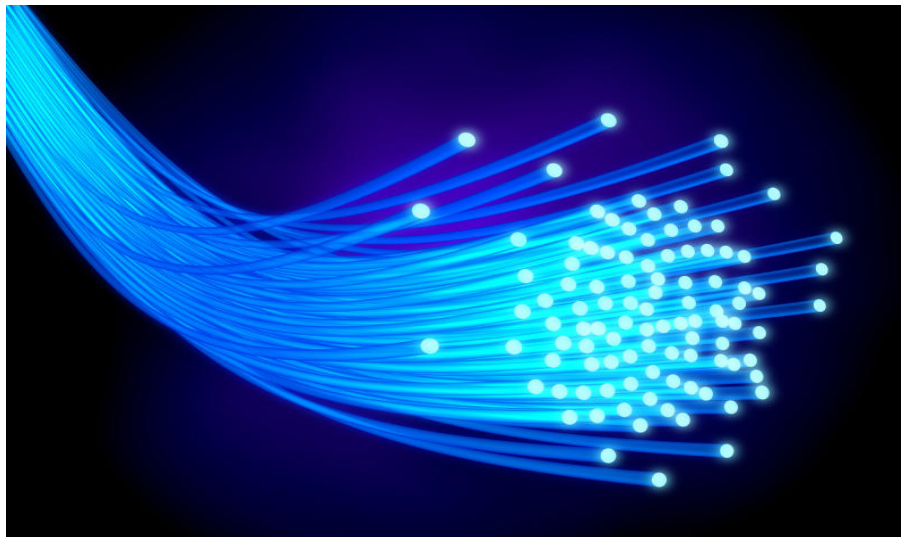


Report on the Status of

Competition in the Telecommunications Industry



AS OF DECEMBER 31, 2018



Florida Public Service Commission

Table of Contents

| | |
|---|-----|
| List of Tables | ii |
| List of Figures | iii |
| List of Acronyms | iv |
| Executive Summary | 1 |
| Chapter I. Introduction and Background | 3 |
| Chapter II. Wireline Market Overview | 5 |
| A. Incumbent Carriers..... | 5 |
| B. Mergers/Acquisitions | 6 |
| Chapter III. Status of Wireline Competition in Florida | 9 |
| A. Wireline Trends in Florida..... | 9 |
| B. Wireline Market Mix, Market Share, and Access Lines | 10 |
| C. Competitive Market Trends | 13 |
| Chapter IV. Wireless, VoIP, and Broadband..... | 15 |
| A. Wireless..... | 15 |
| B. Voice over Internet Protocol (VoIP) | 19 |
| C. Broadband | 23 |
| Chapter V. Competitive Market Analysis & Statutory Issues | 27 |
| A. Statutory Issue – Competitive Providers..... | 27 |
| B. Statutory Issue – Consumers | 29 |
| C. Statutory Issue – Affordability & Service Quality..... | 31 |
| D. Statutory Issue – Carrier Disputes | 32 |
| Chapter VI. State Activities | 33 |
| A. Intercarrier Matters | 33 |
| B. Lifeline | 34 |
| C. Telephone Relay Service..... | 35 |
| Chapter VII. Federal Activities..... | 37 |
| A. USTelecom Forbearance Petition | 37 |
| B. FCC Hurricane Response..... | 37 |
| C. Broadband Deployment..... | 39 |
| D. Open Internet/Net Neutrality | 39 |
| E. Universal Service..... | 40 |
| F. Major Calling Enforcement Actions..... | 46 |
| G. Public Safety Network | 47 |
| H. Robocalls..... | 48 |
| Appendix A. List of Certificated CLECs as of December 31, 2018..... | 49 |
| Glossary | 53 |

List of Tables

| | |
|---|----|
| Table 3-1 | |
| Florida Wireline Access Line Comparison..... | 12 |
| Table 4-1 | |
| U.S. Interconnected VoIP Subscribership by Customer Type..... | 20 |
| Table 6-1 | |
| Florida Lifeline Eligibility and Participation Rate..... | 34 |
| Table 7-1 | |
| Federal Universal Service Programs in Florida | 41 |
| Table 7-2 | |
| Lifeline Support Phase Down Schedule | 45 |

List of Figures

- Figure 3-1
Florida Wireline Access Line Trends10
- Figure 3-2
Florida Residential & Business CLEC Market Share.....11
- Figure 3-3
Florida Residential Wireline Trends by ILECs and CLECs.....13
- Figure 3-4
Florida Business Wireline Trends by ILECs and CLECs.....14
- Figure 4-1
U.S. Wireless Substitution Rates16
- Figure 4-2
U.S. Wireless Market Share as of 3rd Quarter 2018.....17
- Figure 4-3
U.S. Retail Voice Telephone Subscriptions.....19
- Figure 4-4
Florida Residential Interconnection VoIP Subscribers.....22
- Figure 4-5
Florida Business Interconnected VoIP Subscribers.....23
- Figure 4-6
Percentage of Broadband U.S. Households24
- Figure 4-7
Percentage of U.S. Non-Internet Users.....25
- Figure 5-1
2017 National Voice Market.....28
- Figure 5-2
Florida CLEC Market Share30
- Figure 5-3
Telephone Service Subscription Florida vs. Nation32
- Figure 7-1
USF Quarterly Assessment Factor.....42
- Figure 7-2
2018 Authorized Federal High-Cost Support43
- Figure 7-3
E-Rate Program Support and Funding Cap44

List of Acronyms

| | |
|------|---|
| CDC | Centers for Disease Control and Prevention |
| CLEC | Competitive Local Exchange Company |
| FCC | Federal Communications Commission |
| FPSC | Florida Public Service Commission, the Commission |
| FTRI | Florida Telecommunications Relay, Inc. |
| F.S. | Florida Statutes |
| ILEC | Incumbent Local Exchange Company |
| IP | Internet Protocol |
| kbps | kilobits per second |
| Mbps | Megabits per second |
| TASA | Telecommunications Access System Act of 1991 |
| TDM | Time Division Multiplexing |
| USF | Universal Service Fund |
| USAC | Universal Service Administrative Company |
| VoIP | Voice over Internet Protocol |

Executive Summary

Section 364.386, Florida Statutes, requires the Florida Public Service Commission (FPSC or Commission) to report on the status of competition in the telecommunications industry to the Legislature by August 1 of each year. As of December 31, 2018, there were 10 incumbent local exchange companies and 255 competitive local exchange companies certificated by the Commission to operate in Florida.

In 2018, the Florida wireline market continued to follow the national trend with AT&T, CenturyLink and Frontier all experiencing access line losses. The local and national markets continued to consolidate with several mergers and acquisitions. Several intrastate issues were resolved or initiated in 2018. The Lifeline subscription rate in Florida increased from 41.3 percent of eligible households in 2017 to 42.7 percent in 2018.

Consumers in Florida continue to migrate from traditional wireline service to wireless and cable/Voice over Internet Protocol (VoIP) services. The data indicates that residential migration may be increasing slightly, while business customers continue to migrate away from traditional wireline to VoIP technology in large numbers. Carriers reported approximately 1.9 million total wireline access lines in Florida for 2018, about 23 percent fewer than the previous year.

For the eighth year in a row, total wireline residential access lines were exceeded by total business access lines. Wireline residential and business access lines again experienced significant drops in 2018. Total residential access lines declined 23.6 percent, while total business access lines declined 23 percent. Much of this decline continues to be attributed to the transition to VoIP and wireless-only services. CenturyLink continues to be Florida's largest wireline residential access line provider, despite experiencing a 30.2 percent decline in residential lines during 2018. AT&T declined 19.8 percent, while Frontier declined 24.1 percent in residential access lines during the same period. Competitors continued to largely ignore the wireline residential market, as their market share dropped to less than one percent. The wireline competitors' business market share decreased to 33.5 percent in 2018. More than 62 percent of AT&T's and Frontier's wirelines were business lines, while fewer than 40 percent of CenturyLink's wirelines were business lines. More than 99 percent of competitors' access lines were business lines.

As reported for the past several years, intermodal competition from wireless, VoIP, and broadband continued to drive the telecommunications markets in 2018. According to the most recent FCC data, there are an estimated 20.8 million wireless subscriptions in Florida, and greater than 4.5 million VoIP connections.

Analysis of the telecommunications data obtained by the Commission produced the following conclusions:

- Many competitive local exchange companies reported offering a variety of services and packages comparable to those offered by incumbents. Subscribers to cable and business VoIP services continued to increase, while the number of wireless subscriptions in Florida declined slightly. These factors contribute to the conclusion that competitive

providers are able to offer functionally equivalent services to both business and residential customers.

- The continued decrease in both business and residential incumbent local exchange company wireline access lines demonstrates that customers are finding reasonable pricing packages and functionality with competitive local exchange companies, cable providers, and wireless providers, as well as VoIP services from the incumbent local exchange companies.
- Based on the continued growth of interconnected VoIP services and wireless-only households, the network reliability of non-incumbent providers is sufficient to satisfy customers. The Federal Communications Commission-reported telephone penetration rate of 92.7 percent for Florida suggests that the vast majority of Florida residents are able to afford telephone service. The number and variety of competitive choices among all types of service providers suggest that competition is continuing to have a positive impact on the telecommunications market in Florida.

Chapter I. Introduction and Background

Chapter 364, F.S., requires the Commission to prepare and deliver a report on the status of competition in the telecommunications industry to the President of the Senate, the Speaker of the House of Representatives, and the majority and minority leaders of the Senate and the House of Representatives on August 1 of each year. Section 364.386, F.S., requires that the report address the following four elements:

1. The ability of competitive providers to make functionally equivalent local exchange services available to both residential and business customers at competitive rates, terms, and conditions.
2. The ability of customers to obtain functionally equivalent services at comparable rates, terms, and conditions.
3. The overall impact of competition on the maintenance of reasonably affordable and reliable high-quality telecommunications services.
4. A list and short description of any carrier disputes filed under Section 364.16, F.S.

The Commission is required to make requests to local exchange telecommunications providers each year for the data required to complete the report. The data request was mailed on February 22, 2019, to 10 incumbent local exchange companies (ILECs) and 255 competitive local exchange companies (CLECs). Responses were due April 15, 2019. The data presented and the analyses that follow accurately reflect the information provided by the ILECs and the reporting CLECs.

The report is divided into chapters that summarize key events and data that may have a short-term or long-term effect on the Florida telecommunications market. Chapter II summarizes the current state of the ILECs nationally, primarily as reported in their respective annual reports filed with the Securities and Exchange Commission. Chapter II also summarizes merger activity in 2018 affecting Florida-certificated carriers. Chapter III presents data regarding wireline access lines in Florida, including access line trends, residential/business access line mix, and market share. Chapter IV discusses the continued development of the wireline market's principle forms of intermodal competition: wireless, Voice Internet Protocol (VoIP) and broadband. Chapter V primarily uses data outlined in the other chapters to answer the four statutory questions delineated above. Chapter VI provides a summary of state activities affecting local telecommunications competition in 2018 including intercarrier matters, Lifeline, and Telecommunications Relay Service. Chapter VII details some of the major federal activities that may affect the Florida market.

Chapter II. Wireline Market Overview

One tool to gauge whether the Florida market is isolated or a part of a national trend is to look at companies' annual federal filings. National trends are often reflected in the companies' respective annual reports filed with the Securities and Exchange Commission. There are 10 ILECs providing wireline services in Florida, the largest of which are AT&T, CenturyLink, and Frontier.¹ These companies' annual reports showed that, like in Florida, they continue to face access line losses nationally as customers disconnect traditional landline services and migrate to wireless and VoIP services.

Telecommunications carriers seeking to transfer assets or corporate control in mergers and acquisitions must first receive approval from the FCC, which examines the public interest impact of proposed mergers or acquisitions. In 2018, there were 70 telecommunications mergers and acquisitions nationally. Recent transactions of interest to Florida are described below.

A. Incumbent Carriers

AT&T reported losses of approximately 807,000 switched access lines nationwide (16.7 percent) in 2018. In Florida, AT&T's total switched access lines declined by nearly 131,000 (15.6 percent), with residential access lines decreasing by over 65,000 lines (19.8 percent) and business lines by over 65,000 lines (12.8 percent). In 2018, AT&T reported a decrease in operating revenues in their communications segment of approximately \$5.8 billion nationwide, a decline of 3.8 percent. After the acquisition of Time Warner, overall revenues increased 6.4 percent, from \$160.5 billion in 2017, to \$170.8 billion in 2018. AT&T reported over \$21.2 billion in capital expenditures in 2018.²

CenturyLink "no longer report[s] or discuss[es] access lines as a key operating metric" and omitted this information from the company's Annual Report.³ In Florida, CenturyLink's total switched access lines declined by over 163,000 (26.0 percent), with residential access lines decreasing over 121,000 (30.2 percent), and business access lines decreasing over 42,000 (18.7 percent). In 2018, CenturyLink reported an increase in operating revenues of approximately \$5.78 billion nationwide, a gain of 24 percent.⁴ CenturyLink's capital expenditures for 2018 approached \$3.2 billion, and the company estimates capital expenditures for 2019 will be between \$3.5 billion to \$3.8 billion.⁵

Frontier experienced an eight percent loss in access lines nationwide compared to 2017, ending 2018 with approximately 4.1 million subscribers.⁶ In Florida, Frontier's total switched access

¹ Responses to Local Competition Data Request 2019.

² AT&T Inc., Form 10-K, December 31, 2018, , <https://otp.tools.investis.com/clients/us/atnt2/sec/sec-show.aspx?Type=page&FilingId=13241251-431955-1012380&CIK=0000732717&Index=90000>, Exhibit 13, p. 1, accessed May 3, 2019; Responses to Local Competition Data Request 2019.

³ CenturyLink Form 10-K, December 31, 2018, <http://ir.centurylink.com/file//Index?KeyFile=397066026&Output=3&OSID=9>, p. 53, accessed May 6, 2019.

⁴ Ibid, p. 51.

⁵ Ibid. p. 74, 88.

⁶ Frontier Communications, Form 10-K, December 31, 2018, https://www.sec.gov/Archives/edgar/data/20520/000002052018000007/ft-20171231x10k.htm#Managements_Discussion_And_Analysis, p. 31, accessed May 6, 2019.

lines declined by around 87,000 (28.3 percent), with residential access lines decreasing nearly 25,000 (24.1 percent) and business lines by nearly 62,000 (30.5 percent). In 2018, Frontier reported a decrease in revenue of over \$500 million nationwide, a loss of six percent.⁷ In 2018, Frontier's capital expenditures approached \$1.2 billion.⁸

The seven rural Florida ILECs experienced a more modest contraction in the number of switched access lines in their respective wireline service areas. In 2018, rural carriers in Florida saw their total access lines decline by approximately 5,000 (4.4 percent), while residential lines decreased by 1,200 (1.6 percent) and business lines decreased by nearly 3,800 (10.4 percent).⁹

Windstream is the largest of the rural ILECs and operates in northeast Florida. Nationally, Windstream has approximately 1.4 million residential and small business customers, representing a decline of nearly 31,000 (2.3 percent) from the previous year.¹⁰ In Florida, Windstream experienced a slight increase in switched access lines of 477 (0.8 percent), consisting of a 2,278 increase (4.7 percent) in residential lines and a loss of 1,801 (13.2 percent) business lines.¹¹ According to Windstream's annual report, the company incurred \$820.2 million in capital expenditures in 2018.¹²

B. Mergers/Acquisitions

1. Windstream Services, LLC/MassComm, Inc., d/b/a Mass Communications

In December 2017, Windstream Services, LLC (Windstream) announced a merger with MassComm, Inc., d/b/a Mass Communications (MassComm). This transaction would be for cash totaling \$37.5 million. Windstream is an ILEC, while MassComm is a CLEC; both companies operate in the state of Florida.

MassComm concentrated its marketing to small and medium-sized organizations ranging from education to finance. The acquisition closed on March 27, 2018.¹³

⁷ Ibid, p.46.

⁸ Ibid.

⁹ Responses to Local Competition Data Request for 2019.

¹⁰ Windstream, 10-K, December 31, 2018, <https://d18rn0p25nwr6d.cloudfront.net/CIK-0001282266/ee6d6be5-d8e5-4b34-8e41-cf74b3894e92.pdf>, Table. F-17, accessed May 6, 2019.

¹¹ Responses to Local Competition Data Request 2019.

¹² Windstream, [2018 10-K](#), p. 30.

¹³ "Windstream acquires MASS Communications," GlobeNewswire, released March 27, 2018, <https://www.globenewswire.com/news-release/2018/03/27/1453977/0/en/Windstream-acquires-MASS-Communications.html>, accessed April 15, 2019.

2. Broadsmart Florida, Inc./Nexxis Inc.

The shareholders of Broadsmart Florida Inc. (Broadsmart) and Nexxis Inc. (Nexxis) came to an agreement on October 19, 2017, for the acquisition of controlling ownership in Broadsmart.¹⁴ On March 20, 2018, Broadsmart announced that its acquisition by Nexxis had been completed. Broadsmart operates as a CLEC in the state of Florida. Nexxis provides U.S. based VoIP services.¹⁵

3. AT&T/Time Warner

On October 22, 2016, AT&T Inc. announced that it intended to acquire Time Warner Inc. The new company would have a total equity value of \$85.4 billion and a total transaction value of \$108.7 billion. On November 20, 2017, the Department of Justice sued to block the merger on the grounds that AT&T could use control of Time Warner content to stifle innovation and drive up prices without market competition. AT&T argued that this form of merger was a vertical merger, thus it did not impair market competition. District Judge Richard Leon of the District Court for the District of Columbia approved the merger on June 12, 2018.^{16, 17, 18} The U.S. Court of Appeals for the D.C. Circuit upheld the decision on February 25, 2019. The Department of Justice did not appeal the decision further.

¹⁴ “Broadsmart Florida, Inc. (TX587) and Nexxis Inc. Notice of Transaction That Will Result in a Change to the Ownership of an Authorized Telecommunications Provider,” Florida Public Service Commission library, released April 18, 2018. <http://www.floridapsc.com/library/filings/2018/03046-2018/03046-2018.pdf>, accessed April 15, 2019.

¹⁵ “Domestic Section 214 Application Filed for the Transfer of Control of Broadsmart Florida, Inc. to Nexxis Inc.” Federal Communications Commission Public Notice, released March 20, 2018, <https://docs.fcc.gov/public/attachments/DA-18-276A1.pdf>, accessed April 15, 2019.

¹⁶ AT&T Press Release, “AT&T to Acquire Time Warner,” released October 22, 2016, http://about.att.com/story/att_to_acquire_time_warner.html, accessed May 1, 2018.

¹⁷ The Hill, “Closing arguments made in AT&T-Time Warner merger trial,” published April 30, 2018, <http://thehill.com/policy/technology/385510-justice-makes-closing-argument-against-att-time-warner-deal>, accessed May 1, 2018.

¹⁸ Telecompetitor, “AT&T Time Warner Approval is Without Conditions,” published June 12, 2018, <http://www.telecompetitor.com/att-time-warner-approval-is-without-conditions/>, accessed June 20, 2018.

