

Broadband/Internet Availability Survey Report



NTCA—THE RURAL BROADBAND ASSOCIATION

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INTRODUCTION

For nearly two decades, NTCA–The Rural Broadband Association (NTCA) has conducted its Broadband/Internet Availability Survey to gauge the deployment rates of advanced services by its member companies. NTCA is a national association representing nearly 850 rural rate-of-return regulated telecommunications providers in 45 states.

All NTCA members are small network operators that are “rural telephone companies” as defined in the Communications Act of 1934, as amended by the Telecommunications Act of 1996. All of NTCA’s members are full service local exchange carriers and broadband service providers. Respondents to this year’s survey report have an average of 3,442 residential and 462 business fixed broadband connections in service.

This latest broadband survey is a follow-up to similar surveys conducted in recent years by NTCA and seeks to build upon the results of those surveys.¹ This year’s survey asked about technologies used to provide broadband service, broadband availability and subscription rates, anchor institutions,² mobile wireless and data services, quantity and types of competition, broadband marketing efforts, fiber deployment, internet backbone and middle mile connections, and video service.

In August 2019, NTCA contracted with Association Research, Inc. (ARI)³ to conduct this year’s survey. ARI sent an email with a survey link to each of the companies (as reflected at the holding company level) in NTCA’s email database; 229 members (36.3%) responded. It is important to note that not all respondents answered every question in the survey.

The average service area identified by respondents is approximately 2,577 square miles. More than sixty percent (64.1%) had customer densities in their service areas of 10 residential customers per square mile or less; 23.5% had densities of two residential customers per square mile or less.

Respondents indicated that they use a variety of platforms within their respective service areas to provide broadband service to their customers.⁴ More than three in five (63.8%) of respondents’ broadband serviceable locations are served via fiber to the home (FTTH), while 22.7% are served via copper loops, 9.3% via fiber to the node (FTTN), 2.4% via cable modem, 1.1% via unlicensed fixed wireless, and 0.7% via licensed fixed wireless.

¹ Copies of this and previous NTCA survey reports can be downloaded from the NTCA website at <https://www.ntca.org/ruraliscool/survey-reports>.

² Anchor Institutions are defined by the Federal Communications Commission as entities such as “schools, libraries, hospitals and other medical providers, public safety entities, institutions of higher education, and community support organizations that facilitate greater use of broadband by vulnerable populations, including low-income, the unemployed, and the aged.” A more in-depth look at types of broadband services that NTCA members offer to anchor institutions within their communities is available at https://www.ntca.org/sites/default/files/documents/2018-08/NTCA%20Rural%20Anchor%20Institution%20Survey%20Report_Final.pdf.

³ Association Research, Inc., an independent survey research organization located in Gaithersburg, Maryland, conducted the survey, analyzed the findings and prepared this report. All responses have been kept confidential; this report does not reveal information from any individual source.

⁴ For purposes of this survey, broadband is defined as throughput equal to or exceeding 200 kilobits per second in at least one direction.

On average, respondents indicated the following percentage of their customer base *can receive* maximum downstream speeds of:

- Greater than/equal to 1 Gig: 25.3%
- Greater than/equal to 100 Mbps but less than 1 Gig: 35.5%
- Greater than/equal to 25 Mbps but less than 100 Mbps: 14.5%
- Greater than/equal to 10 Mbps but less than 25 Mbps: 14.0%
- Greater than/equal to 4 Mbps but less than 10 Mbps: 7.3%
- Greater than/equal to 1.5 Mbps but less than 4 Mbps: 2.7%

In NTCA's 2016 Broadband Survey Report, 66.5% of respondents' customers could receive a maximum downstream speed greater than 25 Mbps, lower than the 75.3% of customers identified by respondents in 2019.

Respondents' customers *subscribe to* the following maximum downstream speeds:

- 3.4% subscribe to speeds greater than/equal to 1 Gig.
- 14.6% subscribe to greater than/equal to 100 Mbps but less than 1 Gig.
- 32.0% subscribe to greater than/equal to 25 Mbps but less than 100 Mbps.
- 25.5% subscribe to greater than/equal to 10 Mbps but less than 25 Mbps.
- 17.1% subscribe greater than/equal to 4 Mbps but less than 10 Mbps.
- 5.8% subscribe to service greater than/equal to 1.5 Mbps but less than 4 Mbps.

The percentage of customers subscribing to downstream speeds greater than or equal to 25 Mbps has increased steadily in the past three years, with 17% of respondents' customers subscribing to speeds above 25 Mbps in the 2016 survey, just under 40% subscribing to downstream speeds at or above 25 Mbps in 2018, and 50.0% subscribing to downstream speeds at or above 25 Mbps in 2019.

Deploying fiber to the home is the most frequently cited short-term and long-term service improvement strategy, 54.3% and 51.4%, respectively. The main barrier to widespread deployment of fiber, as reported by 91.4% of respondents, is cost (compared with 93.2% in 2018 and 88.9% in 2016). More than half (55.0%, up from 46.6% in 2018 and 51.5% in 2016) cited long loops as a barrier to widespread deployment and 43.6% (down from 59.4% in 2018 and 53.5% in 2016) also cited regulatory uncertainty as a barrier.

