other VoIP	12,536	36,440	48,976
<b>Both Sold Total</b>	<b>31,114</b>	<b>40,668</b>	<b>71,782</b>
<b>Internet Not Also Sold</b>			
Switched Access Lines	32,495	9,271	41,766
Over-the-Top VoIP	36	6,072	6,109
All Other VoIP	33	4,012	4,045
<b>Only Voice Total</b>	<b>32,564</b>	<b>19,356</b>	<b>51,920</b>

Figures may not sum totals due to rounding.



## Detailed Voice Telephone Services Data

The remainder of this document consists of national information, technical notes, and a glossary of terms.

- Table 1 summarizes national-level voice telephone service subscription data for December 2015, and also for June 2015 and December 2014, for individual data elements collected by FCC Form 477.
- Table 2 shows the number of entities that reported the national-level subscription data for December 2015, and also for June 2015 and December 2014.

Table 1 and Table 2 are available in Excel format at <https://www.fcc.gov/voice-telephone-services-report>. Also available at that page are:

- State-level Subscriptions table in Excel format (data back to June 2014)
- State-level Number of Providers table in Excel format (data back to June 2014)
- County-level Subscriptions information in Excel format (data back to June 2014)
- CSV-format file of the consistent data series that are available back to December 2008, when interconnected VoIP retailers were first required to report subscription information on Form 477.

Earlier data, back to December 1999, are available in the Local Telephone Competition reports at <https://www.fcc.gov/general/local-telephone-competition-reports>. However, researchers who consider using the complete data series for trend analysis should recall the discontinuities in the data that arise from Form 477 modifications over time.

- Between December 1999 and December 2004, Form 477 collected state-by-state data only from local exchange carriers with at least 10,000 end-user switched access lines in service in the state, and from facilities-based mobile voice carriers with at least 10,000 mobile voice subscriptions in service in the state.
- Prior to December 2008, interconnected VoIP service retailers were not required to submit Form 477, but an unknown amount of interconnected VoIP service was included along with the switched access lines reported by some Form 477 filers.
- As discussed earlier in this report, the category standalone interconnected VoIP that was reported from December 2008 to December 2013 is different (that is, includes more subscriptions) than the category over-the-top interconnected VoIP that is reported starting with the June 2014 data.<sup>6</sup>

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<sup>6</sup> See footnote 2, above.

**Table 1. Voice Subscriptions (in Thousands) - Total for US**

Reference	Data element	Dec 2015	June 2015	Dec 2014
1	Mobile telephony	334,589	326,591	322,527
2	Directly-billed or prepaid	295,632	286,565	283,316
3	Not directly-billed or prepaid	38,958	40,026	39,210
4	Wireline End-User Switched Access Lines and Interconnected VoIP Subscriptions	123,702	124,836	126,844
5	Incumbent LECs	63,678	66,872	69,382
6	Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here.	60,024	57,964	57,462
7	Consumer-grade service	67,524	68,857	70,233
8	Incumbent LECs	35,900	37,888	39,433
9	Other (Non-ILECs)	31,624	30,969	30,800
10	Business & Government-grade service	56,177	55,979	56,610
11	Incumbent LECs	27,778	28,983	29,949
12	Other (Non-ILECs)	28,400	26,995	26,661
13	Local exchange telephone service (Switched Access Lines)	64,572	68,088	72,605
14	Incumbent LECs	51,073	54,639	58,045
15	Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here.	13,499	13,450	14,560
16	Consumer-grade service	27,564	29,766	32,000
17	Incumbent LECs	25,807	27,915	29,937
18	Other (Non-ILECs)	1,757	1,851	2,063
19	Business & Government-grade service	37,008	38,323	40,605
20	Incumbent LECs	25,265	26,724	28,108
21	Other (Non-ILECs)	11,743	11,598	12,497
22	Interconnected VoIP Subscriptions - Note: Includes both Over-the-top (OTT) and All Other sub-categories.	59,130	56,747	54,238
23	Incumbent LECs	12,605	12,233	11,336
24	Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here.	46,525	44,514	42,902
25	Consumer-grade service	39,960	39,091	38,234
26	Incumbent LECs	10,093	9,974	9,496
27	Other (Non-ILECs)	29,868	29,117	28,738
28	Business & Government-grade service	19,170	17,656	16,005
29	Incumbent LECs	2,512	2,259	1,841
30	Other (Non-ILECs)	16,657	15,397	14,164
31	Over-the-top interconnected VoIP	6,109	5,346	5,150
32	Incumbent LECs	36	37	28
33	Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here.	6,072	5,309	5,121
34	Consumer-grade service	2,788	2,649	2,882
35	Incumbent LECs	34	33	26
36	Other (Non-ILECs)	2,754	2,616	2,855
37	Business & Government-grade service	3,320	2,697	2,268
38	Incumbent LECs	2	3	2
39	Other (Non-ILECs)	3,318	2,694	2,266
40	All Other interconnected VoIP	53,021	51,401	49,089
41	Incumbent LECs	12,569	12,196	11,308
42	Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here.	40,452	39,205	37,781
43	Consumer-grade service	37,172	36,442	35,352
44	Incumbent LECs	10,058	9,940	9,469
45	Other (Non-ILECs)	27,113	26,502	25,883
46	Business & Government-grade service	15,849	14,959	13,737
47	Incumbent LECs	2,510	2,256	1,839
48	Other (Non-ILECs)	13,339	12,703	11,898
49	Local exchange telephone service by last-mile delivery medium	64,572	68,088	72,605
50	Fiber-to-the-premises	5,520	5,387	5,425
51	Incumbent LECs	3,457	3,394	3,443