Chapter III. Status of Wireline Competition in Florida

For the past decade, the technologies used to deliver voice telephony have continued to evolve. Analog circuits using traditional Time Division Multiplexing (TDM) and copper wires are being replaced by wireless cell-based transmission and VoIP, which is provided via a digital broadband connection, either wireless or wired.

Wireless, VoIP, and broadband are all exempt from FPSC jurisdiction. The FPSC is therefore limited in what data it can collect regarding these technologies. Trends in these technologies are summarized in Chapter IV.

TDM-based wireline service is still used throughout the country and Florida, and is the primary subject of this report. Also, the telecommunications network as a whole utilizes many of the traditional wireline facilities for interoffice and long distance transport.

This chapter discusses the number, market mix, and market share of residential and business wirelines. Knowledge of the number of wirelines and the trends for market participants is essential to understanding the state of the market, as well as in helping to inform policy decisions.

A. Wireline Trends in Florida

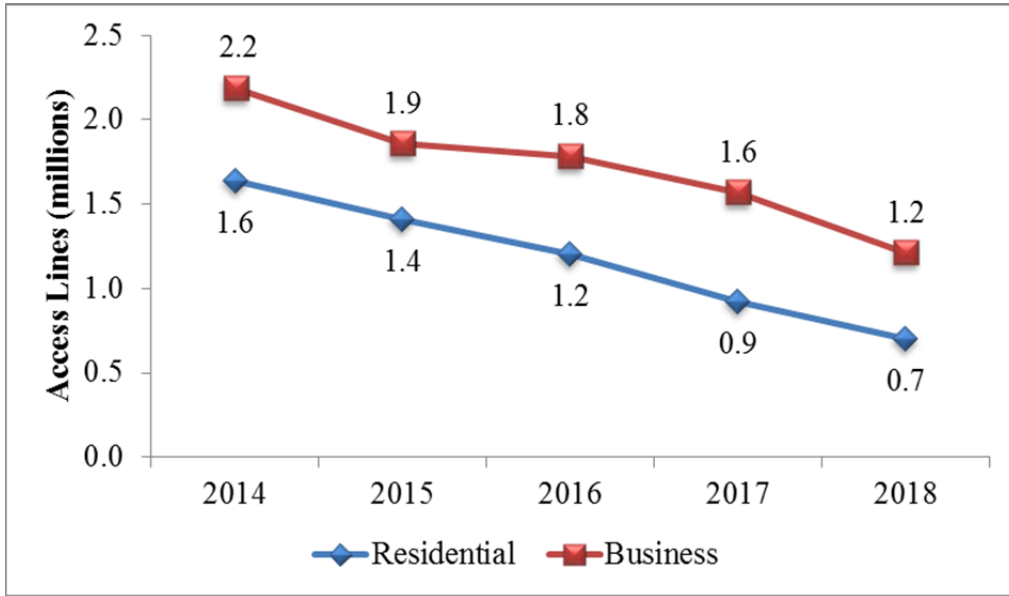
Total combined traditional wirelines for ILECs and CLECs declined 23.2 percent, from approximately 2.5 million in December 2017 to 1.9 million as of December 2018. From 2014 through 2018, the total number of traditional wirelines declined by around 1.9 million, dropping by half.

Residential access lines, which totaled approximately 703,000 as of December 2018, fell by 23.6 percent from the previous year. Florida CLECs, which represent relatively few residential access lines, reported a decrease of greater than 4,600 lines, or 55.7 percent in 2018. A majority of this decline was due to the largest remaining residential CLEC provider exiting the market.

The number of wireline business connections declined as well. The total business access lines reported for ILECs and CLECs were approximately 1.2 million, a decrease of around 23 percent from 2017 to 2018. The decline consisted of approximately 173,000 ILEC business access lines and nearly 186,000 CLEC business access lines. Of the incumbent carriers, AT&T experienced the largest decline in business access lines with losses of nearly 66,000, while CenturyLink and Frontier lost around 42,000 and 62,000 business lines, respectively. Rural ILECs had a smaller loss at around 3,700 lines. These losses equate to an 11.5 percent decline in the combined line total of the three largest Florida ILECs, versus a 10.4 percent decline in the combined line total of the rural ILECs.

Figure 3-1 illustrates the overall trend in Florida for both residential and business lines (not including VoIP connections). Based on current data, declines in residential lines continued at nearly the same rate in 2018, while the decline in business lines accelerated significantly.

**Figure 3-1
Florida Wireline Access Line Trends**



Source: Responses to FPSC data requests (2015-2019)

B. Wireline Market Mix, Market Share, and Access Lines

1. Market Mix

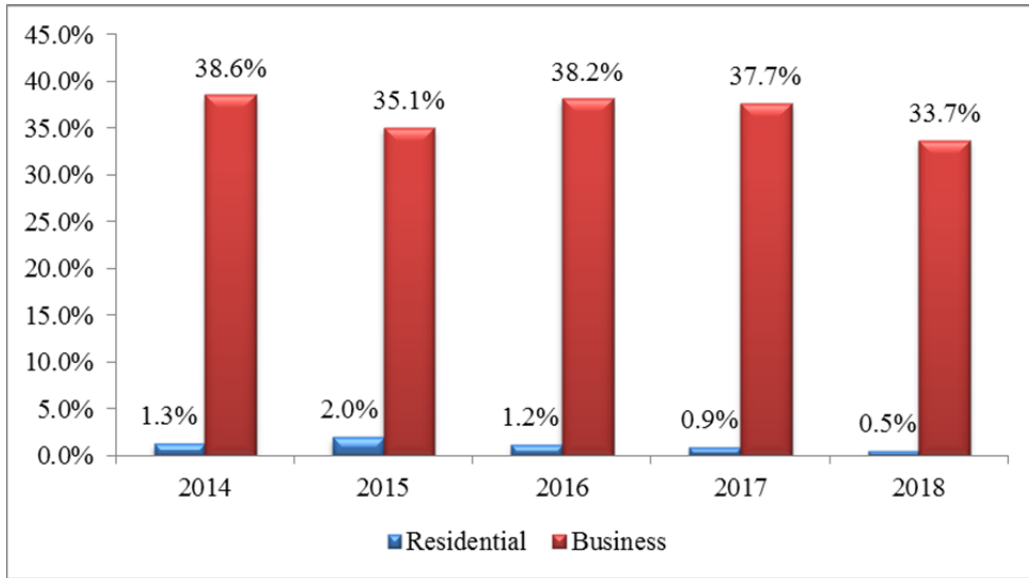
The composition of customers served by ILECs and CLECs has shifted over time. In general, both ILECs and CLECs have seen an increased concentration of traditional wireline business customers as residential customers migrate to other options. The business-to-residential customer mix for ILECs was about 30 percent business and 70 percent residential in 2004. By 2017, the mix for ILECs had shifted so much that the percentage of traditional business wirelines exceeded the percentage of traditional residential wirelines. The trend continued in 2018, with ILECs having nearly 54 percent business lines and 47 percent residential lines.

The shift in mix has been even more pronounced in the CLEC market. In 2004, the business to residential customer mix for CLECs was about 63 percent business and 37 percent residential. By 2018, the CLEC business-to-residential customer mix had shifted to over 99 percent business lines and less than one percent residential.

2. Market Share

CLECs have traditionally focused on business customers. Figure 3-2 illustrates FPSC data on CLEC market share by business and residential customer classes. The inverse of this percentage would be market share for the ILECs in Florida. According to FPSC data, the CLEC residential market share decreased from 0.9 percent in 2017 to 0.5 percent in 2018, while the CLEC business market share decreased from 37.7 percent in 2017 to 33.7 percent in 2018.

Figure 3-2
Florida Residential & Business CLEC Market Share



Source: Responses to FPSC data requests (2014-2019)

The results from FPSC data in Figure 3-2 are similar to data provided by the FCC that reported less than one percent CLEC residential market share and slightly over 33 percent business market share in June 2017.¹⁹

¹⁹ FCC, “Voice Telephone Services Report as of June 30, 2017,” released November 2018, <https://www.fcc.gov/voice-telephone-services-report>, State-Level Subscriptions (Excel), accessed May 17, 2019.

3. Access Lines

Local exchange companies were serving approximately 1.9 million lines in Florida as of December 31, 2018, a decline of 23.2 percent from 2017, as illustrated in Table 3-1. In 2018, ILEC residential access lines decreased by 23.3 percent, while ILEC business lines decreased by 17.8 percent. Among the ILECs, CenturyLink had the largest decline in residential access lines at 30.2 percent, while Frontier experienced the largest loss of business access lines at 30.5 percent. The CLECs experienced a relatively small decline in residential access lines. Given their small market presence, this yielded the largest percentage loss at 55.7 percent. CLEC business access lines decreased by 30.8 percent.

**Table 3-1
Florida Wireline Access Line Comparison**

| | | ILECs | CLECs | Both |
|-------------------------|-------------|-----------|---------|-----------|
| 2015 | Residential | 1,381,124 | 27,813 | 1,408,937 |
| | Business | 1,205,777 | 652,214 | 1,857,991 |
| | Total | 2,586,901 | 680,027 | 3,266,928 |
| 2016 | Residential | 1,187,615 | 14,415 | 1,202,030 |
| | Business | 1,104,197 | 681,398 | 1,785,595 |
| | Total | 2,291,812 | 695,813 | 2,987,625 |
| 2017 | Residential | 911,814 | 8,341 | 920,155 |
| | Business | 976,768 | 591,089 | 1,567,857 |
| | Total | 1,888,582 | 599,430 | 2,488,012 |
| 2018 | Residential | 698,975 | 3,695 | 702,670 |
| | Business | 803,240 | 409,122 | 1,212,362 |
| | Total | 1,502,215 | 412,817 | 1,915,032 |
| Change 2017- 2018 | Residential | -23.3% | -55.7% | -23.6% |
| | Business | -17.8% | -30.8% | -22.7% |
| | Total | -20.5% | -31.1% | -23.0% |

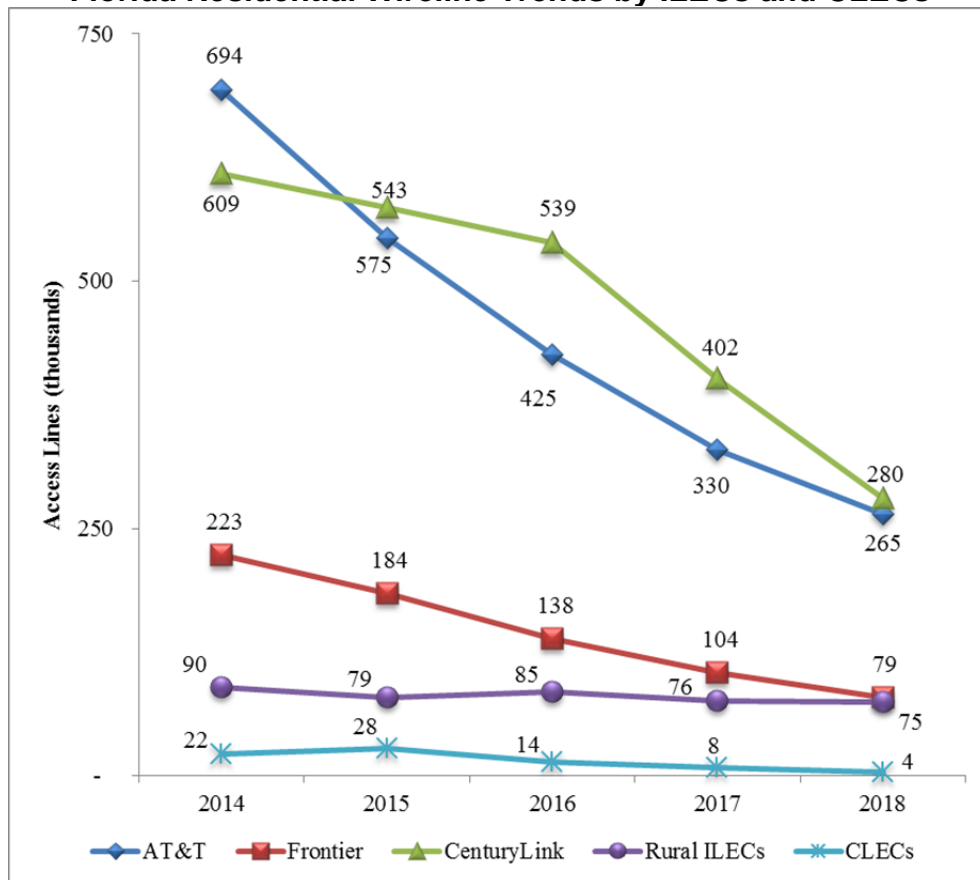
Source: Responses to FPSC data requests (2016-2019)

C. Competitive Market Trends

1. Residential Wireline Access Line Trends

Figure 3-3 displays the wireline residential access line trends separately for AT&T, Frontier, CenturyLink, aggregate rural ILECs, and aggregate CLECs. Over the past five years, AT&T and Frontier have both averaged losses of around 22 percent per year, while CenturyLink has experienced an average of about 14 percent decline per year in residential access lines. During that period, CLEC residential lines declined by an annual average of 32 percent, while rural ILEC access lines declined by an average of four percent.

Figure 3-3
Florida Residential Wireline Trends by ILECs and CLECs



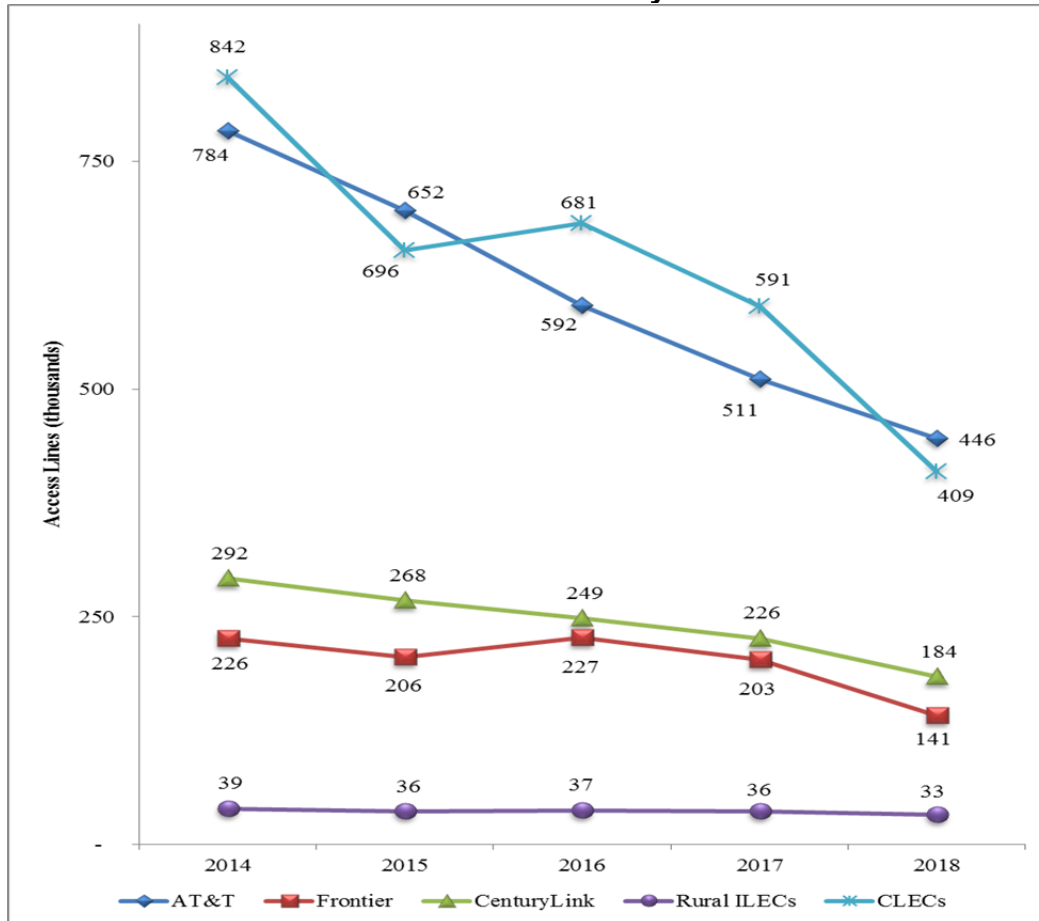
Source: Responses to FPSC data requests (2015-2019)

In 2018, Frontier's rate of residential line losses stayed nearly the same as the previous year. CenturyLink experienced a loss of 25.4 percent in 2017 and a loss of 30.2 percent in 2018. The CLECs had line losses of 42.9 percent in 2017 and 55.7 percent in 2018. AT&T experienced line losses of 22.4 percent in 2017 and 19.8 percent in 2018, while the rural ILECs reported access line losses of 10.6 percent in 2017 and 1.6 percent in 2018. AT&T and the rural ILECs experienced a slowing rate of residential line losses, while Frontier's rate of line loss remained unchanged. CenturyLink and the CLECs rate of line losses accelerated.

2. Business Wireline Access Line Trends

Figure 3-4 displays the wireline business access line levels separately for AT&T, Frontier, CenturyLink, aggregate rural ILECs, and aggregate CLECs. Over the past five years, AT&T has experienced an average decline of about 13 percent per year, while Frontier and CenturyLink have experienced average annual declines of around 10 percent, respectively. The average annual decline in CLEC business access lines over the past five years is 17 percent, while rural ILEC business access lines declined by four percent annually over the same period.

Figure 3-4
Florida Business Wireline Trends by ILECs and CLECs



Source: Responses to FPSC data requests (2015-2019)

AT&T experienced business wireline losses of 13.7 percent in 2017 and 12.8 percent in 2018. Frontier lost 10.6 percent of its business wirelines in 2017 and 30.5 percent in 2018. CenturyLink lost 9.2 percent of its business lines in 2017 and 18.7 percent in 2018. The rural ILECs reported line losses of 2.7 percent in 2017 and 10.4 percent in 2018 while the CLECs reported business wireline declines of 13.2 percent in 2017 and 30.8 percent in 2018. AT&T's rate of business line losses slowed, while all others accelerated.

Chapter IV. Wireless, VoIP, and Broadband

Wireless, VoIP, and broadband are the principle communication technologies consumers are choosing today. As previously discussed, they are replacing traditional wireline service. This chapter summarizes current trends in these technologies.

A. Wireless

Wireless service is delivered to consumers via the now-ubiquitous cell telephone and/or smartphone. Dr. Anna-Maria Kovacs, Visiting Senior Policy Scholar at the Georgetown Center for Business and Public Policy, notes that despite a penetration rate of over 120 percent, the nation still has an insatiable appetite for wireless devices and usage.²⁰

According to the FCC's most recent data, the four largest facilities-based wireless service providers in the United States – AT&T, Sprint, T-Mobile, and Verizon Wireless – accounted for over 400 million connections by year-end 2017.²¹ Fierce Wireless reports that wireless subscriber connections have grown from 417.5 million in 2017 to an estimated 441.1 million by the end of the third quarter 2018, representing a 5.6 percent increase over third quarter 2017.^{22,23}

1. Wireless Substitution

As wireless devices saturate the market, consumers are choosing to replace their traditional wired service with only cell service. This is called “wireless substitution,” and it has a direct effect on the provisioning of traditional wireline service. Though nearly 36 percent of U.S. households subscribe to both wireline and wireless service, this segment continues to decline. Wireless-only households in the United States rose from 52.5 percent in June 2017 to 54.9 percent one year later. Substitution continued to increase while the number of households with both wireline and wireless service decreased 1.5 percent.²⁴ The number of wireline-only households decreased 0.5 percentage points to 5.4 percent.²⁵ Figure 4-1 shows national trends in the percentage of households with wireless only, wireline only, and dual household usage.