FIXED VOICE AND BROADBAND

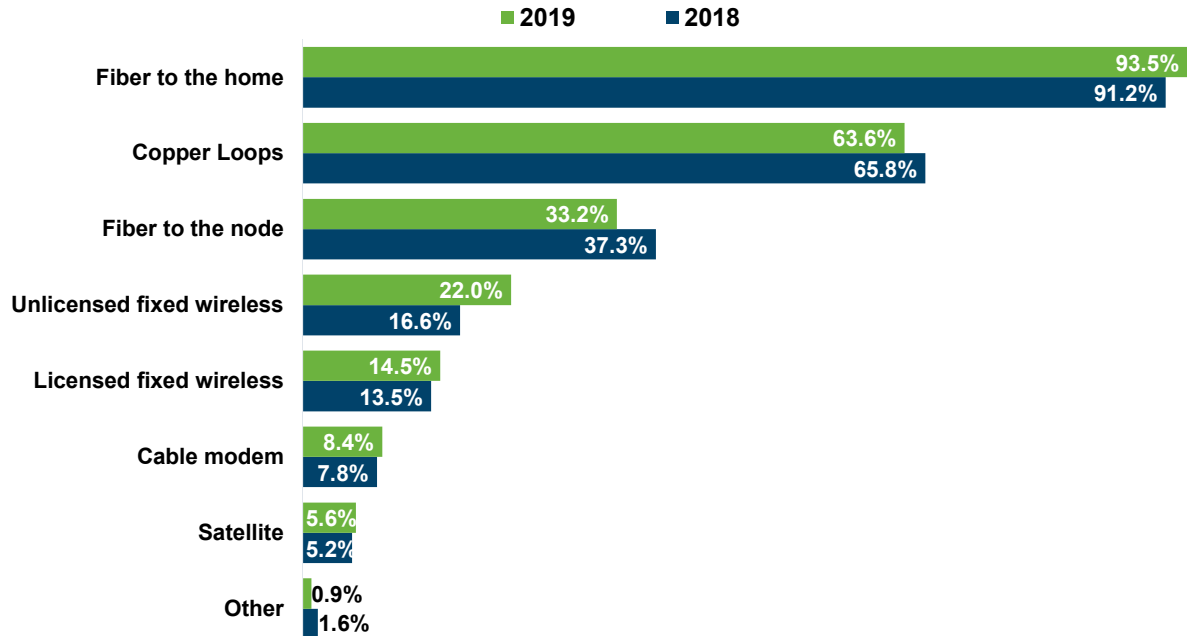
Voice Grade Access Lines, Interconnected VoIP Lines and Broadband Connections

Fixed Voice and Broadband	Residential		Business	
	2018 Mean	2019 Mean	2018 Mean	2019 Mean
Number of voice grade access lines	4,355	3,212	1,493	1,057
Number of interconnected VoIP lines	N/A	779	N/A	280
Number of fixed broadband connections	4,455	3,442	530	462

Source: 2019 NTCA–Broadband/Internet Availability Survey

- The average respondent reports having 3,212 residential local exchange voice grade access lines in service in 2019. The average number of business local exchange voice grade access lines in service in 2019 is 1,057.
- The average respondent also reports having 779 residential interconnected VoIP lines and 280 business interconnected VoIP lines in service in 2019. (Prior surveys did not distinguish VoIP from other voice connections.)
- On average, respondents indicate having 3,442 residential fixed broadband connections in service in 2019. The average number of business fixed broadband connections in service is 462.
- The average service area is approximately 2,577 square miles. Approximately two-fifths (41.2%) reported having a service area of less than 500 square miles. Nearly six in 10 (58.8%) of survey respondents reported a service area of 500 square miles or larger, and about one-quarter (26.3%) have a service area of 2,000 square miles or larger.

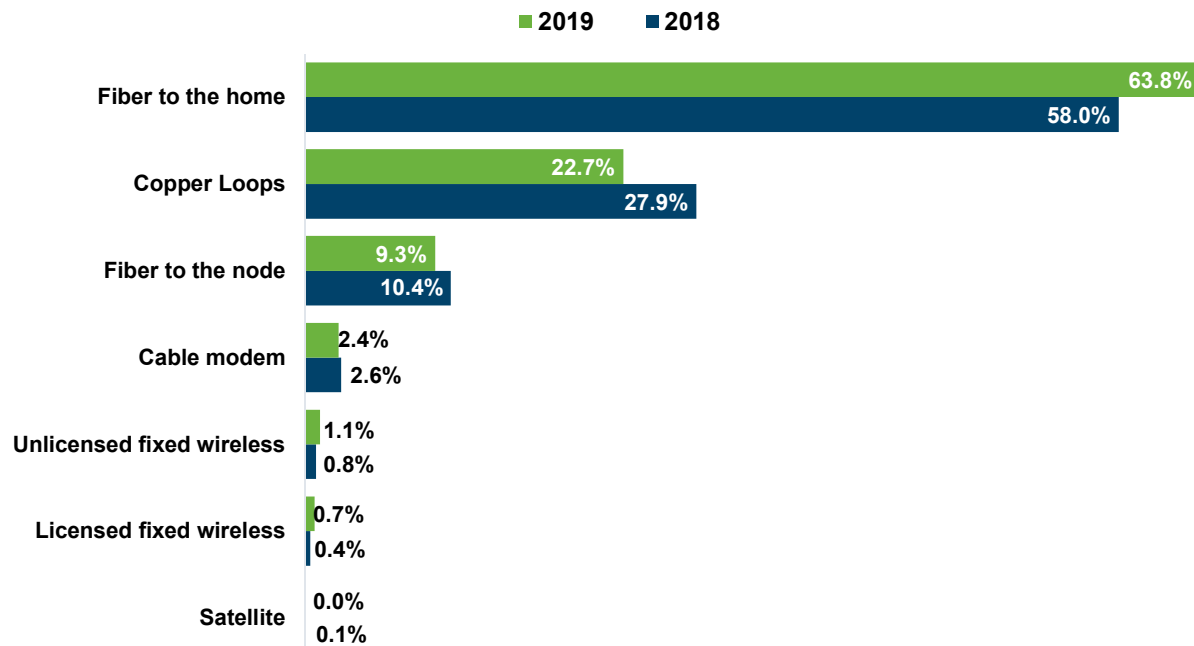
Network Platforms Used to Provide Fixed Broadband Service