**Table 1. Voice Subscriptions (in Thousands) - Total for US**

Reference	Data element	Dec 2015	June 2015	Dec 2014
52	Other (Non-ILECs)	2,064	1,993	1,982
53	Coaxial cable	1,058	1,416	1,194
54	Incumbent LECs	50	59	65
55	Other (Non-ILECs)	1,007	1,357	1,128
56	Terrestrial fixed wireless	540	545	582
57	Incumbent LECs	523	536	549
58	Other (Non-ILECs)	17	9	33
59	Copper local loop	57,454	60,741	65,404
60	Incumbent LECs	47,043	50,650	53,988
61	Other (Non-ILECs)	10,412	10,091	11,416
62	All Other interconnected VoIP by last-mile delivery medium	53,021	51,401	49,089
63	Fiber-to-the-premises	6,901	7,012	6,226
64	Incumbent LECs	5,306	5,163	4,941
65	Other (Non-ILECs)	1,595	1,849	1,285
66	Coaxial cable	33,416	32,285	31,557
67	Incumbent LECs	7	5	4
68	Other (Non-ILECs)	33,409	32,280	31,552
69	Terrestrial fixed wireless or satellite	69	68	67
70	Incumbent LECs	1	1	0
71	Other (Non-ILECs)	68	67	67
72	Copper local loop	12,635	12,036	11,239
73	Incumbent LECs	7,255	7,027	6,362
74	Other (Non-ILECs)	5,381	5,008	4,877
75	Non-Incumbent LEC local exchange telephone service by means of provisioning	13,499	13,450	14,560
76	Provided over owned last-mile facilities	4,551	4,661	4,852
77	Provided over UNE-L obtained from unaffiliated entity	2,504	2,368	3,270
78	Provided over other services obtained from unaffiliated entity	6,445	6,420	6,438
79	Incumbent LEC local exchange telephone service provided to unaffiliated carriers for resale	6,063	6,091	6,266
80	Wholesale lines	3,608	3,667	3,750
81	UNE-L	2,455	2,424	2,516
82	Local exchange telephone service and long-distance service	64,572	68,088	72,605
83	Consumer-grade service	27,564	29,766	32,000
84	Incumbent LEC is preferred long-distance carrier for its local exchange service customer	16,847	18,117	19,480
85	Incumbent LEC is not preferred long-distance carrier for its local exchange service customer	8,960	9,798	10,457
86	Non-ILEC is preferred long-distance carrier for its local exchange service customer	1,491	1,576	1,725
87	Non-ILEC is not preferred long-distance carrier for its local exchange service customer	265	275	337
88	Business & Government-grade service	37,008	38,323	40,605
89	Incumbent LEC is preferred long-distance carrier for its local exchange service customer	13,567	14,330	15,122
90	Incumbent LEC is not preferred long-distance carrier for its local exchange service customer	11,698	12,394	12,986
91	Non-ILEC is preferred long-distance carrier for its local exchange service customer	8,876	8,845	9,534
92	Non-ILEC is not preferred long-distance carrier for its local exchange service customer	2,866	2,754	2,964
93	End user buys local exchange telephone service and Internet access service from same entity	22,806	23,561	25,095
94	End user buys both services from incumbent LEC or affiliates	18,578	20,002	21,409
95	End user buys both services from Non-ILEC or affiliates	4,228	3,559	3,686
96	End user buys interconnected VoIP and Internet access service from same entity	48,976	46,755	43,456
97	End user buys both services from incumbent LEC or affiliates	12,536	12,169	11,285
98	End user buys both services from Non-ILEC or affiliates	36,440	34,586	32,171