²⁰ Anna-Maria Kovacs, Ph.D., CFA, “Competition in the U.S. Wireless Services Market”, August 2018, <https://cbpp.georgetown.edu/newsroom/news/anna-maria-kovacs-releases-policy-paper-competition-us-wireless-services-market>, accessed May 31, 2019.

²¹ FCC, 2018 Communications Marketplace Report, released December 26, 2018, <https://docs.fcc.gov/public/attachments/FCC-18-181A1.pdf>, accessed May 7, 2019.

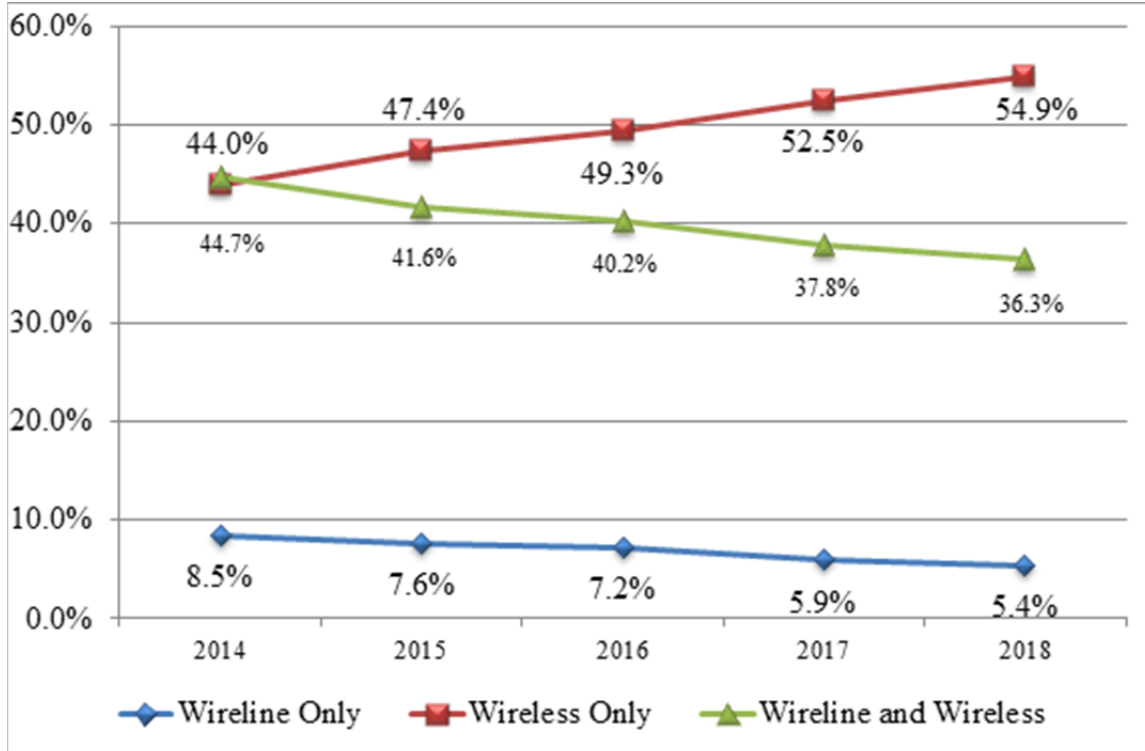
²² Fierce Wireless, "How Verizon, AT&T, T-Mobile, Sprint and more stacked up in Q3 2018: The top 7 carriers," November 6, 2018, <https://www.fiercewireless.com/wireless/how-verizon-at-t-t-mobile-sprint-and-more-stacked-up-q3-2018-top-7-carriers>, accessed April 30, 2019.

²³ Fierce Wireless, “How Verizon, AT&T, T-Mobile, Sprint and more stacked up in Q3 2017: The top 7 carriers”, November 10, 2017, <https://www.fiercewireless.com/wireless/how-verizon-at-t-t-mobile-sprint-and-more-stacked-up-q3-2017-top-7-carriers>, accessed May 21, 2019.

²⁴ Blumberg SJ, Luke JV. Wireless substitution: Early release of estimates from the National Health Interview Survey, January – June 2018. National Center for Health Statistics, released December 2018, <https://www.cdc.gov/nchs/nhis/releases.htm>, accessed April 29, 2019.

²⁵ Ibid.

**Figure 4-1
U.S. Wireless Substitution Rates**



Source: CDC/NCHS, National Health Interview Survey

2. Florida Trends

According to the most recent data available from the FCC, Florida’s wireless subscriptions were estimated to be 20,754,000 as of June 2017. This is a modest decrease of 0.4 percent from the previous year.²⁶

Florida’s rate of wireless substitution continues to closely track national trends.²⁷ Florida’s wireless-only households increased to 57.5 percent in 2017. This percentage is slightly higher than the national average of 52.5 percent for the same period.²⁸ While state-level 2018 data for Florida will not be available from the FCC until 2020, Florida’s wireless substitution rate is expected to maintain a level similar to the national average.

²⁶ FCC, Voice Telephone Services Report, State-Level Subscriptions, released November 2018, https://www.fcc.gov/sites/default/files/vts_st1.xlsx, accessed May 31, 2019.

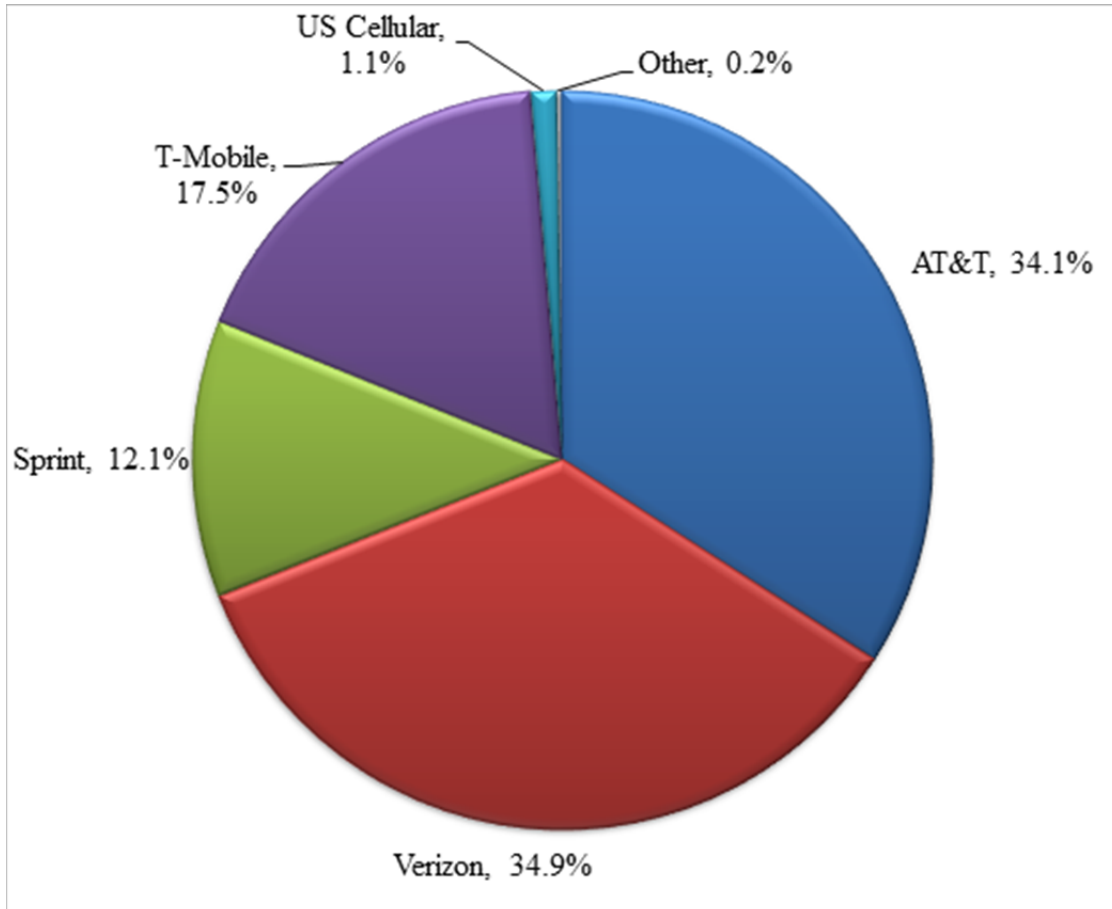
²⁷ National Center for Health Statistics, Centers for Disease Control and Prevention, “Wireless Substitution State-Level Estimates from the National Health Interview Survey,” released March 2019, http://www.cdc.gov/nchs/nhis/new_nhis.htm, accessed May 8, 2019.

²⁸ Blumberg SJ, Luke JV. Wireless substitution: Early release of estimates from the National Health Interview Survey, January – June 2018. National Center for Health Statistics, released December 2018, <https://www.cdc.gov/nchs/nhis/releases.htm>, accessed April 29, 2019.

3. Networks and Usage

Among wireless providers, Verizon continues to lead the market with 34.9 percent of the wireless market. AT&T, T-Mobile, and Sprint follow with 34.1 percent, 17.5 percent, and 12.1 percent, respectively.²⁹ Current wireless market share is shown in Figure 4-2.

Figure 4-2
U.S. Wireless Market Share as of 3rd Quarter 2018



Source: Fierce Wireless

4. New Technology – 5G

Wireless technology continues to outpace innovations for wireline services. As discussed in previous reports, this is not an indication the switched access network is no longer necessary. Wireline facilities are the backbone of the new generation of wireless tools available to consumers. The switched access network is instrumentally critical to wireless technology. End users use their devices wirelessly, but once their signal reaches a cell tower/receiver, the voice and data signals are transported primarily through landline facilities to the termination point.

²⁹ Fierce Wireless, "How Verizon, AT&T, T-Mobile, Sprint and more stacked up in Q3 2018: The top 7 carriers," November 6, 2018, <https://www.fiercewireless.com/wireless/how-verizon-at-t-t-mobile-sprint-and-more-stacked-up-q3-2018-top-7-carriers>, Accessed April 30, 2019.

Thus, the wireline network will be vital in the advancement of the fifth generation wireless (5G) services.

The FCC's strategy to promote mobile broadband 5G technology includes three key components: (1) pushing more spectrum into the marketplace; (2) updating infrastructure policy; and (3) modernizing regulations. The FCC has held several spectrum auctions, and it has acted to simplify permitting and siting rules to ease infrastructure deployment.³⁰

Verizon expects to launch mobile 5G services in 2019 as compatible devices become available.³¹ In addition to announcing it is launching 5G services in parts of at least 30 cities this year, Verizon has announced it will offer the new Samsung Galaxy S10 5G to new and existing customers.³²

Sprint is continuing the deployment of its Next-Gen Network plan and indicates its total 5G footprint covers more than 1,000 square miles.³³ According to Sprint, its spectrum holdings will allow it to introduce 5G in parallel with 4G service over the same 2.5 GHz spectrum band without disrupting the capacity needed to support 4G users.³⁴

AT&T believes increased speeds and network efficiency foreseen with 5G technology will enable the deployment of internet-connected devices and faster delivery of data services. AT&T continues to invest in its wireless network as it looks to provide future service offerings and participate in technologies such as 5G and millimeter-wave bands.³⁵

If its merger with Sprint is approved, T-Mobile expects to quickly launch a nationwide 5G network, accelerate innovation, and increase competition in the U.S. wireless, video and broadband industries.³⁶ The company is continuing its network expansion to increase current capabilities as it prepares for the nationwide rollout of 5G services.³⁷

³⁰ FCC, "The FCC's 5G FAST Plan," updated April 12, 2019, <https://www.fcc.gov/5G>, accessed April 19, 2019.

³¹ Verizon Communications Inc., Form 10-K for the Period Ending 12/31/2018, http://verizon.api.edgar-online.com/EFX_dll/EdgarPro.dll?FetchFilingHTML1?SessionID=vcRyUScz6oRsn-J&ID=13233286, accessed May 8, 2019.

³² Verizon expands 5G to 20 more cities; pre-order open for Samsung S10 5G phones, FierceWireless, Kendra Chamberlain, April 25, 2019, available at <https://www.fiercewireless.com/5g/verizon-expands-5g-to-20-more-cities-pre-order-open-for-samsung-s10-5g-phones>, last accessed May 9, 2019.

³³ Sprint News Release, "Sprint Reports Fiscal Year 2018 Fourth Quarter And Full Year Results" released May 7, 2019, <https://newsroom.sprint.com/sprint-reports-fiscal-year-2018-fourth-quarter-and-full-year-results.tekpdf>, P. 2, last accessed May 22, 2019.

³⁴ Sprint Corporation, Form 10-Q for the quarterly period ended December 31, 2018, released January 31, 2019, <https://investors.sprint.com/financials/sec-filings/sec-filings-details/default.aspx?FilingId=13182935>, accessed May 8, 2019.

³⁵ AT&T, Inc. Form 10-K, filed February 20, 2019, available at <https://otp.tools.investis.com/clients/us/atnt2/sec/sec-outline.aspx?FilingId=13241251&Cik=0000732717&PaperOnly=0&HasOriginal=1>, accessed May 8, 2019.

³⁶ T-Mobile US, Inc. Form 10-K, Filed February 7, 2019, available at <http://d18rn0p25nwr6d.cloudfront.net/CIK-0001283699/3bfba910-027f-4ec5-85a5-b8e91d073ba8.pdf>, accessed May 8, 2019.

³⁷ Ibid, p.6.

B. Voice over Internet Protocol

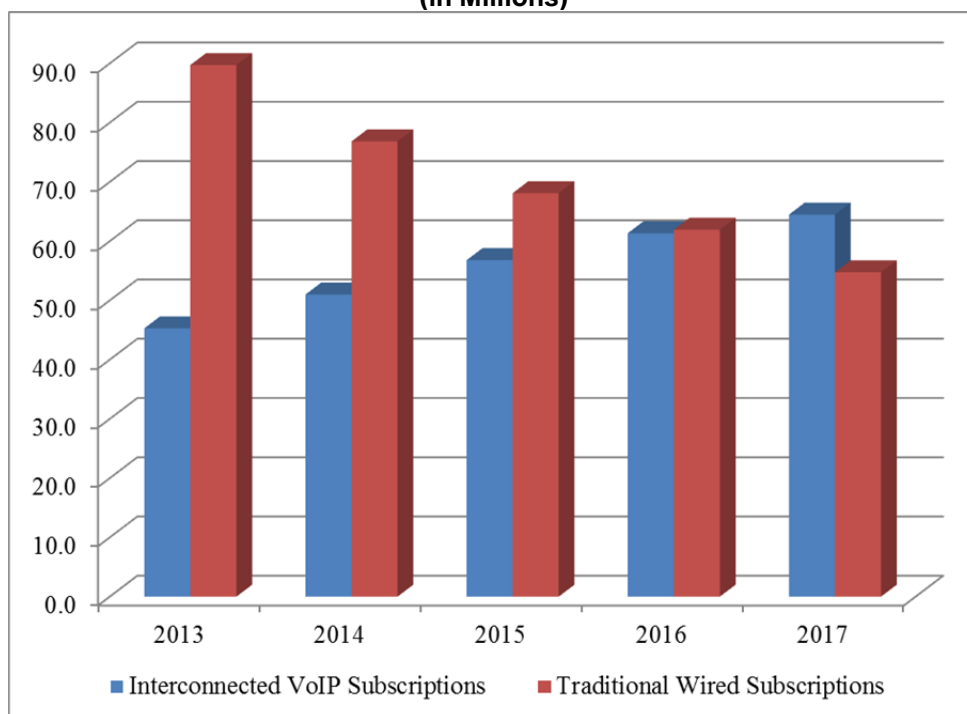
VoIP service is voice telephony utilizing digital computer protocols used by the Internet. VoIP requires a broadband Internet connection. It can be provided via separate interconnected digital channels and privately managed, or “over the top” of the existing Internet traffic.

Interconnected VoIP providers include cable companies, ILECs, and CLECs. Customers usually subscribe to broadband service and lease/purchase telephone equipment from the VoIP provider. Calls are sent through the Internet connection, but the transmission information “packets” are privately managed and prioritized to increase call reliability and quality.

Over-the-top companies include Magic Jack, Vonage and Skype. These types of providers require the customer to acquire a broadband Internet connection from any provider. Some providers use small converters that plug in-line between the consumer’s existing phone and a standard telephone jack (e.g. Magic Jack), while others may require a computer to complete the call (e.g. Skype). Calls are then made over the existing Internet connection.

The FCC’s latest data surveyed from 2013 through 2017, shown in figure 4-3, shows a continued growth rate for interconnected VoIP of eight percent per year, while subscribership to traditional wireline services decreased by 11 percent.³⁸

Figure 4-3
U.S. Retail Voice Telephone Subscriptions
(in Millions)



Source: FCC Voice Telephone Services Report June 2017

³⁸ FCC, Voice Telephone Services: Status as of June 30, 2017, released November 2018, <https://www.fcc.gov/voice-telephone-services-report>, accessed April 19, 2019.

As of June 30, 2017, the FCC reported that there were approximately 64.4 million interconnected VoIP subscribers in the U.S. This total includes 7.75 million over-the-top VoIP subscribers. Residential VoIP subscribers accounted for over 40.1 million of the total subscribers nationwide while business subscribers accounted for approximately 24.3 million.³⁹ Table 4-1 shows U.S. interconnected VoIP subscribership by customer type as of June 2017.⁴⁰ Data collected by the FPSC also shows nearly 2.9 million interconnected VoIP residential subscribers in Florida as of December 2017.⁴¹

Table 4-1
U.S. Interconnected VoIP Subscribership by Customer Type
(In Thousands)

| Total | Over-the-Top | All Other VoIP | Total |
|--------------------|---------------------|-----------------------|---------------|
| ILEC | 138 | 13,246 | 13,385 |
| Non-ILEC | 7,614 | 43,475 | 51,088 |
| Total | 7,753 | 56,721 | 64,473 |
| Residential | | | |
| ILEC | 45 | 9,961 | 10,006 |
| Non-ILEC | 2,193 | 27,925 | 30,119 |
| Total | 2,238 | 37,886 | 40,125 |
| Business | | | |
| ILEC | 93 | 3,285 | 3,378 |
| Non-ILEC | 5,422 | 15,550 | 20,969 |
| Total | 5,515 | 18,836 | 24,347 |

Source: FCC Voice Telephone Services Report June 2017⁴²

1. National Market Analysis

The FCC reported that in June 2017, there were “455 million retail voice telephone service connections” across the United States.⁴³ Of these retail connections, 119 million are provided over end-user switched access lines and interconnected VoIP subscriptions. Over half receive access via interconnected VoIP services.⁴⁴

a. Facilities-Based VoIP Providers

In the facilities-based residential interconnected VoIP market, non-ILEC companies accounted for nearly 30.1 million VoIP subscribers as of June 2017, compared to 10 million ILEC VoIP subscribers.⁴⁵ Comcast, the country’s largest cable provider, had an estimated 10.2 million VoIP

³⁹ FCC, Voice Telephone Services: Status as of June 30, 2017, released November 2018, <https://www.fcc.gov/voice-telephone-services-report>, Ibid, Figure 3, accessed April 19, 2019.