Source: 2019 NTCA–Broadband/Internet Availability Survey

- Most respondents (93.5%) in 2019 report using fiber to the home to provide fixed broadband service in some portion of their service area, up from 91.2% in 2018 and 86.2% in 2016. More than six in 10 (63.6%) respondents use copper loops and one-third (33.2%) use fiber to the node, slightly lower than the proportions reported in 2018 (65.8% and 37.3%, respectively). Percentages add up to more than 100% due to the presence and use of multiple technology platforms in individual respondents’ networks.
- The platforms respondents use least often to provide fixed broadband service are satellite (5.6%) and cable modems (8.4%).

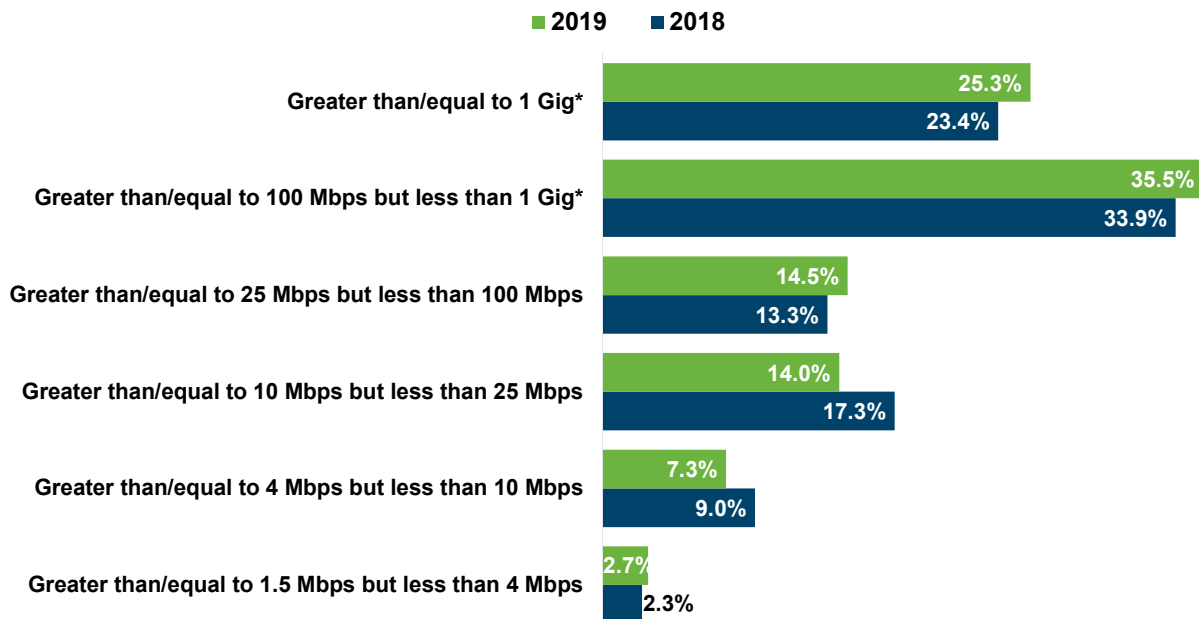
Average Percentage of Serviceable Locations for Network Platforms



Source: 2019 NTCA–Broadband/Internet Availability Survey

- In 2018, the survey asked respondents to report the percentage of residential customers *served* by each network platform. The 2019 survey, by comparison, asked respondents to report the percentage of “*serviceable* locations” for each network platform. Thus, while the 2019 percentages do not reflect an exact comparison to 2018, the results are comparable and demonstrate respondents’ continued deployment of fiber to their communities.
- On average, respondents indicate that 63.8% of their locations are serviceable by fiber to the home, while 22.7% are capable of being served by copper loops and 9.3% by fiber to the node. The 2018 survey reported that, on average, 58.0% of respondents’ residential customers were served by fiber to the home, 27.9% by copper loops, and 10.4% by fiber to the node.
- Only a small percentage of respondents’ locations are serviceable by cable modem (2.4%), or by unlicensed (1.1%) or licensed (0.7%) fixed wireless. This is similar to 2018, when 2.6% of respondents’ residential customers were served by cable modem, 0.8% by unlicensed fixed wireless, 0.4% by licensed fixed wireless, and 0.1% by satellite.