**Table 2. Number of Providers Reporting Voice Subscriptions - Total for US**

Reference	Data element	Dec 2015	June 2015	Dec 2014
1	Mobile telephony	129	140	148
2	Directly-billed or prepaid	126	138	145
3	Not directly-billed or prepaid	24	26	28
4	Wireline End-User Switched Access Lines and Interconnected VoIP Subscriptions	1,644	1,616	1,584
5	Incumbent LECs	739	741	742
6	Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here.	1,178	1,132	1,092
7	Consumer-grade service	1,243	1,239	1,233
8	Incumbent LECs	738	740	741
9	Other (Non-ILECs)	759	745	729
10	Business & Government-grade service	1,539	1,506	1,468
11	Incumbent LECs	736	735	736
12	Other (Non-ILECs)	1,070	1,025	977
13	Local exchange telephone service (Switched Access Lines)	1,026	1,026	1,040
14	Incumbent LECs	736	738	740
15	Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here.	514	506	513
16	Consumer-grade service	921	918	927
17	Incumbent LECs	736	738	740
18	Other (Non-ILECs)	400	392	393
19	Business & Government-grade service	1,005	1,000	1,006
20	Incumbent LECs	734	733	735
21	Other (Non-ILECs)	491	483	481
22	Interconnected VoIP Subscriptions - Note: Includes both Over-the-top (OTT) and All Other sub-categories.	952	903	848
23	Incumbent LECs	89	85	78
24	Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here.	917	867	818
25	Consumer-grade service	494	485	469
26	Incumbent LECs	43	45	41
27	Other (Non-ILECs)	467	458	445
28	Business & Government-grade service	857	803	749
29	Incumbent LECs	85	80	74
30	Other (Non-ILECs)	825	770	720
31	Over-the-top interconnected VoIP	530	470	429
32	Incumbent LECs	17	17	13
33	Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here.	521	462	424
34	Consumer-grade service	155	147	129
35	Incumbent LECs	8	9	6
36	Other (Non-ILECs)	149	140	125
37	Business & Government-grade service	485	421	392
38	Incumbent LECs	14	14	11
39	Other (Non-ILECs)	479	416	389
40	All Other interconnected VoIP	604	604	575
41	Incumbent LECs	81	79	75
42	Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here.	573	572	545
43	Consumer-grade service	388	386	378
44	Incumbent LECs	38	40	38
45	Other (Non-ILECs)	365	364	356
46	Business & Government-grade service	538	537	500
47	Incumbent LECs	78	75	71
48	Other (Non-ILECs)	509	506	471
49	Local exchange telephone service by last-mile delivery medium	1,026	1,026	1,040
50	Fiber-to-the-premises	677	656	652
51	Incumbent LECs	530	518	504