⁴⁰ Ibid, Figure 3.

⁴¹ Responses to the FPSC Local Competition Data Request 2018.

⁴² FCC, Voice Telephone Services: Status as of June 30, 2017, released November 2018, <https://www.fcc.gov/voice-telephone-services-report>, Figure 3, accessed April 19, 2019. Note: totals in the table may not sum due to rounding.

⁴³ Ibid, Page 2.

⁴⁴ Ibid, Table 1.

⁴⁵ Ibid.

subscribers at year-end 2018.⁴⁶ This represents a decrease of approximately 12 percent from year-end 2017. The second largest cable provider, Charter Communications, reported approximately 11.2 million VoIP subscribers at year-end 2018, a decrease of less than one percent from 2017.⁴⁷

AT&T reported approximately 4.6 million U-verse Consumer VoIP subscribers at year-end 2018.⁴⁸ This represents a 12.3 percent decrease from the previous year.

b. Over-the-Top VoIP Providers

Routing calls over a customer's existing Internet connection allows over-the-top providers to have a much lower cost of service than wireline and wireless competition. According to the FCC's latest report, there were 7.8 million over-the-top interconnected VoIP subscribers in the U.S. as of June 2017. This total included nearly 2.2 million residential subscribers and approximately 5.5 million business subscribers nationwide. The FCC's figures show a reduction of approximately 19 percent in residential subscribers, and nearly a 14.6 percent increase in business subscribers in 2017 over the same period in 2016.⁴⁹

2. Florida Market

The FPSC does not have jurisdiction over VoIP services. As a result, the ability to determine an accurate estimate of the total number of VoIP subscribers in Florida is limited. However, several ILECs and CLECs in Florida voluntarily responded to the Commission's data request and provided information on the number of residential VoIP subscribers. The Florida Internet and Television Association reported approximately two million residential VoIP subscribers for its five largest member providers, but it has not historically provided business line data. The FCC reported non-ILECs in Florida served approximately 1.3 million business subscribers by June 2016, and almost 1.5 million by June 2017.⁴⁹

As of December 2018, there are an estimated 2.7 million residential interconnected VoIP subscribers in Florida.⁵⁰ Figure 4-4 shows the number of residential interconnected VoIP subscribers in Florida by provider type. Data for 2018 indicates a modest decrease in the residential VoIP market.

⁴⁶ Comcast Corporation, Comcast 2018 Annual Report on Form 10-K, released January 01, 2019, <https://www.sec.gov/cgi-bin/browse-edgar?action=getcompany&CIK=0001166691&owner=exclude&count=40&hidefilings=0>, accessed April 22, 2019.

⁴⁷ "Charter Announces Fourth Quarter and Full Year 2017 Results," Charter Communications, Inc. News Release, released February 2, 2018, <https://newsroom.charter.com/press-releases/charter-announces-fourth-quarter-and-full-year-2017-results/>, accessed May 1, 2018.

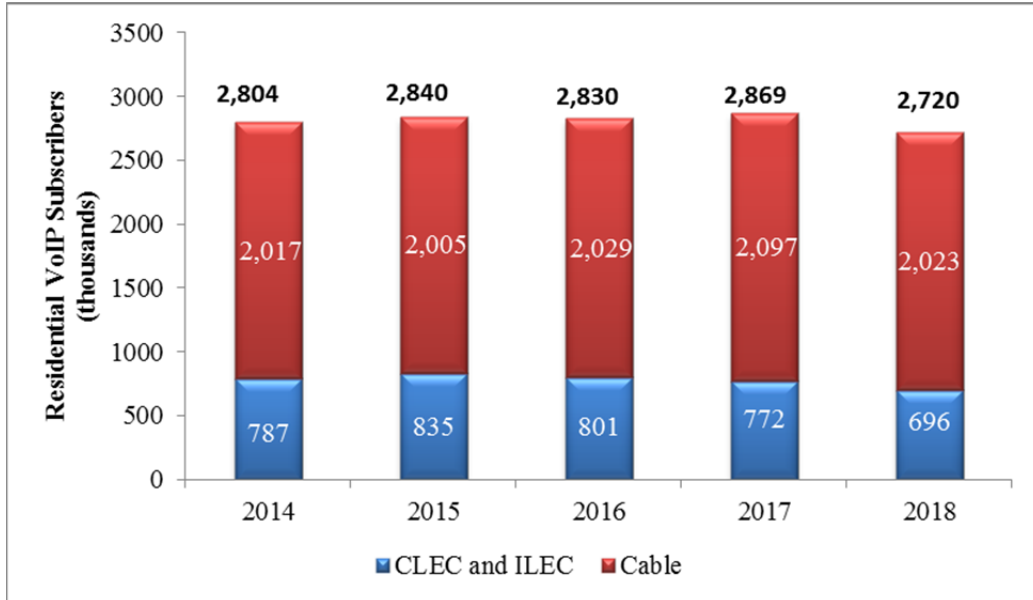
⁴⁸ AT&T Inc. 2018 Annual Report 10-K, <https://otp.tools.investis.com/clients/us/atnt/SEC/sec-filing.aspx?comingfrom=secshow>, accessed April 22, 2019.

FCC, Voice Telephone Services: Status as of December 31, 2016, released February 2018, <https://www.fcc.gov/voice-telephone-services-report>, accessed May 2, 2019.

⁴⁹ FCC Voice Telephone Services Report, State-Level Subscriptions, Supplemental Table 1, Florida, released February 2018, <https://www.fcc.gov/voice-telephone-services-report>, accessed May 1, 2019.

⁵⁰ Responses to FPSC data request 2019.

**Figure 4-4
Florida Residential Interconnected VoIP Subscribers**

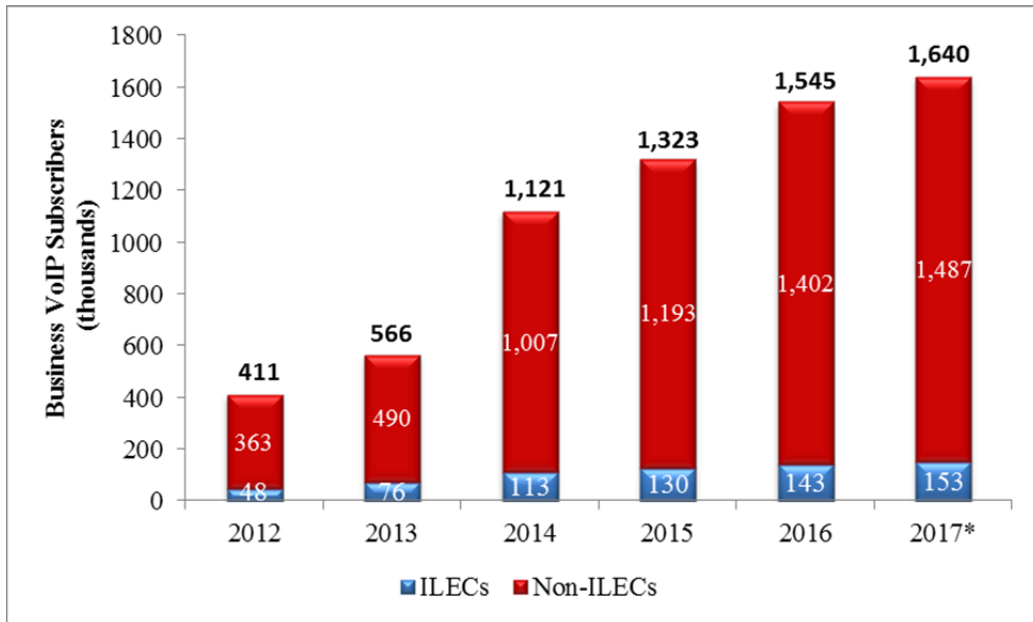


Source: Responses to FPSC data requests (2015-2019)

While the Commission receives business VoIP data from telecommunications carriers, corresponding data was not made available from most cable companies as requested. Data is available from the FCC that provides VoIP business lines through June 2017.⁵¹ Figure 4-5 identifies the number of interconnected VoIP business subscribers by ILEC and non-ILEC carriers. Non-ILEC carriers include cable companies. From June 2016 to June 2017, non-ILECs experienced a nearly 14.5 percent increase in interconnected business VoIP subscribers. By comparison, ILECs experienced an increase of more than 22.4 percent in interconnected business VoIP subscribers for the same time period. Based on the general trend of such interconnected business VoIP lines and the reduction in traditional switched access lines, it is likely that there will be further growth in this market segment.

⁵¹ Ibid.

**Figure 4-5
Florida Business Interconnected VoIP Subscribers**



Source: FCC, Voice Telephone Services Report (*through June 30, previous years through December 31)

C. Broadband

The latest report published by the FCC (2017) indicated that 82 percent of households nationwide had fixed broadband connections with download speeds of at least 200 kilobits per second (kbps), 68 percent had a speed of at least 10 megabits per second (Mbps), 54 percent had at least 25 Mbps, and 18 percent had at least 100 Mbps.⁵² These levels were slightly higher than the previous year.

Florida Broadband Trends

The FCC reported that 93 percent of Florida households had fixed broadband connections of at least 200 kbps and 20 percent had connection speeds of at least 100 Mbps by June 2017. Cable modem services accounted for roughly two-thirds of non-mobile broadband connections in Florida with download speeds greater than 200 kbps. Mobile broadband connections accounted for almost 72 percent of all broadband connections in Florida with download speeds greater than 200 kbps.⁵³

According to the Pew Research Center, between 2015 and 2016 the number of Americans who had a high-speed Internet connection in their homes increased from 66 percent to 73 percent.⁵⁴ However, by the end of December 2017, the number of Americans reporting broadband in the

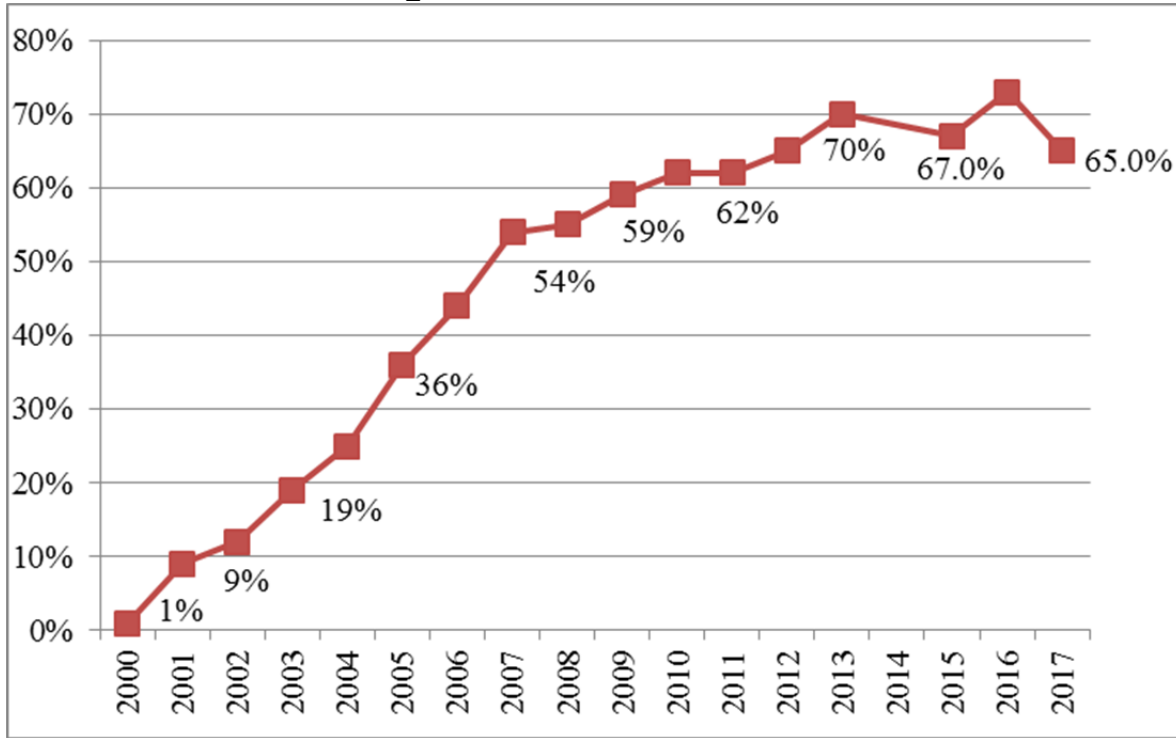
⁵² FCC, Internet Access Services: Status as of June 30, 2017, released November 2018, <https://www.fcc.gov/internet-access-services-reports>, Figure 32, accessed April 16, 2019.

⁵³ Ibid, Figure 32.

⁵⁴ Pew Research Center, Internet/Broadband Fact Sheet, February 5, 2018, <http://www.pewinternet.org/fact-sheet/internet-broadband/>, accessed May 3, 2019.

home dropped to 65 percent.⁵⁵ This represents an eight percent reduction from 2016. This shift may be the result of increased smartphone and tablet use at home.⁵⁶ Figure 4-6 shows the percentage of U.S. households with in-home broadband connections between 2000 and 2017.

Figure 4-6
Percentage of Broadband U.S. Households



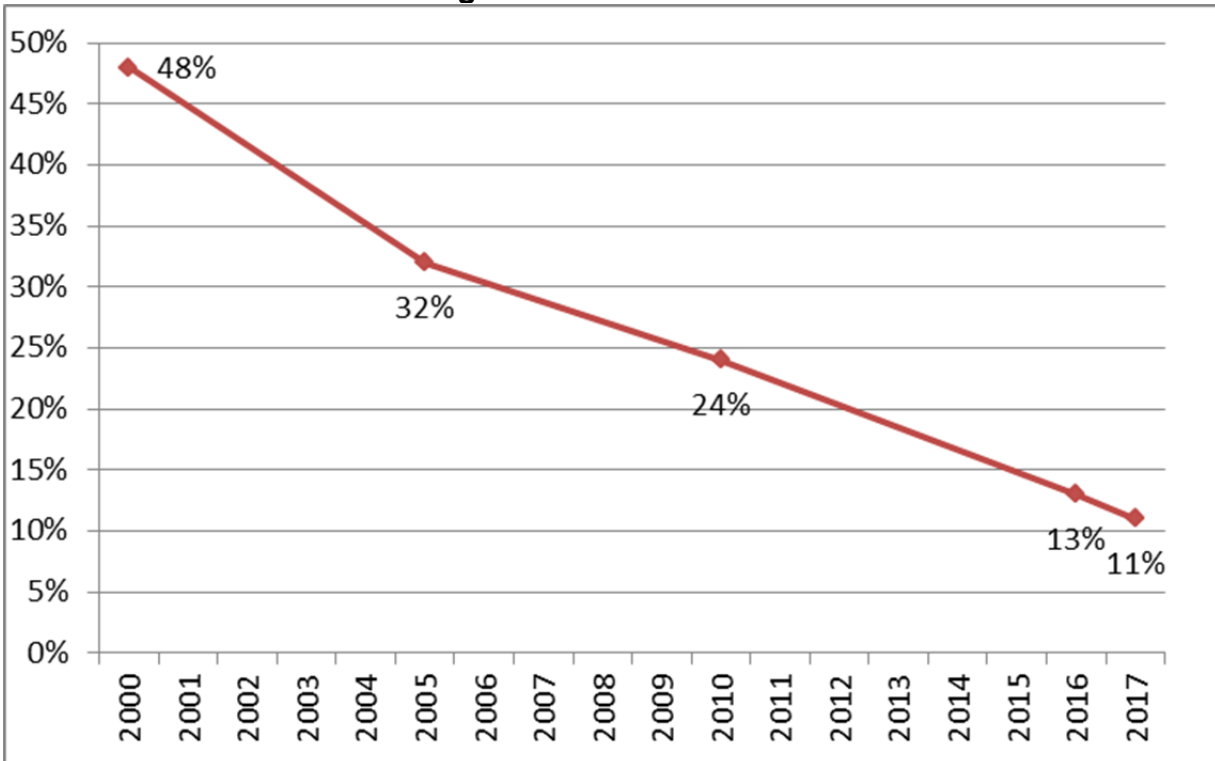
Source: Pew Research Center

⁵⁵“One-in-five Americans own a smartphone, but do not have traditional broadband service,” Pew Research Center Internet & Technology, April 27, 2018, http://www.pewinternet.org/2018/04/30/declining-majority-of-online-adults-say-the-internet-has-been-good-for-society/pi_2018-04-30_internet-good-bad_0-02/, accessed June 11, 2019.

⁵⁶ Demographics of Mobile Device Ownership and Adoption in the United States, Pew Research Center, February 5, 2018, <http://www.pewinternet.org/fact-sheet/mobile/>, accessed April 3, 2019.

The Pew survey showed that nine out of ten people younger than 50 years old go online through a smart phone that they own.⁵⁷ However, Pew concluded that, while the number continues to decline, there are still those who do not use the Internet at all. Figure 4-7 reflects Pew’s survey results regarding use of the Internet from 2000-2017.

Figure 4-7
Percentage of U.S. Non-Internet Users



Source: Pew Research Center

⁵⁷ Pew Research Center, “Internet, social media use and device ownership in U.S. have plateaued after years of growth,” September 28, 2018, <https://www.pewresearch.org/fact-tank/2018/09/28/internet-social-media-use-and-device-ownership-in-u-s-have-plateaued-after-years-of-growth/>, accessed June 6, 2019.

Chapter V. Competitive Market Analysis & Statutory Issues

This chapter discusses the four issues required by Section 364.386, F.S. It relies primarily on information reported in the previous chapters of this report.

A. Statutory Issue - Competitive Providers

The ability of competitive providers to make functionally equivalent local exchange services available to both residential and business customers at competitive rates, terms, and conditions.

In 2018, the wireline residential and business markets in Florida declined for both ILECs and CLECs. The total percentage decline was 23.2 percent. CLEC lines decreased 31.9 percent between December 2017 and December 2018, while ILEC lines decreased by 20.5 percent during the same period. The higher rate of line loss resulted in a decrease in the total CLEC wireline market share in Florida from 24.1 percent in 2017 to 21.4 percent in 2018.

Residential VoIP subscribership accounted for 2.7 million connections by December 2018, representing a five percent decrease in lines.⁵⁸ Comparable 2018 end of year data was not available for wireless and business VoIP segments of the market. However, recently released data for 2017 from the FCC indicated that the number of business VoIP lines grew 15.3 percent from June 2016 through June 2017.⁵⁹

Updated wireless subscriber data for Florida in 2018 will not become available until early in 2020. However, data from previous years shows Florida continues to follow national trends and continues to increase.⁶⁰

Figure 5-1 uses the FCC's data regarding the number of voice subscribers by technology for 2017 to illustrate the competitive nature of the industry nationwide. While the data does not reflect the market for the reporting period of this report, it does provide insight regarding how carriers are meeting the market demand for service.