Maximum Downstream Speed Availability

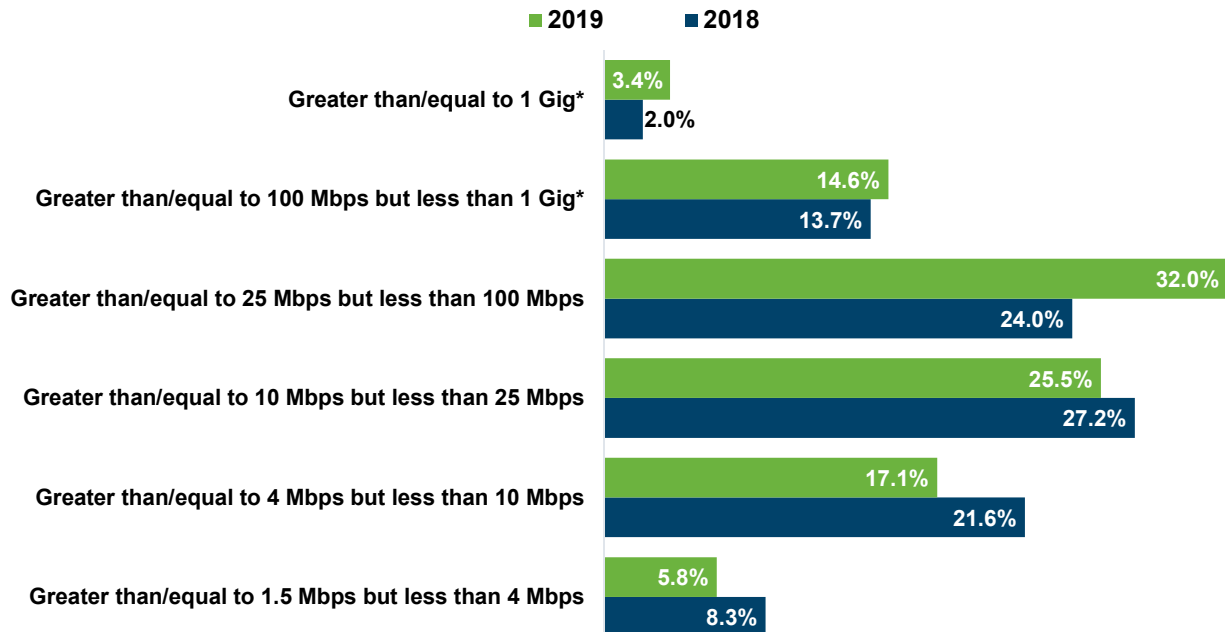


*1 Gig = 1,000 Mbps

Source: 2019 NTCA–Broadband/Internet Availability Survey

- Respondents report that an average of 35.5% of their customer base can receive a maximum downstream speed for fixed broadband of greater than or equal to 100 Mbps but less than 1 Gig; 25.3% can receive a maximum downstream speed greater than or equal to 1 Gig; and 14.5% can receive a maximum downstream speed greater than or equal to 25 Mbps but less than 100 Mbps.
- Respondents also report that 14.0% of their customer base can receive a maximum downstream speed of greater than or equal to 10 Mbps but less than 25 Mbps, and 7.3% can receive a maximum downstream speed greater than or equal to 4 Mbps but less than 10 Mbps.
- Respondents report that a very small percentage of their customer base is still only able to receive maximum downstream speeds greater than or equal to 1.5 Mbps but less than 4 Mbps (2.7%).

Broadband Adoption by Speed Tier



*1 Gig = 1,000 Mbps

Source: 2019 NTCA–Broadband/Internet Availability Survey

- In 2019, respondents report that 50.0% of their customer base subscribes to a maximum downstream speed of greater than or equal to 25 Mbps, compared with 39.7% in 2018 and just 17% in 2016. It should be noted that the 2016 survey did not ask for specific speed tiers above 25 Mbps as is the case in the current survey.
- On a more granular basis, survey respondents indicate that 32.0% of their customer base subscribes to a maximum downstream speed for fixed broadband of greater than or equal to 25 Mbps but less than 100 Mbps (up significantly from 24.0% in 2018), while 25.5% subscribes to a maximum downstream speed of greater than or equal to 10 Mbps but less than 25 Mbps, down from 27.2% in 2018. Additionally, in 2019, 17.1% subscribes to a maximum downstream speed of greater than or equal to 4 Mbps but less than 10 Mbps, which is lower than reported for 2018 (21.6%).
- In 2019, respondents indicate that 18.0% of their customers subscribe to a maximum downstream speed of greater than or equal to 100 Mbps (compared with 15.7% in 2018).
- Respondents' customers are less likely to subscribe to maximum downstream speeds of less than 4 Mbps; only 5.8% subscribe to a maximum downstream speed of greater than or equal to 1.5 Mbps but less than 4 Mbps.