**Table 2. Number of Providers Reporting Voice Subscriptions - Total for US**

Reference	Data element	Dec 2015	June 2015	Dec 2014
52	Other (Non-ILECs)	304	290	292
53	Coaxial cable	90	91	91
54	Incumbent LECs	21	23	22
55	Other (Non-ILECs)	79	77	77
56	Terrestrial fixed wireless	76	69	75
57	Incumbent LECs	44	46	51
58	Other (Non-ILECs)	43	33	33
59	Copper local loop	872	884	885
60	Incumbent LECs	639	654	650
61	Other (Non-ILECs)	371	363	367
62	All Other interconnected VoIP by last-mile delivery medium	604	604	575
63	Fiber-to-the-premises	339	320	284
64	Incumbent LECs	62	60	54
65	Other (Non-ILECs)	315	292	259
66	Coaxial cable	219	215	210
67	Incumbent LECs	9	10	10
68	Other (Non-ILECs)	214	211	207
69	Terrestrial fixed wireless or satellite	182	177	168
70	Incumbent LECs	8	8	9
71	Other (Non-ILECs)	175	171	162
72	Copper local loop	214	214	215
73	Incumbent LECs	41	40	41
74	Other (Non-ILECs)	191	195	196
75	Non-Incumbent LEC local exchange telephone service by means of provisioning	514	506	513
76	Provided over owned last-mile facilities	356	345	350
77	Provided over UNE-L obtained from unaffiliated entity	129	133	125
78	Provided over other services obtained from unaffiliated entity	226	226	224
79	Incumbent LEC local exchange telephone service provided to unaffiliated carriers for resale	42	40	37
80	Wholesale lines	41	38	37
81	UNE-L	10	11	10
82	Local exchange telephone service and long-distance service	1,026	1,026	1,040
83	Consumer-grade service	921	918	927
84	Incumbent LEC is preferred long-distance carrier for its local exchange service customer	677	666	668
85	Incumbent LEC is not preferred long-distance carrier for its local exchange service customer	681	689	687
86	Non-ILEC is preferred long-distance carrier for its local exchange service customer	372	357	353
87	Non-ILEC is not preferred long-distance carrier for its local exchange service customer	271	279	275
88	Business & Government-grade service	1,005	1,000	1,006
89	Incumbent LEC is preferred long-distance carrier for its local exchange service customer	675	661	667
90	Incumbent LEC is not preferred long-distance carrier for its local exchange service customer	658	662	655
91	Non-ILEC is preferred long-distance carrier for its local exchange service customer	442	430	420
92	Non-ILEC is not preferred long-distance carrier for its local exchange service customer	321	315	323
93	End user buys local exchange telephone service and Internet access service from same entity	903	900	905
94	End user buys both services from incumbent LEC or affiliates	711	710	712
95	End user buys both services from Non-ILEC or affiliates	406	397	392
96	End user buys interconnected VoIP and Internet access service from same entity	567	553	521
97	End user buys both services from incumbent LEC or affiliates	74	70	65
98	End user buys both services from Non-ILEC or affiliates	538	522	493

## Technical Notes

### **General**

Detailed information about the current Form 477 reporting requirements is available at <https://www.fcc.gov/general/form-477-resources-filers#block-menu-block-4>.

See Glossary for definitions of terms used in this report.

### **Counting lines and subscribers**

- Form 477 counts both switched access lines and interconnected VoIP subscriptions as the maximum number of calls that may be active, simultaneously, from the end user's location under the purchased service plan. All VoIP subscriptions discussed in this report are interconnected VoIP subscriptions.
- Form 477 data may not count all VoIP phone connections to Internet Protocol Private Branch Exchange (IP PBX) equipment that is owned by business end users because of the variety of ways the IP PBX may connect to the public switched telephone network.

### **Holding company-subsidiary relationships**

- When counting service providers that report voice telephone service in a particular geography, we count a holding company or common-control entity no more than once in any specified sub-category of total providers.
- Nationwide counts of providers are unique counts for any specified sub-category of total providers (for example, all non-ILECs or all interconnected VoIP providers); an entity operating in multiple states is counted only once.

### **ILEC-CLEC affiliations**

- If a CLEC is affiliated with an ILEC and reports some end-user switched access lines or interconnected VoIP subscriptions in the ILEC's service area in the state, then the switched access lines or interconnected VoIP subscriptions reported by the CLEC are allocated between the ILEC and non-ILEC categories based on staff estimates.

### **Mobile voice subscriptions**

- Commercial mobile radio service (CMRS) carriers that own or operate wireless networks report both their retail voice service subscriptions and the retail subscriptions of the mobile voice service resellers that use their network. Mobile voice service resellers do not file Form 477.