⁵⁸ Responses to FPSC data requests 2019.

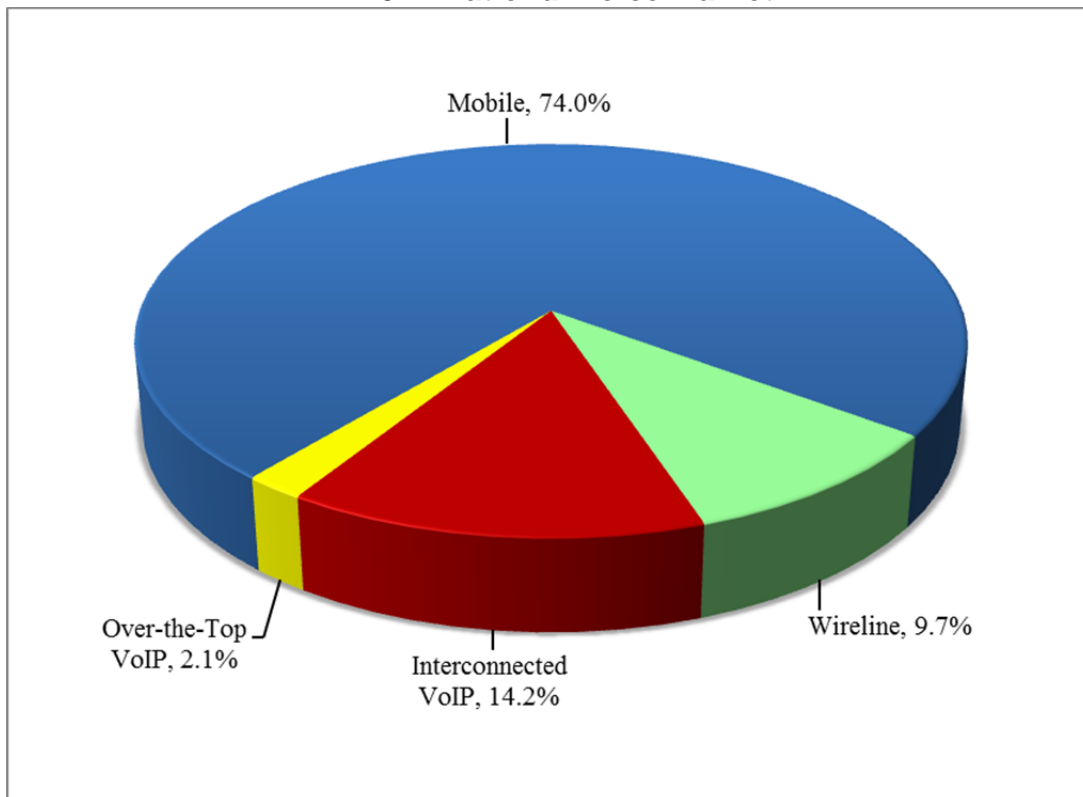
⁵⁹ FCC, "Voice Telephone Services as of June 30, 2017," State-Level Subscriptions spreadsheets, released November 2018, <https://www.fcc.gov/voice-telephone-services-report>, accessed May 1, 2019.

⁶⁰ National Center for Health Statistics, Centers for Disease Control and Prevention, "Wireless Substitution State-Level Estimates from the National Health Interview Survey," released March 2019, http://www.cdc.gov/nchs/nhis/new_nhis.htm, accessed May 8, 2019.

This data suggests that CLECs, VoIP, and wireless carriers are able to provide functionally equivalent services to residential and business customers at rates, terms and conditions acceptable to consumers. The number of CLECs offering a variety of services also indicates the availability of functionally equivalent services at comparable terms. Other services offered by CLECs that reported providing local service include:

- Bundled services (41 CLECs)
- VoIP (69 CLECs)
- Broadband Internet access (55 CLECs)
- Video service (10 CLECs)

**Figure 5-1
2017 National Voice Market**



Source: FCC, Voice Telephone Services Report, Nationwide and State-Level Data as of June 2017

In response to FPSC data request questions, the majority of CLECs reported no barriers to competition or elected not to respond. The companies that did report competitive concerns mentioned issues with ILEC pricing practices, responsiveness to trouble reports, and the lack of a formal plan for IP transition.⁶¹ We note that the CLECs have not filed any petitions with the Commission to address any of these issues. Some of these issues may be addressed by the FCC.

Conclusion: Subscriptions to traditional wireline, VoIP, and wireless services decreased in 2018. Traditional wireline and VoIP services decreased faster than wireless services reflecting the national trend of consumers opting to forgo maintaining wirelines of any kind in favor of maintaining only wireless devices, as well as growing saturation in the wireless market and number portability possibly causing inaccuracies in subscription number counts.⁶² Given that telephone service is a necessity, the substantial difference in rates of decreases in reported subscriptions between traditional wireline and VoIP services and wireless services, reflects the opportunities and choices of consumers to seek out services from providers other than traditional ILECs. Many CLECs reported offering a variety of services and packages comparable to those offered by ILECs. All of these factors contribute to the conclusion that competitive providers are able to offer functionally equivalent services to both business and residential customers.

B. Statutory Issue – Consumers

The ability of consumers to obtain functionally equivalent services at comparable rates, terms, and conditions.

Functionally equivalent services are available to consumers via wireline telephony, wireless telephony, or VoIP. The primary focus of this report is the provision of wireline telecommunications by ILECs and CLECs, which submit responses to the FPSC’s annual data request.

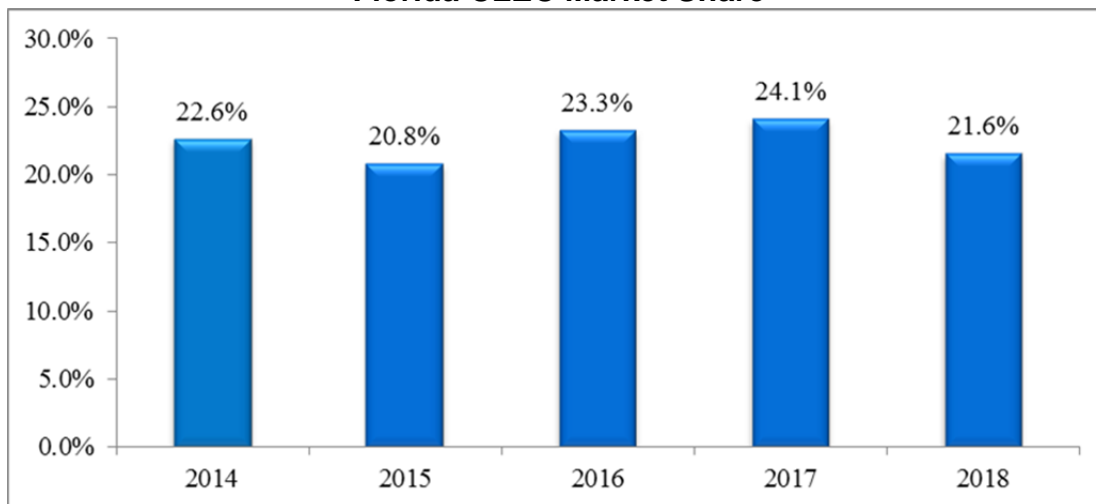
As of December 31, 2018, 111 CLECs provided data indicating that they provide local voice service in Florida. This is an increase from the 2017 response, when 104 CLECs responded.

Competitive carriers can offer service through resale of ILEC or CLEC wholesale services, by using their own facilities, by leasing portions of their networks from an ILEC, or a combination of any of these methods. Figure 5-2 provides a historical view of CLEC market share in Florida for the traditional wireline access line market. As of December 2018, 21.6 percent of total traditional wireline access lines in Florida are provided by companies other than ILECs.

⁶¹ Responses to FPSC data requests 2019.

⁶² National Center for Health Statistics, Centers for Disease Control and Prevention, “Wireless Substitution State-Level Estimates from the National Health Interview Survey,” released March 2019, http://www.cdc.gov/nchs/nhis/new_nhis.htm, accessed May 8, 2019.

**Figure 5-2
Florida CLEC Market Share**



Source: Responses to FPSC data requests (2015-2019)

Traditional ILEC business lines decreased 18 percent in 2018, while business lines from competitive carriers fell 30.8 percent. Business lines provided through VoIP are not reported to the FPSC by providers, making accurate estimates of statewide business VoIP lines impossible. ILEC and non-ILEC provided VoIP business lines are reported through FCC-issued monitoring reports. However, the data reported through the FCC is usually one to two years old, limiting its usefulness.

According to FCC data, ILEC VoIP business lines increased by 10.9 percent, while non-ILEC VoIP business lines grew nearly 6.3 percent from June 2016 to June 2017.⁶³ This suggests that business customers have the ability to find reasonable pricing packages with CLECs and are taking advantage of these options. These options include CLEC cable companies and, in some cases, wireless providers.

ILEC residential lines decreased 23.3 percent in Florida in 2018. CLEC residential lines decreased 55.7 percent, but as those lines only comprise less than one percent of the residential market, the impact was insignificant. Nationally, wireless-only households continued to grow, reaching 54.9 percent in the first half of 2018.⁶⁴

As stated in Chapter IV of this report, there are nearly 2.7 million interconnected residential VoIP subscribers in Florida.⁶⁵ These and other factors demonstrate that customers are able to find comparable services at reasonable prices through wireless, CLEC, and VoIP providers.

⁶³ FCC, Voice Telephone Services: Status as of December 31, 2016, released February 2018, <https://www.fcc.gov/voice-telephone-services-report>, accessed May 2, 2018.

⁶⁴ Blumberg SJ, Luke JV. Wireless substitution: Early release of estimates from the National Health Interview Survey, January – June 2018. National Center for Health Statistics, released December 2018, <https://www.cdc.gov/nchs/nhis/releases.htm>, accessed April 29, 2019.

⁶⁵ Responses to FPSC data requests 2019.

Conclusion: Wireline access lines for both residential and business customers have maintained a steady decline over the past several years (see Figure 3-1). This contrasts with the continued growth in wireless-only households. Business wireline declines have been partially offset by significant growth in business VoIP lines. Carriers are managing the shifts in market conditions by bundling services and providing a variety of pricing plans in an attempt to meet consumer demand and expectations. These factors indicate that consumers are able to acquire functionally equivalent services at comparable rates, terms, and conditions.

C. Statutory Issue – Affordability & Service Quality

The overall impact of competition on the maintenance of reasonably affordable and reliable high-quality telecommunications services.

According to the FCC, the average telephone service subscription rate in Florida was 92.7 percent in 2018. This is slightly lower than the national telephone service subscription rate of 96.1 percent.⁶⁶ The rate in Florida has consistently been slightly less than the national rate. A previous Commission report on this issue identified six possible factors related to telephone penetration rate: immigration, age, income/poverty, Lifeline and Link-up, race/ethnicity, and education.⁶⁷

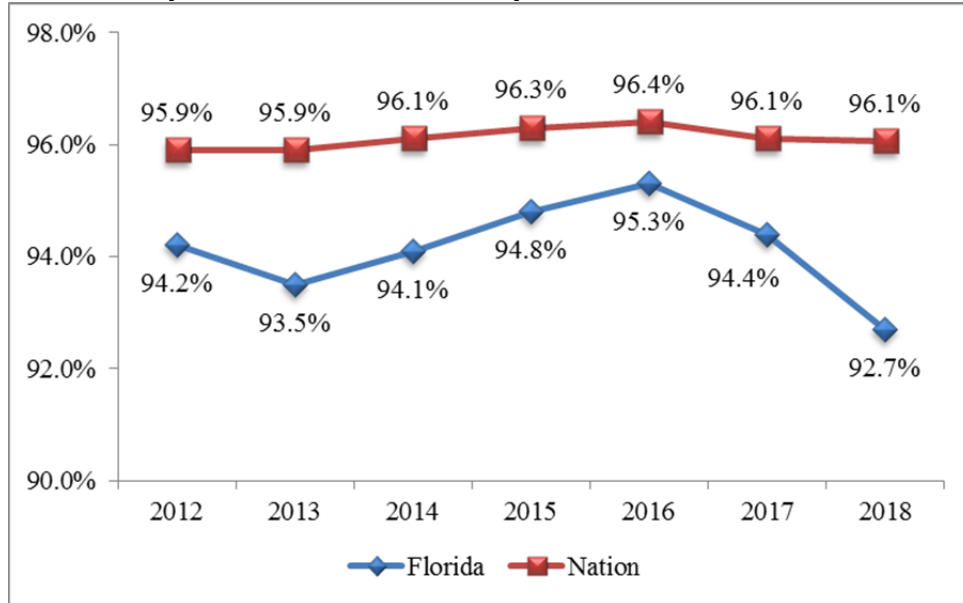
Telephone service subscribership rates tend to be higher for older consumers, higher income consumers, higher Lifeline subscription rate areas, and more educated populations. Rates tend to be lower for immigrants, areas with higher poverty rates, and more diverse populations. When compared to the U.S., Florida has a greater percentage of immigrants and seniors and a more diverse population. Florida also has lower average income and education levels. Florida usually averages less Lifeline support per capita than the U.S. average.

Some of these factors have opposing effects, causing the magnitude of the difference between the national and Florida telephone service subscription rates to fluctuate. Taken together, the net result of these factors is that Florida telephone service subscription rates are consistently near but slightly below the national average.

⁶⁶ FCC, Staff Interview, April 15, 2019.

⁶⁷ FPSC, “Telephone Subscribership Rates in Florida,” released 2014, <http://www.psc.state.fl.us/Files/PDF/Publications/Reports/Telecommunication/TelephoneSubscribershipReport.pdf>, accessed June 4, 2019.

**Figure 5-3
Telephone Service Subscription: Florida vs. Nation**



Source: FCC Staff Interview

Conclusion: Based on the continued growth of interconnected VoIP and wireless-only households and the ongoing decline of traditional wireline access lines, the network reliability of non-ILEC providers appears to be sufficient. The telephone service subscription rate of 92.7 percent supports the conclusion that the vast majority of Florida residents are able to afford telephone service. The number and variety of competitive choices among all types of service providers suggest that competition is having a positive impact on the telecommunications market in Florida.

D. Statutory Issue – Carrier Disputes

A listing and short description of any carrier disputes filed under Section 364.16, F.S.

Conclusion: There were no carrier disputes filed with the FPSC under Section 364.16, F.S., in 2018.

Chapter VI. State Activities

This chapter provides a summary of state activities affecting local telecommunications competition in 2018. The state activities discussed in this chapter are important in helping to gauge how well the market is functioning for Florida businesses and consumers.

A. Intercarrier Matters

1. Wholesale Performance Measurement Plans

Wholesale performance measurement plans provide a standard against which the Commission can monitor performance over time to detect and correct any degradation in the quality of service ILECs provide to CLECs. The Commission adopted performance measurements for AT&T in August 2001 (revised in 2010), for CenturyLink in January 2003 (revised in 2013 and 2016), and for Verizon in June 2003 (revised in 2007). Trending analysis is applied to monthly performance measurement data provided by each ILEC.⁶⁸

AT&T is the only ILEC that is required to make payments to CLECs when certain performance measures do not comply with established standards and benchmarks. AT&T's approved Performance Assessment Plan consists of 47 measurements; financial remedies are applied to 24 of these measures. In 2018, AT&T paid \$555,029 in remedies to CLECs, which is an increase of 17.4 percent from 2017. The greatest cause of this increase was an incident with a trunk line in February 2018, that led to a number of blocked and redialed calls resulting in a remedy of \$458,286.

On October 15, 2015, CenturyLink filed proposed revisions to its Performance Measurement Plan as a result of a negotiated settlement with the Nevada Public Utilities Commission. The revisions included revising reporting requirements from monthly to quarterly, eliminating several performance measures from the plan, and amending two measures. The proposal was approved for Florida by the Commission on February 15, 2016.⁶⁹ CenturyLink reported no non-compliances in 2018, equaling 2017's results.

Frontier Communications completed its purchase of Verizon Florida's wireline operations in Florida in April 2016. In its role as a major ILEC, Frontier is responsible for a Performance Measurement Plan, which includes 29 measures. In 2018, Frontier maintained an average monthly compliance rate of 78.6 percent, ranging from 73.5 percent to 81.8 percent. This result improved upon 2017's average monthly compliance rate of 76.5 percent.

2. Other Matters

The Commission processed a number of other telecommunications-related items in 2018. The Commission processed 46 service schedule and tariff filings, 60 interconnection agreements and

⁶⁸ FPSC Dockets: No. 20000121A-TP (AT&T), No. 20000121B-TP (CenturyLink), and No. 20000121C-TP (Frontier FL).

⁶⁹ Docket No. 000121B-TP, Investigation into the establishment of operations support systems permanent performance measures for incumbent local exchange telecommunications companies. (CenturyLink Florida Track), Order No. PSC-16-0072-PAA-TP issued February 15, 2016, <http://www.floridapsc.com/library/filings/2016/00858-2016/00858-2016.pdf>, accessed May 9, 2019.

amendments, 11 carrier certifications, five certificate cancellations, and over 150 general inquiries/informal complaints.

B. Lifeline

The FPSC allows consumers participating in the Supplemental Nutrition Assistance Program (SNAP) or Medicaid to apply to the Lifeline program online. When an application is completed, a Commission computer automatically makes a query to a Florida Department of Children and Families (DCF) web services interface to confirm current participation in SNAP or Medicaid. The real-time response verifies participation in at least one of the programs, but does not identify the program. A positive response will generate an automatic email to the appropriate Lifeline provider advising that an approved Lifeline application is available for retrieval on the FPSC web site. A negative response will cause a letter to be sent to the applicant stating his/her participation in SNAP or Medicaid could not be confirmed and offering the applicant assistance with any questions. Based upon June 2018 SNAP participants, Lifeline eligible households decreased by 2 percent while the participation rate increased by 1.4 percent from the prior year.⁷⁰ Table 6-1 shows the Lifeline eligibility and participation rates in Florida for the last four years.⁷¹

**Table 6-1
Florida Lifeline Eligibility and Participation Rate**

| Year | Lifeline Enrollment | Eligible Households | Participation Rate |
|-------------|----------------------------|----------------------------|---------------------------|
| Jun-15 | 833,426 | 2,011,166 | 41.4 % |
| Jun-16 | 852,255 | 1,712,005 | 49.8% |
| Jun-17 | 685,864 | 1,662,374 | 41.3% |
| Jun-18 | 694,647 | 1,628,111 | 42.7% |

Source: U.S. Department of Agriculture

If a program other than Medicaid or SNAP is used for certification, the customer must provide documentation of participation from the administering agency, which could be the Social Security Administration (Supplemental Security Income), Federal Public Housing Assistance (FPHA), Veterans Pension benefit, or the Bureau of Indian Affairs. If a Lifeline applicant chooses to apply for Lifeline directly with an eligible telecommunications carrier (ETC), the carrier can access the DCF web services to confirm program participation for Medicaid and SNAP. In Florida, certification and verification can be accomplished using this process if the applicant or existing Lifeline customer participates in the Medicaid or SNAP programs administered by the DCF.