Speed Availability and Estimated Cost of Bringing Customers Up to Each Level (Upstream and Downstream)

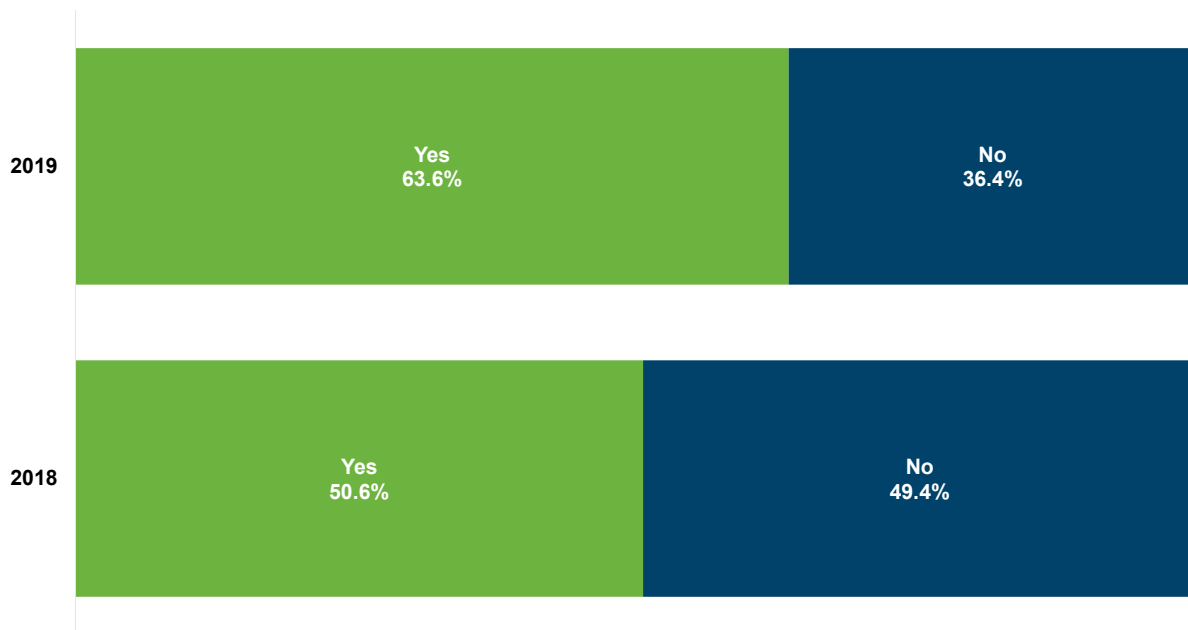
Downstream Speed	Estimated Total Costs
	2019 Mean
25 Mbps	\$22,150,008
100 Mbps	\$28,699,373

Upstream Speed	2019 Mean
Percentage of customers that can receive an upstream speed of 3 Mbps or greater for fixed broadband service	79.2%
Estimated total cost of bringing all customers who are not already at 3 Mbps upstream up to that level	\$21,065,201

Source: 2019 NTCA–Broadband/Internet Availability Survey

- On average, respondents estimate that it would cost approximately \$28.7 million to bring customers who are not already at 100 Mbps fixed broadband service (downstream only) up to that speed.
- The average total estimated cost to bring customers up to the 25 Mbps (downstream) level of service is \$22.2 million.
- Respondents report that an average of 79.2% of their customers can receive an upstream speed of 3 Mbps or greater for fixed broadband service, essentially unchanged from 2018. The average estimated total cost of bringing customers not at the level of 3 Mbps upstream to this level is about \$21.1 million, slightly lower than the average estimated cost reported in 2018 (\$21.6 million).

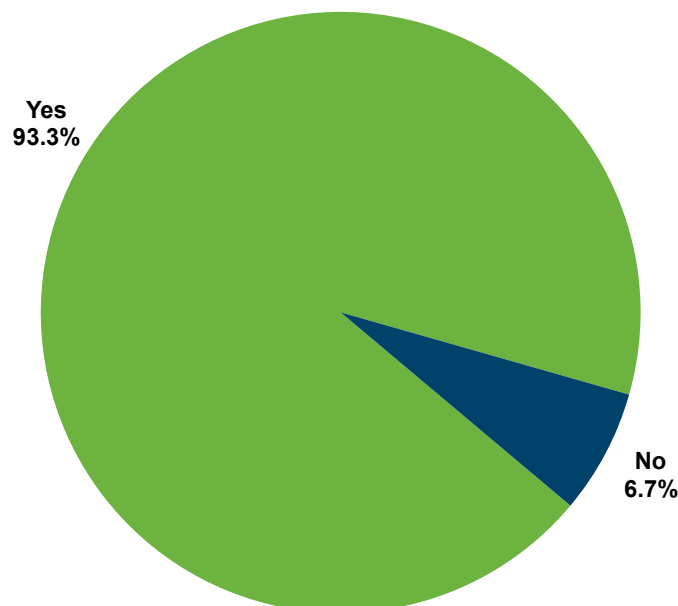
Offer Standalone Broadband



Source: 2019 NTCA–Broadband/Internet Availability Survey

- Nearly two-thirds of respondents (63.6%) report that they offer “standalone broadband,” up from 50.6% in 2018. The average number of subscribers to standalone broadband is 1,320. For this survey/report, “standalone broadband” was defined as broadband service with no *regulated* voice component for fixed broadband service (i.e., broadband offered by a respondent with *unregulated* interconnected VoIP service qualifies as standalone broadband, as would broadband provided with no voice service of any kind provided by the respondent).