### **UNE-Platform lines replaced by commercial agreements**

- UNE-Platform (UNE-P) was the combination of ILEC loop UNE, switching UNE, and transport UNE. The Commission directed CLECs to migrate their retail customers served by UNE-P to an alternative arrangement within 12 months of the effective date of the *Triennial Review Remand Order*, that is, by March 11, 2006. See C.F.R. § 51.319(d)(2)(ii). Such lines are reported on Form 477 as ILEC wholesale lines provided to unaffiliated providers for resale.

## Glossary

<b>Term</b>	<b>Definition</b>
All Other interconnected VoIP	Interconnected VoIP service other than OTT interconnected VoIP. (See the definition of OTT VoIP, below.)
Circuit switching	A method of completing electronic communications in which a transmission path is established for dedicated use by a communication; the basis of the public switched telephone network (PSTN).
Coaxial cable	The technology widely used by cable system operators to terminate their services at the end user's premises.
Copper local loop	The technology widely used by telephone companies to terminate their service at the end user's premises.
CLEC	Competitive Local Exchange Carrier: A local exchange carrier (LEC) that operates within the traditional service area of an unaffiliated incumbent LEC.
End users	Residential, business, institutional, or government entities that use services for their own purposes and who do not resell such services to other entities.
Fixed wireless service	A radio communication service between specified fixed points.
FTTP or FTTH	Fiber to the Premises (Home): A network access architecture in which optical fiber is deployed all the way to the customer's premises (home).
Internet access service	Service that provides end users access to the Internet.
ILEC	Incumbent Local Exchange Carrier: A company or cooperative that was providing telephone service in a localized area, typically on a monopoly basis, prior to enactment of the Telecommunications Act of 1996.
Internet protocol or IP	A language and set of formal rules that govern how packets transit the Internet.
Interconnected VoIP or iVoIP	A service that enables real-time, two-way voice communications; requires a broadband connection from the user's location; requires Internet-protocol compatible customer premises equipment; and permits users generally to receive calls that originate on the public switched telephone network and to terminate calls to the public switched telephone network.
LEC	Local Exchange Carrier: A company that provides telephone service within a localized area and access services that connect its customers to long-distance (Interexchange Carrier) networks.
Local loop	The physical connection between the customer's premises and the telephone company's local switching office, typically provided using copper, fiber, or a combination of copper and fiber facilities.
Mobile wireless service	A radio communication service between mobile and fixed stations, or between mobile stations.

Non-ILEC	Any provider of communications services who does not have ILEC regulatory status. A voice-service affiliate of an ILEC that is operating outside the ILEC's traditional service area ("study area") is a Non-ILEC.
OTT interconnected VoIP	Over-the-top interconnected VoIP: Service delivered to the end-user customer's premises over a high-capacity connection that the customer obtains (that is, buys), or has the use of, from an entity not affiliated with the interconnected VoIP service provider. (Colloquially, "bring-your-own-broadband.")
PBX	Private Branch Exchange: A communications switch that is owned or leased by the service provider's end-user customer and generally located on the customer's premises.
Packet switching	A method of completing electronic communications in which the information is disassembled into discrete packets that are transmitted independently and later reassembled; IP is an example.
Retail wireline voice telephone service	Switched access lines and interconnected VoIP subscriptions for which an end user is the customer.
Switched access line	A service connection between an end user and the local telephone company's switch; the basis of plain old telephone service (POTS).
UNE	Unbundled Network Element: A physical or functional element of an ILEC network that must be provided to a CLEC at a cost-based price, as provide for in the Telecommunications Act of 1996.
UNE-L	UNE-Loop: An ILEC unbundled local loop provided to a CLEC at a cost-based price.
Wholesale switched access lines	Local telephone service provided to an unaffiliated telephone company, which resells the service to end users; typically provided by an ILEC to a CLEC.

# Customer Response

Publication: *Voice Telephone Services: Status as of December 31, 2015*

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

1. Please check the category that best describes you:

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- business customer evaluating vendors/service options
- consultant, law firm, lobbyist
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2. Please rate the report:      Excellent      Good      Satisfactory      Poor      No opinion

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