⁷⁰ USDA, Supplemental Nutrition Assistance Program: Households Participating, Florida SNAP households for June 2018: 1,628,111, <https://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap>, accessed September 20, 2018.

⁷¹ FPSC, “2018 Florida Lifeline Report,” released December 2018, <http://www.floridapsc.com/Publications/Reports#>, Figure 3, accessed May 16, 2019.

On April 27, 2016, the FCC released its Lifeline Modernization Order.⁷² In this Order, the FCC established a National Lifeline Eligibility Verifier (National Verifier) to transition various carrier and state verification systems to a single system. The FCC envisions that the National Verifier will include electronic and manual methods to determine eligibility and will include a Lifeline Eligibility Database. In addition to determining eligibility for Lifeline, the National Verifier will allow access by authorized users, provide support payments to providers and conduct recertification of subscribers.

In 2018, the Universal Service Administrative Company (USAC) launched the National Verifier in eight states. As of May 2019, two more launches have been conducted and there are now 22 states and four U.S. territories using the National Verifier.⁷³ USAC is currently planning to have the remaining 28 states operating under the National Verifier by the end of 2019, by encompassing the remaining states into quarterly launches throughout the year.

Once the National Verifier has completed its implementation within a state or territory, the responsibility to verify eligibility will transition from ETCs or state administrators to the National Verifier. USAC continues to inform stakeholders and regulators of its deployment schedule for the states next in line for National Verifier deployment.

C. Telephone Relay Service

It is estimated that approximately three million persons living in Florida have been diagnosed as having hearing loss.⁷⁴ Relay service in Florida provides telecommunication services for deaf, hard of hearing, deaf-blind, or speech impaired persons, functionally equivalent to the service provided to hearing persons.

Chapter 427, F.S., established the Telecommunications Access System Act of 1991 (TASA). TASA provides funding for the distribution of specialized telecommunications devices and intrastate relay service through the imposition of a surcharge of up to \$0.25 per wireline access line per month, for up to 25 access lines per account. The surcharge billed per month per wireline access line is \$0.10 for the 2018/2019 budget year.

Pursuant to TASA, the FPSC is responsible for establishing, implementing, promoting, and overseeing the administration of a statewide telecommunications relay service. In accordance with TASA, the FPSC directed the local exchange companies to form a not-for-profit corporation, known as Florida Telecommunications Relay, Inc. (FTRI) to directly administer basic relay service in Florida.

⁷² FCC 16-38, WC Docket No. 11-42, Lifeline and Link Up Reform and Modernization, Third Report and Order, Further Report and Order, and Order on Reconsideration, released April 27, 2016, https://apps.fcc.gov/edocs_public/attachmatch/FCC-16-38A1.pdf, accessed May 16, 2019.

⁷³ USAC, "Lifeline National Verifier: National Verifier Launches," <https://www.usac.org/li/tools/national-verifier/launches/default.aspx>, accessed May 17, 2019.

⁷⁴ 2019 Florida Coordinating Council for the Deaf and Hard of Hearing Biennial Report to Governor Rick Scott, the Florida Legislature & the Supreme Court and "Demographics and Statistics," Florida Telecommunications Relay, Inc., <http://www.floridahealth.gov/provider-and-partner-resources/fccdhh/documents/2019-fccdhh-biennial-report.pdf>, accessed May 21, 2019.

Minutes of use for traditional relay service have declined in recent years as evolving technology has caused many users to migrate to more advanced services. The current provider projects that traditional minutes will continue to decline.

Basic relay service is provisioned in Florida under contract by a single service provider. Through a competitive bid evaluation process, the FPSC awarded the current relay provider contract to Sprint, effective March 1, 2018, for a period of three years. The contract contains options to extend the contract for four additional one-year periods, and requires mutual consent by both parties to extend the contract.

On June 11, 2019, the Commission approved FTRI's 2019/2020 budget. The TASA surcharge will remain at \$0.10, beginning September 1, 2019.

Chapter VII. Federal Activities

This chapter details some of the major federal activities pertaining to telecommunications. Each of these issues has the potential to have significant influence on the telecommunications industry.

A. USTelecom Forbearance Petition

On May 4, 2018, the United States Telecom Association (USTelecom) filed a petition with the FCC seeking forbearance from several of the ILEC regulatory obligations under Sections 251, 252, 271, and 272 of the Telecommunications Act, such as requirements to provide wholesale access to unbundled network elements (UNEs) and resale. USTelecom also requested that states not be allowed to issue similar unbundling and resale rules if forbearance is granted.^{75, 76, 77}

The FCC stated in an order released on February 14, 2019, that pursuant to forbearance rules of the Telecommunications Act, barring any contravening ruling, the USTelecom Forbearance petition shall be deemed granted on August 2, 2019.⁷⁸ If this petition is granted, some CLECs would no longer be able to compete because they would no longer be guaranteed rights to resale or interconnection. The CLECs that could continue to compete would be those affiliated with ILECs and the larger CLECs, which have invested in their own networks. In Florida, the impact on residents would be minimal given that CLECs comprise less than one percent of the market. The business market would also be somewhat insulated given that it is mostly serviced by large CLECs, ILEC-affiliated CLECs, and ILECs.

B. FCC Hurricane Response

On October 10, 2018, Hurricane Michael, a Category 5 hurricane, made landfall in the Florida panhandle. Along with other infrastructure, the telecommunications network sustained major damage. According to the FCC, at the peak level of damage in the affected Florida counties, nearly 29 percent of cell sites were rendered nonfunctional, while more than 250,000 cable and wireline subscribers experienced service outages.⁷⁹

In preparation and response, the FCC took several steps to promote public safety and connectivity. These steps included updating status and restoration efforts with status reports, granting a waiver of its E-Rate program invoicing rules to assist affected schools and libraries, and granting a petition filed by the FPSC requesting a temporary four-month waiver of the Lifeline program's non-usage and recertification rules for subscribers in 12 affected Florida counties.^{80,81} Additionally, on November 1, 2018, the FCC announced the formation of the

⁷⁵ USTelecom, "Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160(c) to Accelerate Investment in Broadband and Next-Generation Networks," filed May 4, 2018, <https://www.fcc.gov/ecfs/filing/1050419048916>, accessed May 9, 2019.

⁷⁶ FCC, Communications Act of 1934, <https://transition.fcc.gov/Reports/1934new.pdf>, accessed May 15, 2018.

⁷⁷ [USTelecom, Petition for Forbearance](#). Section B, pp. 30-31.

⁷⁸ FCC, "Order Extending Deadline of USTelecom Forbearance Petition," released February 14, 2019, <https://www.fcc.gov/document/order-extending-deadline-ustelecom-forbearance-petition>, accessed February 14, 2019.

⁷⁹ FCC, "Communications Status Report for October 11, 2018" and "Communications Status Report for October 12, 2018", released October 11-12, 2018, <https://www.fcc.gov/michael>, accessed April 9, 2019.

⁸⁰ FCC, "WCB Grants a Waiver to Schools Affected by Hurricane Michael", released October 26, 2018, <https://www.fcc.gov/document/wcb-grants-waiver-schools-affected-hurricane-michael>, accessed April 9, 2019.

Disaster Response Working Group of the Broadband Deployment Advisory Committee (BDAC), which will develop best practices for responding before, during and after a disaster.⁸² Also, on November 16, 2018, the FCC solicited comments on service provider preparation and response, prospective improvements to FCC response, and on communications service user experience.⁸³ In addition to service restoration efforts, providers responded by offering a variety of credits, including unlimited talk/text, late fee waivers, free service, etc. for up to three months after the hurricane. Verizon also announced that it was adding Panama City to cities included in its initial rollout of 5G advanced services, starting in 2019.⁸⁴

On May 9, 2019, the FCC issued a report on its investigation into communications providers' preparation for and response to Hurricane Michael.⁸⁵ The report found that three key factors were the predominant causes of the slow restoration of wireless service following the 2018 storm: insufficient backhaul resiliency, inadequate reciprocal roaming arrangements, and lack of coordination between wireless service providers, power crews, and municipalities.

To improve recovery efforts for future storms, the report recommends that wireless providers enter into roaming agreements as part of their pre-storm preparation processes and that communications providers and power companies enter into coordination agreements regarding mutual preparation and restoration efforts that can be activated when a storm strikes. The report also recommends that wireless providers use diverse backhaul options, such as microwave and satellite links, participate in training activities to improve coordination of restoration efforts, and ensure familiarity with applicable best practices, especially relating to cooperation and coordination with local utilities.

⁸¹ FCC, "WCB Waives Rules for Lifeline Consumers Affected by Hurricane Michael", released November 16, 2018, <https://www.fcc.gov/document/wcb-waives-rules-lifeline-consumers-affected-hurricane-michael>, accessed April 9, 2019.

⁸² FCC, "Chairman Pai Announces Members of BDAC Disaster Response Working Group", released November 1, 2018, <https://www.fcc.gov/document/chairman-pai-announces-members-bdac-disaster-response-working-group-0>, accessed April 9, 2019.

⁸³ FCC, "Public Safety And Homeland Security Bureau Seeks Comment On Hurricane Michael Preparation And Response," released November 16, 2018, <https://ecfsapi.fcc.gov/file/111657178477/DA-18-1176A1.pdf>, accessed January 15, 2019.

⁸⁴ "Verizon's new network, including 5G technology, will help drive the Florida Panhandle's future, includes \$25 Million investment," NASDAQ, Verizon Press Release, released October 24, 2018, <https://www.nasdaq.com/press-release/verizons-new-network-including-5g-technology-will-help-drive-the-florida-panhandles-future-include-20181024-01436>, accessed October 29, 2018.

⁸⁵ FCC, "FCC Releases Report on Communication Impacts of Hurricane Michael," released May 9, 2019, <https://www.fcc.gov/document/fcc-releases-report-communication-impacts-hurricane-michael-0>, accessed May 10, 2019.

C. Broadband Deployment

FCC Chairman Ajit Pai has stated that his number one priority is expanding broadband access.⁸⁶ The FCC and the federal government have been using several strategies to pursue this goal. One method that the FCC is using to facilitate the process of broadband deployment is the creation of the Broadband Deployment Advisory Committee (BDAC), a federal advisory committee that is intended to provide an effective means for stakeholders to exchange ideas and develop recommendations and advice on how to accelerate the deployment of high-speed Internet access.⁸⁷

Another method that the FCC uses to gauge its progress is the regular issuance of broadband deployment reports. On February 19, 2019, the FCC released the highlights of a draft of its 2019 Broadband Deployment Report, which show significant progress in broadband deployment, especially in rural America. These findings helped lead the draft report to conclude that the FCC is now encouraging broadband deployment on a reasonable and timely basis.⁸⁸ On April 12, 2019, FCC Chairman Pai announced the creation of the Rural Digital Opportunity Fund, which will offer \$20.4 billion in support of rural broadband networks over ten years.⁸⁹

The FCC is not the only agency that has been working to improve broadband deployment. The American Broadband Initiative Milestones Report, released on February 13, 2019, details strategies from over 20 Federal agencies for increasing broadband access and encouraging private-sector broadband investment.⁹⁰

D. Open Internet/Net Neutrality

In 2018, the FCC reversed its policy outlined in previous reports and implemented a de-regulatory framework for net neutrality. As a result of this reversal, 34 states and the District of Columbia proposed net neutrality legislation, and five passed net neutrality laws or resolutions.⁹¹

⁸⁶ FCC, “Bridging The Digital Divide For All Americans,” <https://www.fcc.gov/about-fcc/fcc-initiatives/bridging-digital-divide-all-americans>, accessed April 27, 2018.

⁸⁷ FCC, “Broadband Deployment Advisory Committee,” <https://www.fcc.gov/broadband-deployment-advisory-committee>, accessed April 10, 2019.

⁸⁸ FCC, “Draft FCC Broadband Report: Digital Divide Is Narrowing Substantially,” released February 19, 2019, <https://www.fcc.gov/document/draft-fcc-broadband-report-digital-divide-narrowing-substantially>, accessed April 10, 2019.

⁸⁹ Telecompetitor, “Pai Proposes FCC Rural Digital Opportunity Fund: \$20.4 Billion Over 10 Years for Price Cap Territories,” published April 12, 2019, <https://www.telecompetitor.com/pai-proposes-fcc-rural-digital-opportunity-fund-20-4-billion-over-10-years-for-price-cap-territories/>, accessed April 19, 2019.

⁹⁰ Congress, bill search for “broadband,” <https://www.congress.gov/search?searchResultViewType=expanded&q=%7B%22source%22%3A%22legislation%22%2C%22search%22%3A%22broadband%22%2C%22congress%22%3A%22116%22%2C%22type%22%3A%22bills%22%7D>, accessed April 11, 2019.

⁹¹ NCSL, “Net Neutrality Legislation in States,” published January 23, 2019, <http://www.ncsl.org/research/telecommunications-and-information-technology/net-neutrality-legislation-in-states.aspx>, accessed April 10, 2019.

Six state governors issued executive orders that effectively bar state agencies from doing business with ISPs that violate net neutrality principles.⁹²

Multiple parties, including attorneys-general from 22 states, have also filed legal challenges to the new policy. On September 30, 2018, California passed a strict net neutrality law, but it has reached an agreement with the U.S. Department of Justice to hold enforcement of this law in abeyance until the legal challenges to the new policy are resolved.^{93, 94, 95}

E. Universal Service

Universal service is the policy that all Americans should have equal access to communications services. While Florida consumers benefit from being able to make and receive calls from all parts of the nation, there is a cost associated with this policy. The Universal Service Fund (USF) is the federal fund that supports the budgets of universal service programs; it is paid for by contributions from providers of telecommunications based on an assessment of interstate and international end-user revenues.

In general, Florida consumers pay more into the USF than what is returned to eligible service providers in Florida.⁹⁶ For 2017, New York, California, and New Jersey consumers were larger net contributors than Florida. The FPSC monitors and participates in ongoing proceedings at the FCC and with the Federal-State Joint Board on Universal Service. Table 7-1 shows Florida's estimated contribution and receipts for 2017 and provides a comparison of net contributions for 2015 and 2016.

⁹² NRRI, "Net Neutrality State Actions Tracker," published April 17, 2018, <http://nrri.org/net-neutrality-tracker/>, accessed April 25, 2018.

⁹³ Ibid.

⁹⁴ California Legislature, Consumer Remedies Act as amended, passed September 30, 2019, <https://legiscan.com/CA/bill/SB822/2017>, accessed April 10, 2019.

⁹⁵ NECA, District Court Stays Challenge of California Net Neutrality Bill, issued October 26, 2019, <https://prodnet.www.neca.org/publicationsdocs/wwwpdf/102618caorder.pdf>, accessed April 10, 2019.

⁹⁶ FCC, "Universal Service Monitoring Report-2018," released May 31, 2019, <https://docs.fcc.gov/public/attachments/DOC-357769A1.pdf>, accessed May 31, 2019.

Table 7-1
2017 Federal Universal Service Programs in Florida
(Annual Payments and Contributions in Thousands of Dollars)

| | 2015 | 2016 | 2017 | | |
|---------------------|---------------|---------------|----------------------------|----------------------------------|---------------|
| | Estimated Net | Estimated Net | Service Providers Payments | Estimated Consumer Contributions | Estimated Net |
| High-Cost | (\$219,785) | (\$211,994) | \$57,775 | \$283,322 | (\$225,547) |
| Low Income | (6,787) | 4,004 | 78,777 | 77,849 | (928) |
| Schools & Libraries | (60,265) | (48,257) | 132,689 | 160,305 | (27,616) |
| Rural Health Care | (16,315) | (13,639) | 3,633 | 15,821 | (12,188) |
| Total | (\$308,505) | (\$280,312) | \$272,874 | \$549,555 | (\$276,681) |

Source: FCC Universal Service Monitoring Report, various years, Table 1.9.⁹⁷

1. Contribution System Reform

Telecommunications service providers fund the USF based on a quarterly FCC assessment factor applied to interstate and international telecommunications revenues. Mobile wireless carriers and interconnected VoIP providers are also required to contribute.⁹⁸ As detailed in Figure 7-1, the assessment factor exceeded 20 percent for the first time in 2018, and it is expected to exceed 24 percent in the third quarter of 2019.⁹⁹ Since 2015, the assessment factor ranged from a high of 24.9 percent in the third quarter of 2019 to a low of 16.7 percent in the fourth quarter of 2015.¹⁰⁰ Figure 7-1 illustrates assessment factor rates and projected rates since 2015.

To ensure that funding is sufficient for USF programs, the FCC issued a Notice of Proposed Rulemaking on May 31, 2019, seeking comment on ways to evaluate financial aspects of the four Universal Service programs, including the possibility of a budget cap.¹⁰¹

⁹⁷ Note: Figures may not add up due to rounding.

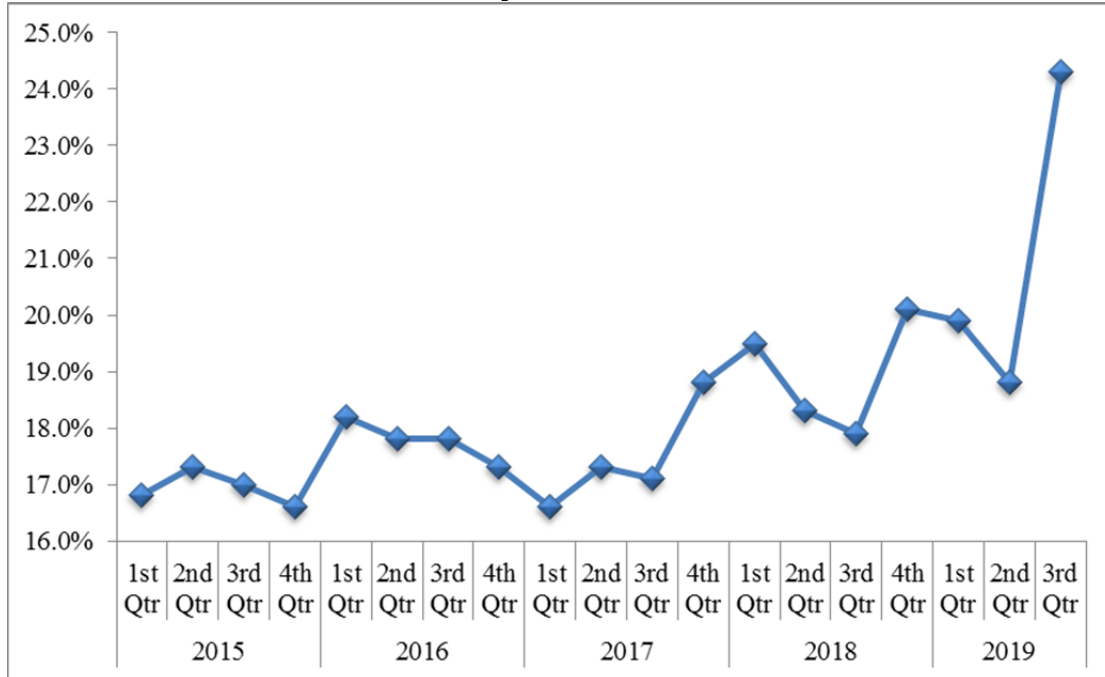
⁹⁸ Wireless carriers and interconnected VoIP providers may use the interim safe harbor percentages to estimate the interstate portion of their revenues.