Have IP Switching Facilities (e.g., “softswitches”) for Voice Traffic



Source: 2019 NTCA–Broadband/Internet Availability Survey

- Most respondents (93.3%) have IP switching facilities (e.g., “softswitches”) for voice traffic in their network.

Anchor Institution Connection and Speed

Anchor Institution	% Connected to Network via Fiber	% Can Receive Service of 25 Mbps or Greater
	2019 Mean	2019 Mean
Public libraries	72.9%	82.7%
Primary/secondary schools	80.2%	86.2%
Community colleges	30.2%	40.1%
Public safety entities (police, fire, etc.)	69.7%	82.1%
911 Call Centers	46.5%	54.7%
Hospitals/medical clinics	68.9%	75.8%

Source: 2019 NTCA–Broadband/Internet Availability Survey

- In 2019, eight in 10 (80.2%) primary/secondary schools are connected to respondents' networks via fiber and 86.2% of primary/secondary schools in respondents' service areas can receive service of 25 Mbps or greater.
- More than seven in 10 public libraries (72.9%) are connected to respondents' networks via fiber, with 82.7% being able to receive service of 25 Mbps or greater.
- Almost seven in 10 hospitals and medical clinics (68.9%) and public safety entities (69.7%) are connected to respondents' networks via fiber; 75.8% and 82.1% of those institutions, respectively, can receive service of 25 Mbps or greater.
- Community colleges are the least likely anchor institutions to be connected via fiber (30.2%) followed by 911 call centers (46.5%). Relatively modest proportions of those institutions (40.1% and 54.7%, respectively) can receive service of 25 Mbps or greater.

Number of Anchor Institutions in Service Area and Number Served With Fixed Broadband

Anchor Institution	Number in Service Area	Number Served
	2019 Mean	2019 Mean
Public libraries	3	3
Primary/secondary schools	8	8
Community colleges	2	2
Public safety entities (police, fire, etc.)	11	11
911 Call Centers	3	3
Hospitals/medical clinics	8	7

Source: 2019 NTCA–Broadband/Internet Availability Survey

- Respondents in 2019 report serving, on average, all eleven public safety entities (police, fire, etc.) and all eight primary/secondary schools located in their service area with fixed broadband.
- Respondents also indicate that their service areas include an average of three public libraries, two community colleges, three 911 call centers, and eight hospitals/medical clinics.
- Respondents serve nearly all (7 out of 8 on average) hospitals/medical clinics in their service area and all of the other anchor institutions located in their service area with fixed broadband.

Anchor Institution Average Speed

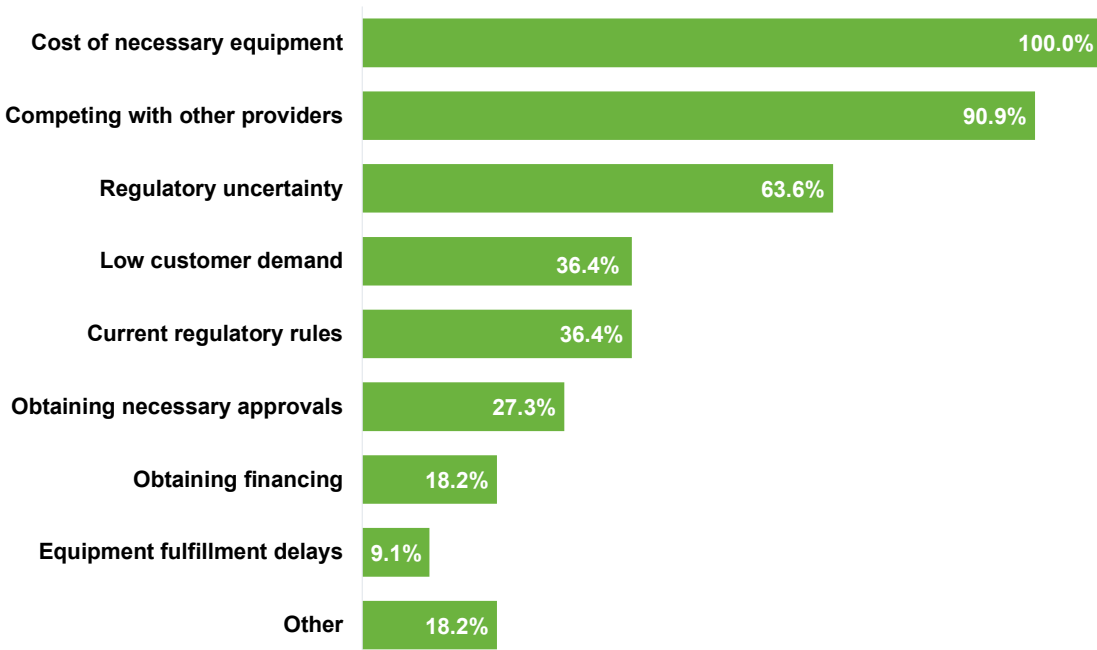
Fixed Voice and Broadband	2017 Mean	2018 Mean	2019 Mean
Average Maximum Speed of Broadband Available	1,030 Mbps	1,233 Mbps	1,350 Mbps
Average Speed of Broadband Purchased	127 Mbps	196 Mbps	147 Mbps