⁹⁹ Billy Jack Gregg Universal Consulting, USAC Data Email, received June 3, 2019.

¹⁰⁰ FCC, "Contribution Factor & Quarterly Filings - Universal Service Fund (USF) - Management Support," <http://www.fcc.gov/encyclopedia/contribution-factor-quarterly-filings-universal-service-fund-usf-management-support>, accessed May 31, 2019.

¹⁰¹ FCC, "FCC Initiates Evaluation of Funding for USF," released May 31, 2019, <https://www.fcc.gov/document/fcc-initiates-evaluation-funding-usf>, accessed June 5, 2019.

**Figure 7-1
USF Quarterly Assessment Factor**



Source: FCC Public Notices on Proposed Contribution Factors, various quarters

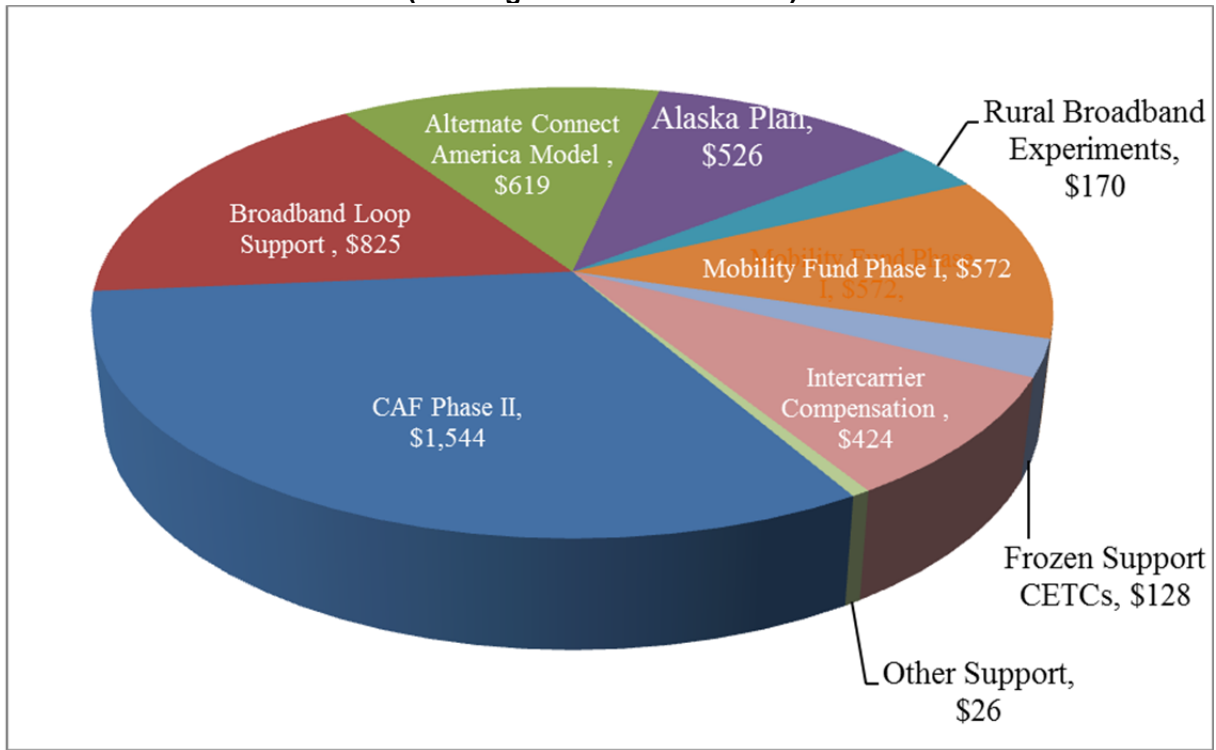
2. High Cost

In 2011, the FCC reformed and modernized its existing high-cost fund to maintain voice services and extend broadband capable infrastructure.¹⁰² As part of this reform, the FCC began to phase out the existing high-cost support programs and began funding through the Connect America Fund (CAF). The CAF focuses on supporting and expanding fixed broadband availability and voice service. Figure 7-2 identifies the authorized national support by high-cost program for 2018, an increase of 3.9 percent from 2017.

The High Cost Program implemented three new funds in 2017, with the intended goal to bring broadband to rural America. First, the Alternative Connect America Cost Model, with \$619.1 million disbursed in 2018, offered interstate rate-of-return carriers the option to elect to receive model-based support for a 10-year term in exchange for extending broadband service to a pre-determined number of eligible locations. Second, the Connect America Broadband Loop Support, with \$825.2 million disbursed in 2018, was made available to interstate rate-of-return carriers that elected not to participate in the Alternative Connect America Cost Model. This program is a rebranded form of interstate common line support, but expanded to support broadband-only lines. Finally, the Alaska Plan, with \$526.2 million disbursed in 2018, established a separate fund for wireline and wireless carriers that serve Alaska. Like the Alternative Connect America Cost Model, carriers can elect to receive model-based support for a 10-year term in exchange for extending broadband service. It differs from that program in so far as it incorporates the unique climate and geography of Alaska.

¹⁰² FCC 11-161, WC Docket No. 10-90, Connect America Fund, Report and Order and Further Notice of Proposed Rulemaking, released November 18, 2011, http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-11-161A1.pdf, accessed June 5, 2019.

Figure 7-2
2018 Authorized Federal High-Cost Support
(Funding in Millions of Dollars)



Source: USAC 2018 Annual Report¹⁰³

3. Schools and Libraries

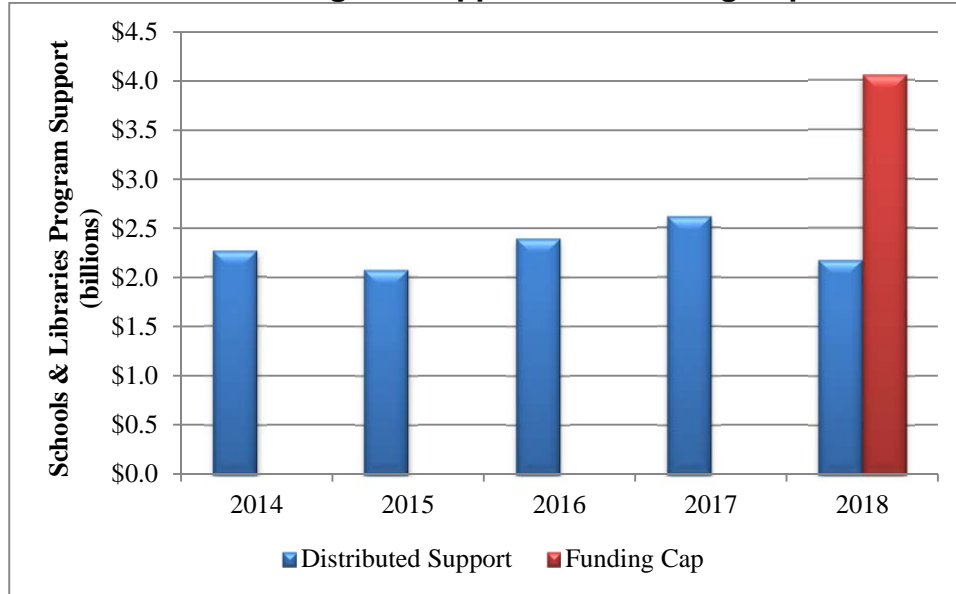
The schools and libraries support program, commonly known as the E-rate Program, provides financial assistance for eligible schools and libraries. The program provides support to reduce the cost associated with telecommunications services, Internet access, and eligible equipment, along with repair and upkeep of eligible equipment. The discounts range from 20 percent to 90 percent of the costs of eligible services, depending on the level of poverty and whether the school or library is located in an urban or rural area.

Figure 7-3 reflects the new cap relative to the amount of support distributed in prior years.¹⁰⁴ On an annual basis, Florida consumers can expect to pay about \$28 million more per year into the federal program than the amount of support Florida schools and libraries will receive based on 2017 estimated contribution data. Because the cap is almost twice the amount as what was distributed, there is the potential for increased net contributions into the program in the future.

¹⁰³ Universal Service Administrative Company 2018 Annual Report, <https://www.usac.org/res/documents/about/pdf/annual-reports/usac-annual-report-2018.pdf>, page 10, accessed May 31, 2019.

¹⁰⁴ FCC Public Notice, DA 18-163, Wireline Competition Bureau Announces E-Rate Inflation-Based Cap for Funding Year 2018, released February 20, 2018, <https://www.fcc.gov/document/2018-e-rate-cap-adjusted-inflation>, accessed June 1, 2019.

**Figure 7-3
E-Rate Program Support and Funding Cap**



Source: USAC 2018 Annual Report¹⁰⁵ and Universal Service Monitoring Report

4. Low Income

The Lifeline program provides a \$9.25 discount on phone service for qualifying low-income consumers to ensure that all Americans have the opportunities and security that phone service brings. The FCC has determined that broadband has become essential to participation in modern society, offering access to jobs, education, health care, government services and opportunity. On April 27, 2016, the FCC released an Order to further modernize the federal Lifeline program.

The FCC’s Order takes a variety of actions to encourage more Lifeline providers to deliver newly supported broadband services as the FCC transitions from primarily supporting voice services to targeting support at providing broadband services. The Order also limits the qualifying criteria consumers can use to sign up for Lifeline services, removing the ability of states to specify additional qualifying programs or criteria. In addition, the FCC has established a budget for the expanded Lifeline program of \$2.25 billion, indexed to inflation. By way of comparison, the authorized support for the Lifeline program in 2018 was \$1.14 billion.¹⁰⁶

The FCC states that to be sustainable and achieve its goals of providing low-income consumers with robust, affordable, and modern service offerings, a forward-looking Lifeline program must focus on broadband services. Therefore, the FCC concluded that it is necessary that going forward the Lifeline discount will no longer apply to voice-only offerings, following an extended transition period, except in census blocks with only one Lifeline provider. Prior to the complete

¹⁰⁵ Universal Service Administrative Company 2018 Annual Report, <https://www.usac.org/res/documents/about/pdf/annual-reports/usac-annual-report-2018.pdf>, page 10, accessed May 31, 2019.

¹⁰⁶ Universal Service Administrative Company 2018 Annual Report, <https://www.usac.org/res/documents/about/pdf/annual-reports/usac-annual-report-2018.pdf>, page 6, accessed May 17, 2019.

phase out of support for voice-only services, the FCC will reevaluate its conclusion as part of a 2021 report on the state of the Lifeline marketplace. After this transition, the federal Lifeline program will continue to support voice service when bundled with a broadband service that meets the FCC’s minimum service standards.¹⁰⁷ Table 7-2 outlines the FCC's phase down schedule.

**Table 7-2
Lifeline Support Phase Down Schedule**

| Effective Dates | Fixed Voice | Mobile Voice | Fixed Broadband | Mobile Broadband |
|--------------------------|--------------------|---------------------|------------------------|-------------------------|
| Through 11/30/2019 | \$9.25 | \$9.25 | \$9.25 | \$9.25 |
| From 12/1/19 to 11/30/20 | \$7.25 | \$7.25 | \$9.25 | \$9.25 |
| From 12/1/20 to 11/30/21 | \$5.25 | \$5.25 | \$9.25 | \$9.25 |
| After 11/30/21 | 0 | 0 | \$9.25 | \$9.25 |

Source: FCC 2016 Lifeline Modernization Order (FCC 16-38)

On May 14, 2019, the FPSC approved the relinquishment of both Cox Florida Telcom, L.P. (Cox) and Global Connection Inc. of America’s (Global) wireline ETC designations. In the relinquishment petition filed by Cox, the company cites the FCC Lifeline changes described above, as well as the impact of the shift in demand towards wireless Lifeline service as the reasons it is exiting the market as an ETC.¹⁰⁸ In 2017 the Commission approved a partial ETC relinquishment for AT&T in all areas of the company’s service territory in which they did not receive high cost support. Much like Cox’s petition, AT&T echoed the statements that the shift in market demand towards wireless Lifeline subscription and the changes the FCC were making to the program hindered wireline market share and profitability. Global relinquished its wireline ETC designation, but has also cancelled its Certificate of Authority to provide telecommunications service in Florida. In the company’s petition it states that though it has made the decision to relinquish their ETC designation and cease offering wireline service, the company’s organizational strategy will allow them to operate as a non-ETC wireless service provider in Florida. It is unclear if this represents a potential trend of wireline ETC relinquishments that could impact the Florida Lifeline market.

The FPSC filed comments in the FCC’s 2017 Fourth Report and Order and Notice of Proposed Rulemaking to further reform the Lifeline program.¹⁰⁹ In those comments, the FPSC took the position that customers should have the option to continue to receive Lifeline support for voice-

¹⁰⁷ The fixed broadband speed standard is based on what a substantial majority of consumers receive (currently 18 Mbps downloads/2 Mbps uploads). The FCC also sets minimum monthly fixed broadband usage allowances, starting at 150 GB on December 2, 2016, and as of December 1, 2018 has been increased to 1000 GB. Mobile broadband services standards have been phased in starting at 500 MB per month of 3G data on December 1, 2016, two GB of 3G data as of December 1, 2018, and will be analyzed by the FCC for further increases in speeds and usage allowance using an update mechanism by December 1, 2019.

¹⁰⁸ Petition of Cox Florida Telcom, L.P. for Relinquishment of Eligible Telecommunications Carrier Status, pp. 2-4, <http://www.fcc.gov/filings/psc/library/filings/2019/02247-2019/02247-2019.pdf>, accessed May 17, 2019.

¹⁰⁹ Comments of the Florida Public Service Commission in WC Docket No. 17-287, Bridging the Digital Divide for Low-Income Consumers, WC Docket No. 11-42, Lifeline and Link Up Reform Modernization, and WC Docket No. 09-197, Telecommunication Carriers Eligible for Universal Service Support, <http://www.psc.state.fl.us/Files/PDF/Dockets/Federal/FPSCCommentsToFCC.2.21.18.pdf>, accessed May 17, 2019.

only service and that the FCC should eliminate its planned phase down of support for voice-only services. We noted our concern that if the only option for customers to obtain Lifeline voice service is to combine the service with broadband, the combined services may become cost prohibitive for some consumers without increasing financial support from the Lifeline program.

F. Major Calling Enforcement Actions

Federal and state agencies routinely initiated enforcement actions to deter noncompliance with government regulations. During 2018, the Florida Attorney General, FCC, FTC, and Department of Justice issued major violations for issues such as buildout failure, calling violations, call completion, fraud, slamming and cramming, and Universal Service Fund violations. Florida-based companies and residents were involved in several major violations including the following.

1. Calling Violations

The Truth in Caller ID Act prohibits callers from deliberately falsifying caller ID information, a practice called “spoofing”, disguising their identity with the intent to harm, defraud consumers, or wrongfully obtain anything of value. Changes in technology have made it easier and cheaper for scammers to make robocalls and to manipulate caller ID information. To address this consumer problem, the FCC and FTC have focused both on enforcement actions and on pursuing policies to help consumers and their service providers block malicious robocalls. Some recent examples of calling violation enforcement actions are listed below.

- On May 10, 2018, the FCC fined Mr. Adrian Abramovich of Miami, \$120 million for making approximately 96 million spoofed robocalls.¹¹⁰
- On December 14, 2018, the Office of the Florida Attorney General and the FTC announced a federal district court judgment of \$23 million against Kevin Guice, owner of an Orlando-based scam robocall operation, for tricking consumers into paying upfront fees of \$500 to \$1500 for false credit card interest-rate-reduction and debt-elimination services.
- On March 26, 2019, the FTC issued a press release detailing its recent settlements with two companies and associated individuals in Florida. Higher Goals Marketing, based in Orlando, was fined \$3.15 million for robocalls and Pointbreak Media and affiliates, based in Boca Raton, Deerfield Beach, and Lake Worth, received fines ranging from \$1.72 million to \$3.62 million for falsely claiming to represent Google and threatening businesses with removal from Google search results.

2. Call Completion Issues

On April 16, 2018, the FCC reached a settlement with T-Mobile over rural call completion violations. The settlement is the result of an FCC investigation into allegations that T-Mobile had been inserting false ring tones in rural calls that it failed to complete. To settle this matter, T-Mobile admitted that it violated the FCC’s prohibition against the insertion of false ring tones

¹¹⁰ FCC, News Release, “FCC Fines Massive Neighbor Spoofing Robocall Operation \$120 Million,” released May 10, 2018, <https://www.fcc.gov/document/fcc-fines-massive-neighbor-spoofing-robocall-operation-120-million>, accessed April 12, 2019.

and that it did not correct problems with delivery of calls to certain rural areas. T-Mobile agreed to implement a compliance plan and to pay a \$40 million civil penalty.¹¹¹

3. Slamming and Cramming

“Slamming” is the illegal practice of switching a consumer’s traditional wireline telephone company for local, local toll, or long distance service without permission. The slamming rules also prohibit unreasonable delays in the execution of an authorized switch by the local telephone company. “Cramming” is the illegal act of placing unauthorized charges on your wireline, wireless, or bundled services telephone bill. Crammers often rely on confusing telephone bills to trick consumers into paying for services they did not authorize or receive, or that cost more than the consumer was led to believe. Below is a list of some slamming and cramming enforcement actions taken recently by the FCC.

- On April 27, 2018, the FCC proposed a \$5.32 million fine against Tele Circuit Network Corporation for slamming, cramming, and failure to respond to an FCC inquiry. This company is a CLEC regulated by the FPSC.¹¹²
- On March 21, 2019, the FCC issued a \$2.32 million fine against Long Distance Consolidated Billing Company for deceptive marketing practices, slamming, and cramming. This company was regulated by the FPSC as an interexchange company (IXC) until IXCs were deregulated on July 1, 2011.¹¹³

4. Universal Service Fund Violations

On February 5, 2019, the FCC approved the creation of a new fraud unit in its Enforcement Bureau in order to help combat misuse of taxpayer funds supporting universal service programs.¹¹⁴ The following is an enforcement action against a locally active company for Universal Service Fund violations.

- On January 30, 2018, the FCC proposed an \$18.7 million fine against DataConnex for apparent violations involving the Universal Service Fund Rural Health Care Program. As a VoIP provider, the Brandon company is not regulated by the FPSC.¹¹⁵

G. Public Safety Network

On December 28, 2017, the state of Florida opted to join the First Responder Network Authority (FirstNet). FirstNet is a nationwide public safety broadband network, as well as the name of the

¹¹¹ FCC, “Settlement with T-Mobile for Rural Call Completion Violations,” released April 11, 2018, <https://www.fcc.gov/document/settlement-t-mobile-rural-call-completion-violations>, accessed April 23, 2019.

¹¹² FCC, “FCC Proposes \$5.3 Million Fine for Cramming & Slamming Violations,” released April 27, 2018, <https://www.fcc.gov/document/fcc-proposes-53-million-fine-cramming-slamming-violations-0>, accessed May 3, 2019.

¹¹³ FCC, “FCC Fines Carrier \$2.32 Million for Slamming and Cramming.,” released on March 21, 2019, <https://www.fcc.gov/document/fcc-fines-carrier-232-million-slamming-and-cramming>, accessed May 3, 2019.

¹¹⁴ FCC, “FCC Votes To Create New Fraud Division Within The Enforcement Bureau,” published February 4, 2019, <https://www.fcc.gov/document/fcc-votes-create-new-fraud-division-within-enforcement-bureau>, accessed April 24, 2019.

¹¹⁵ FCC, News Release, “FCC Proposes \$18.7 Million Fine Against DataConnex,” released January 30, 2017, <https://www.fcc.gov/document/fcc-proposes-187-million-fine-against-dataconnex>, accessed January 31, 2017.

federal agency that was created in 2012 to deploy and operate the network. Congress established FirstNet in Section 6204 of the Middle Class Tax Relief and Job Creation Act of 2012, which also directed the FCC to reserve spectrum frequencies for public safety use in a nationwide broadband network and allocated up to \$7 billion for construction of the network. FirstNet falls under the responsibility of the National Telecommunications and Information Agency (NTIA), which is itself under the purview of the United States Department of Commerce. FirstNet is envisioned as a way to improve efficiency and coordination of emergency services amongst thousands of federal, state, and local first responders. All states and territories have joined FirstNet.^{116,117,118}

On May 2, 2018, NTIA announced the award of 46 grants under the State and Local Implementation Grant Program 2.0 to help states and territories prepare for FirstNet's buildout of the nationwide public safety broadband network. The Florida Department of Management Services received a grant of \$425,000.¹¹⁹

H. Robocalls

The FCC took several actions in 2018 to halt the proliferation of robocalls. On November 5, 2018, FCC Chairman Pai sent letters to voice providers asking those telecommunications companies which have not yet established concrete plans to adopt the new industry call authentication protocol to do so without delay.¹²⁰ This will reduce spoofing and help to identify robocalls. Chairman Pai also sent letters to telecommunications companies on November 6, 2018, to encourage assistance in industry efforts to trace scam robocalls that originate on or pass through company networks.¹²¹

¹¹⁶ Tampa Bay Times, "Florida finally joins FirstNet's future first-responder network," published January 1, 2018, http://www.tampabay.com/news/publicsafety/Florida-finally-joins-FirstNet-s-future-first-responder-network_164012151, accessed April 24, 2018.

¹¹⁷ First Responder Network Authority, <https://firstnet.gov/>, accessed April 24, 2018.

¹¹⁸ Government Publishing Office, "Middle Class Tax Relief And Job Creation Act Of 2012," released February 22, 2012, <https://www.gpo.gov/fdsys/pkg/PLAW-112publ96/pdf/PLAW-112publ96.pdf>, accessed January 24, 2018.

¹¹⁹ NTIA, "NTIA Gives 46 Grant Awards to States and Territories to Plan for FirstNet Deployment," released May 2, 2018, <https://www.ntia.doc.gov/blog/2018/ntia-gives-46-grant-awards-states-and-territories-plan-firstnet-deployment>, accessed April 23, 2019.

¹²⁰ FCC, "Chairman Pai Demands Industry Adopt Protocols To End Illegal Spoofing," released November 5, 2018, <https://www.fcc.gov/document/chairman-pai-demands-industry-adopt-protocols-end-illegal-spoofing>, accessed April 24, 2019.

¹²¹ FCC, "FCC Urges More in Phone Industry to Join in Tracing Scam Robocalls," released November 6, 2018, <https://www.fcc.gov/document/fcc-urges-more-phone-industry-join-tracing-scam-robocalls>, accessed April 24, 2019.

Appendix A. List of Certificated CLECs as of December 31, 2018

** Indicates the company did not respond to the Commission's data request

| | |
|--|--|
| 365 Wireless, LLC | BT Communications Sales LLC |
| 382 Networks, Inc. | BullsEye Telecom, Inc. |
| A.SUR Net, Inc. | Business Telecom, LLC d/b/a EarthLink Business |
| Access One, Inc. | Call One Inc. of Illinois |
| Access Point, Inc. | Callis Communications, Inc. |
| ACN Communication Services, LLC | Campus Communications Group, Inc. |
| Airespring, Inc. | Cbeyond Communications, LLC |
| Airus Inc. | CBTS Technology Solutions LLC |
| Alternative Phone, Inc. ** | CenturyLink Communications, LLC d/b/a Embarq Communications |
| American Telephone Company LLC | Citadel Design & Construction, LLC |
| ANEW Broadband, Inc. | City of Bartow |
| ANPI Business, Inc. | City of Gainesville, a municipal corporation d/b/a GRUCom |
| AT&T Corp. | City of Lakeland |
| ATC Outdoor DAS, LLC | City of Leesburg |
| Atlantic Broadband Enterprise, LLC | City of Ocala d/b/a Ocala Electric Utility |
| Atlantis Communications LLC | Clear Rate Communications, Inc. |
| ATN, Inc. | Cloud Computing Concepts, d/b/a C3 |
| Backbone Communications Inc. ** | Cogent Communications of Florida LHC, Inc. |
| Baldwin County Internet/DSSI Service, L.L.C. ** | Comcast Business Communications, LLC |
| Bandwidth.com CLEC, LLC | Comcast Phone of Florida, LLC d/b/a Comcast Digital Phone |
| Barr Tell USA, Inc. | Comity Communications, LLC |
| Batchlink, Inc. | Communications Authority, Inc |
| BCM One, Inc. | ComNet (USA) LLC |
| BCN Telecom, Inc. | COMTECH 21, LLC |
| BeCruising Telecom LLC d/b/a BeCru | Conterra Ultra Broadband, LLC |
| BellSouth Telecommunications, LLC d/b/a AT&T Florida d/b/a AT&T Southeast | Convergia, Inc. |
| Benchmark Communications, LLC d/b/a TotalComUSA | CoreTel Florida, Inc. |
| BetterWorld Telecom LLC d/b/a BetterWorld Telecom | Cox Florida Telcom, L.P. d/b/a Cox Communications d/b/a Cox Business d/b/a Cox |
| Birch Communications, LLC | Crexendo Business Solutions, Inc. |
| Bright House Networks Information Services (Florida), LLC | Crosstel Tandem, Inc. |
| Broadband Dynamics, L.L.C. | Crown Castle Fiber LLC |
| BroadRiver Communication Corporation | Crown Castle NG East LLC |
| Broadsmart Florida, Inc. ** | Custom Network Solutions, Inc. |
| Broadview Networks, Inc. | Custom Tel, LLC |
| Broadvox-CLEC, LLC | |
| Broadwing Communications, LLC | |

Dais Communications, LLC
Dedicated Fiber Systems, Inc.
DeltaCom, LLC d/b/a EarthLink Business
Dialtone Telecom, LLC
DIGITALIPVOICE, INC. **
Discount CLEC Services Corporation
dishNET Wireline L.L.C.
DSCI, LLC
DSL Internet Corporation d/b/a DSLi d/b/a
VOX3COM **
EarthLink Business, LLC
Easy Telephone Services Company
Electronet Broadband Communications, Inc.
Embarq Florida, Inc. d/b/a CenturyLink
ENA Services, LLC
eNetworks, LLC d/b/a eNetworks NC, LLC
Enhanced Communications Network, Inc.
d/b/a Asian American Association
Entelegant Solutions, Inc.
ExteNet Systems, Inc.
Faster.IO, Inc.
FiberLight, LLC
Fibernet Direct Florida LLC
First Choice Technology, Inc.
First Communications, LLC
FL Network Transport, LLC
Florida Hearing and Telephone Corporation
Florida Phone Systems, Inc.
Fort Pierce Utilities Authority d/b/a FPUAnet
Communications
France Telecom Corporate Solutions L.L.C.
Frontier Communications of America, Inc.
Frontier Communications of the South, LLC
Frontier Florida LLC
GC Pivotal, LLC d/b/a Global Capacity
Georgia Public Web, Inc.
GetGo Communications LLC
GigaMonster, LLC
Global Connection Inc. of America (of
Georgia)
Global Crossing Local Services, Inc.
Goff Network Technologies - Florida, Inc.
d/b/a USA FIBER

Granite Telecommunications, LLC
Great America Networks, Inc. **
GRU Communication Services/GRUCom
GTC Communications, Inc.
GTC, Inc. d/b/a Consolidated
Communications/GTC
Harbor Communications, LLC
Hayes E-Government Resources, Inc.
HD Carrier, LLC
Home Town Telephone, LLC
Hotwire Communications, Ltd. **
IDT America, Corp. d/b/a IDT
inContact, Inc.
INDIGITAL, INC d/b/a INdigital
iNetworks Group, Inc. **
INNOVATIVE TECH PROS, CORP D/B/A
INNOVATIVE TECH PROS
Integrated Path Communications, LLC
InteleTel, LLC
Inteltrace, Inc.
Intellifiber Networks, LLC
Interactive Services Network, Inc. d/b/a ISN
Telcom d/b/a IPFone
InterGlobe Communications, Inc.
InterMetro Fiber, LLC
IPC Network Services, Inc.
ITS Fiber, LLC d/b/a ITS Fiber
ITS Telecommunications Systems, Inc. d/b/a
ITS Fiber
J C Telecommunication Co., LLC **
Joytel Wireless Communications, Inc.
Keys Energy Services
Knology of Florida, Inc. d/b/a WOW! Internet,
Cable and Phone
Latin American Nautilus USA, Inc.
Level 3 Communications, LLC
Level 3 Telecom of Florida, LP
Lightspeed CLEC, Inc. **
Lingo Telecom of the South, LLC
Litestream Holdings, LLC
Local Access LLC
Local Telecommunications Services - FL,
LLC
Magna5 LLC
Maryland TeleCommunication Systems, Inc.

MassComm, Inc. d/b/a Mass Communications
 Matrix Telecom, LLC d/b/a Impact Telecom
 d/b/a Startec d/b/a Americatel d/b/a
 Matrix Business Technologies d/b/a
 Trinsic Communications d/b/a Vartec
 Telecom d/b/a Excel
 Telecommunications d/b/a Clear Choice
 Communication
 MCC Telephony of Florida, LLC
 MCImetro Access Transmission Services
 Corp. d/b/a Verizon Access
 Transmission Services
 McLeodUSA Telecommunications Services,
 L.L.C.
 Metropolitan Telecommunications of
 Florida Inc. d/b/a MetTel
 Miami-Dade Broadband Coalition I LLC
 Micro-Comm, Inc.
 Mitel Cloud Services, Inc.
 MIX Networks, Inc.
 Mobilitie Management, LLC
 MOSAIC NETWORKX LLC
 MULTIPHONE LATIN AMERICA, INC.
 Nebula Telecommunications of Florida LLC
 Network Billing Systems, L.L.C. d/b/a
 Fusion d/b/a Solex
 Network Innovations, Inc.
 Network Telephone, LLC
 Neutral Tandem-Florida, LLC
 New Horizons Communications Corp.
 Norstar Telecommunications, LLC
 North County Communications Corporation **
 Northeast Florida Telephone Company d/b/a
 NEFCOM
 NOS Communications, Inc. d/b/a
 International Plus d/b/a O11
 Communications d/b/a The Internet
 Business Association d/b/a I Vantage
 Network Solutions d/b/a Blueridge
 Telecom Systems
 Offramp, LLC **
 One Voice Communications, Inc.
 OneStar Long Distance, Inc. **
 Onvoy, LLC
 Opextel LLC d/b/a Alodiga
 Optical Telecommunications, Inc. d/b/a
 HControl Corporation d/b/a SH Services
 LLC **
 Orlando Telephone Company, Inc. d/b/a
 Summit Broadband
 PacOptic Networks, LLC
 PaeTec Communications, LLC
 Paradigm Telecom II, LLC
 Paradigm Telecom, Inc.
 Peak Tower, LLC **
 Peerless Network of Florida, LLC
 Phone Club Corporation
 PNG Telecommunications, Inc. d/b/a
 PowerNet Global Communications
 Preferred Long Distance, Inc.
 Pro-Net, Inc.
 Protection Plus of the Florida Keys, Inc. d/b/a
 ENGAGE COMMUNICATIONS
 Pure Telephone Corp **
 QuantumShift Communications, Inc.
 Quincy Telephone Company d/b/a TDS
 Telecom
 RCLEC, Inc.
 Real Fast Networks LLC **
 Rosebud Telephone, LLC
 Sage Telecom Communications, LLC
 Sandhills Telecommunications Group, Inc.
 d/b/a SanTel Communications
 SBA DAS & Small Cells, LLC
 Seminole Telecom of Florida, LLC
 SKYNET360, LLC **
 Smart City Networks, Limited Partnership
 Smart City Solutions II, LLC
 Smart City Solutions, LLC d/b/a Smart City
 Communications
 Smart City Telecommunications LLC d/b/a
 Smart City Telecom
 Southeastern Services, Inc.
 Southern Light, LLC
 Southern Telecom, Inc. d/b/a Southern
 Telecom of America, Inc.
 Spectrotel, Inc. d/b/a OneTouch
 Communications d/b/a Touch Base
 Communications
 Sprint Communications Company Limited
 Partnership

SQF, LLC
Stratus Networks, Inc.
Strome Networks, LLC **
Sunesys, LLC
Synergem Technologies, Inc.
T3 Communications, Inc.
Talk America Services, LLC
Talk America, LLC d/b/a Windstream Talk
America, LLC
TALKIE COMMUNICATIONS, INC.
TampaBay DSL Inc d/b/a PBX-Change
Telapex Long Distance, Inc.
TelCentris Communications, LLC **
Telco Experts, LLC
TelCove Operations, LLC
Tele Circuit Network Corporation
Telecom Management, Inc. d/b/a Pioneer
Telephone
Teleport Communications America, LLC
Teliix, Inc.
Telrite Corporation
Telscape Communications, Inc.
Terra Nova Telecom, Inc.
TerraNovaNet, Inc.
The Other Phone Company, LLC
TIME CLOCK SOLUTIONS, LLC
Time Warner Cable Business LLC
Total Marketing Concepts, LLC **
Touchtone Communications Inc.
Tristar Communications Corp.
Triton Networks, LLC
United Commercial Telecom, LLC
Uniti Fiber LLC

US LEC of Florida, LLC d/b/a PAETEC
Business Services
US Signal Company, L.L.C.
Vanco US, LLC
Velocity The Greatest Phone Company Ever,
Inc.
Verizon Select Services Inc.
Vero Fiber Networks, LLC d/b/a Vero
Networks
Vesta Solutions, Inc.
VoDa Networks, Inc.
Vodafone US Inc.
Voxbeam Telecommunications Inc.
WAHL TV INC.
WANRack, LLC
Webpass Florida LLC
West Safety Communications Inc.
West Telecom Services, LLC
Wholesale Carrier Services, Inc.
Wide Voice, LLC
WiMacTel, Inc.
Windstream Florida, LLC
Windstream KDL, LLC
Windstream Norlight, LLC
Windstream NTI
Windstream NuVox, LLC
WonderLink Communications, LLC
WTI Communications, Inc.
XO Communications Services, LLC
YMax Communications Corp.
Zayo Group, LLC

Glossary

| | |
|-------------------------------|--|
| 4G | The short name for fourth-generation wireless, the stage of broadband mobile communications that will supercede the third generation (3G). A 4G network requires a mobile device to be able to exchange data at 100 Mbps |
| 5G | 5G is the coming fifth-generation wireless broadband technology. 5G will provide better speeds and coverage than the current 4G. 5G is set to offer speeds of up to 1 Gb/s for tens of connections or tens of Mbps for tens of thousands of connections. 5G is not scheduled for nationwide launch until 2020. |
| Access Line | The circuit or channel between the demarcation point at the customer's premises and the serving end or class 5 central office. |
| Backhaul | In wireless networks, the connection from an individual base station (tower) to the central network (backbone). Typical backhaul connections are wired high-speed data connections (T1 line, etc.), but they can be wireless as well (using point-to-point microwave or WiMax, etc.). |
| Broadband | A term describing evolving digital technologies offering consumers integrated access to voice, high-speed data services, video on demand services, and interactive information delivery services. |
| Circuit | A fully operational two-way communications path. |
| CLEC | <i>Competitive Local Exchange Company</i> . Any company certificated by the Florida Public Service Commission to provide local exchange telecommunications service in Florida on or after July 1, 1995. |
| Communications Act or The Act | The federal Communications Act of 1934, as amended by the Telecommunications Act of 1996, established a national framework to enable CLECs to enter the local telecommunications marketplace. |
| DSL | Digital Subscriber Line, a technology that connects the user to broadband connections across a telephone network. It uses the same copper loops as wireline telephone service. |
| Facilities-based VoIP service | This term refers to VoIP service provided by the same company that provides the customer's broadband connection. Facilities-based VoIP services are generally provided over private managed networks and are capable of being provided according to most telephone standards. While this service uses Internet Protocol for its transmission, it is not generally provided over the public Internet. |
| ILEC | <i>Incumbent Local Exchange Company</i> . Any company certificated by the FPSC to provide local exchange telecommunications service in Florida on or before June 30, 1995. |

| | |
|---|---|
| Interconnected VoIP service | According to the FCC, it is a VoIP 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; and (4) permits users generally to receive calls that originate and terminate on the public switched telephone network. |
| Intermodal | The use of more than one type of technology or carrier to transport telecommunications services from origination to termination. When referring to local competition, intermodal refers to non-wireline voice communications such as wireless or VoIP. |
| Internet Protocol (IP) | The term refers to all the standards that keep the Internet functioning. It describes software that tracks the Internet address of nodes, routes outgoing messages, and recognizes incoming messages. |
| Over-the-Top VoIP service | This term refers to VoIP service that is provided independently from a particular broadband connection and is transmitted via the public Internet. |
| Switched Access | Local exchange telecommunications company-provided exchange access services that offer switched interconnections between local telephone subscribers and long distance or other companies. |
| TDM | Time Division Multiplexing is a method of transmitting and receiving independent signals over a common signal path by means of synchronized switches at each end of the transmission line so that each signal appears on the line only a fraction of the time in an alternating pattern. TDM circuit switched lines represent the traditional wireline access line data within this report and do not include VoIP connections. |
| U-verse | U-verse is the brand name of AT&T for a group of services provided via Internet Protocol (IP), including television service, Internet access, and voice telephone service. |
| Universal Service | This term describes the financial support mechanisms that constitute the national universal service fund. This fund provides compensation to communications entities for providing access to telecommunications services at reasonable and affordable rates throughout the country, including rural, insular, high-cost areas, and public institutions. |
| Universal Service Administrative Company (USAC) | USAC is an independent American nonprofit corporation designated as the administrator of the federal Universal Service Fund by the Federal Communications Commission. USAC is a subsidiary of the National Exchange Carrier Association. |
| VoIP | <i>Voice over Internet Protocol</i> . The technology used to transmit voice conversations over a data network using Internet Protocol. |
| Wireline | A term used to describe the technology used by a company to provide telecommunications services. Wireline is synonymous with "landline" or land-based technology. |