Source: 2019 NTCA–Broadband/Internet Availability Survey

- Respondents to the 2019 survey report that the average maximum broadband speed they make available to anchor institutions in their area is 1,350 Mbps (up from the 1,233 Mbps reported in 2018), and that the average broadband speed purchased by these institutions is 147 Mbps (compared with 196 Mbps in 2018 and 127 Mbps in 2017 as collected in NTCA’s 2017 Anchor Institution Survey).

SPECTRUM AND MOBILITY SERVICES

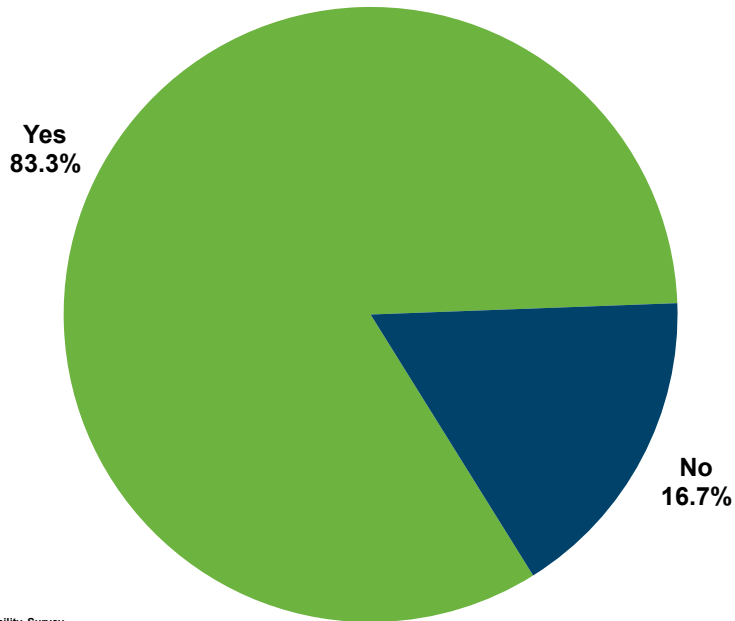
Primary Challenges in Offering a Mobile Broadband Data Service



Source: 2019 NTCA–Broadband/Internet Availability Survey

- For those respondents that offer a mobile broadband data service, the primary challenge cited is cost of necessary equipment (100%), followed closely by competing with other providers (90.9%) and regulatory uncertainty (63.6%). About one-third (36.4%) of respondents cite either current regulatory rules or low customer demand as a challenge, and about one-quarter report that they are challenged by obtaining necessary approvals (27.3%). (Respondents were permitted to select all challenges that applied to their operations.)
- Companies that offer a mobile broadband data service are challenged less often by equipment fulfillment delays (9.1%) or obtaining financing (18.2%).

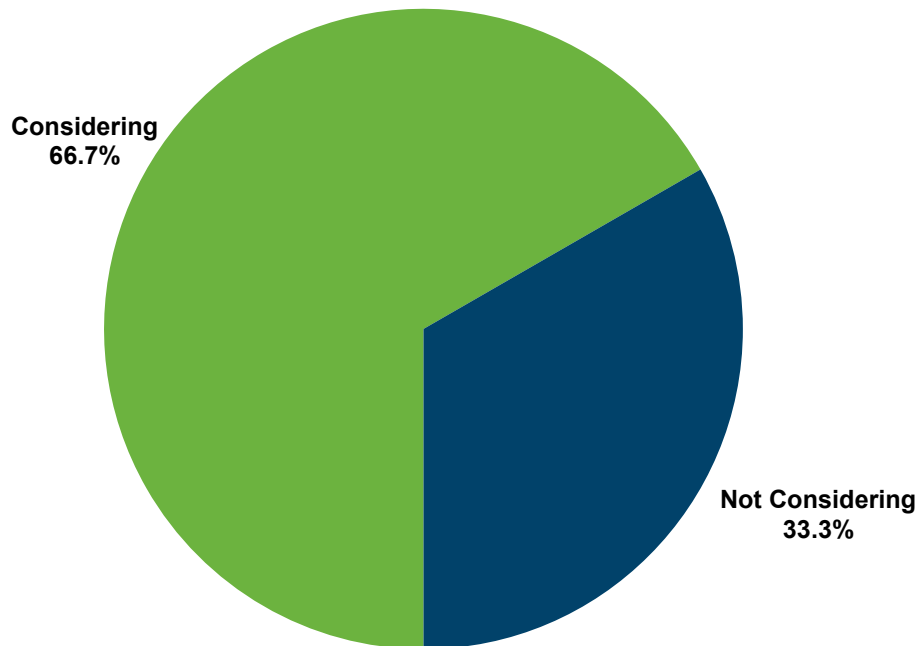
Have a Reciprocal Roaming Agreement for the Offering of Mobile Broadband Data Service



Source: 2019 NTCA–Broadband/Internet Availability Survey

- More than four-fifths (83.3%) of responding companies that offer a mobile broadband data service have a reciprocal roaming agreement for the offering of mobile broadband data service in 2019.

Considering Participation in Future Spectrum Auctions



Source: 2019 NTCA–Broadband/Internet Availability Survey

- Two-thirds (66.7%) of all respondents say they are considering participating in future spectrum auctions.

COMPETITION/MARKETING

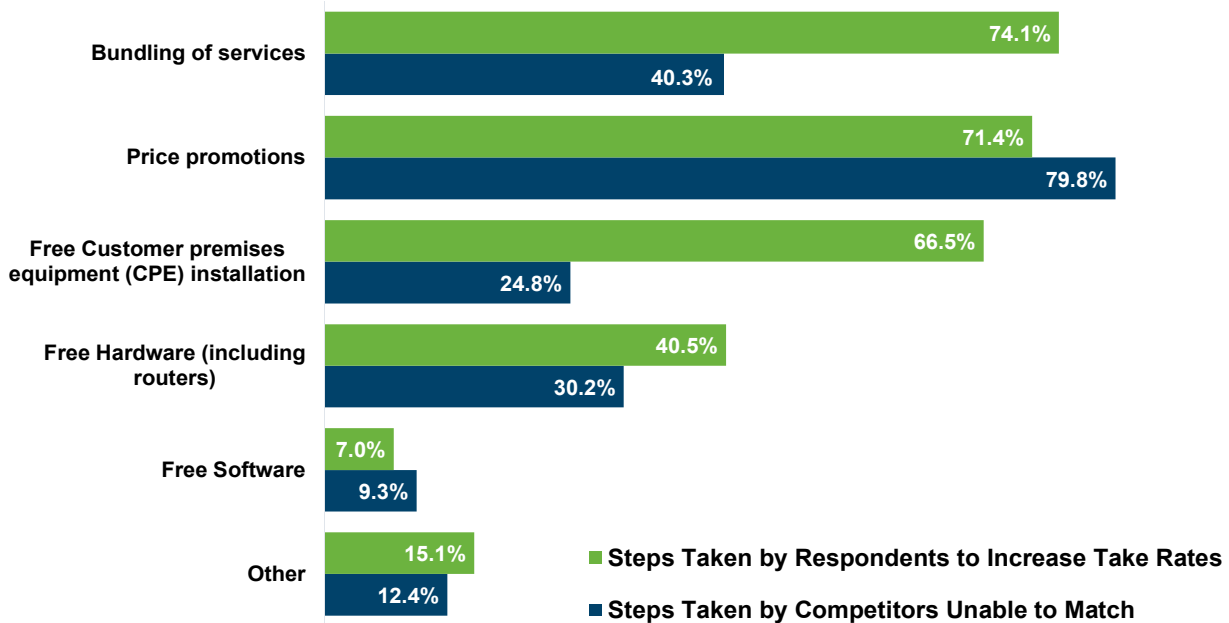
Competing Broadband Providers in Respondents' Service Area

Type of Providers	Percentage in Service Area	
	2018	2019
Cable Companies	60%	55%
Electric Utilities	18%	18%
Fixed Wireless ISPs (WISPs)	56%	62%

Source: 2019 NTCA–Broadband/Internet Availability Survey

- Respondents were asked to identify the kinds of competitors, if any, that served some limited portion of their service areas. About six in 10 respondents indicated that a fixed wireless internet provider (62%) or a cable company (55%) operated within a limited portion of their service areas. Fewer respondents identified electric utilities (18%) as offering broadband in some portion of their service areas.

Marketing Steps Taken



Source: 2019 NTCA–Broadband/Internet Availability Survey

- When asked about *steps taken to increase broadband take rates*, nearly three-quarters of companies (74.1%) reported bundling of services and 71.4% offered price promotions to attract more subscribers. Two-thirds used customer premises equipment (CPE) installation (66.5%), and four in 10 offered free hardware (including routers). Only a few companies offered free software (7.0%). In comparison, companies in 2018 offered bundling of services (80.2%) and hardware promotions (48.1%) more often than in 2019 to increase broadband take rates.
- When asked about *steps adopted by competitors that respondents are not able to match*, they indicate that their competitors have offered price promotions (79.8%) the most. Fewer respondents report that their competitors have adopted other marketing steps that they cannot match, such as bundling of services (40.3%), free hardware (including routers) (30.2%) or free customer premises equipment (CPE) installation (24.8%). These proportions are analogous to those reported in the 2018 survey.

FIBER DEPLOYMENT

Short-Term and Long-Term Fiber Deployment Strategy

SHORT-TERM STRATEGY

Deploy fiber to the node to X% of customers by year-end 2020

5.3%

Deploy fiber to the home to X% of customers by year-end 2020

54.3%

All fiber deployments are done

35.1%

No formal strategy

5.3%

70.8%:
Average % of
Customers to the Node

64.0%:
Average % of
Customers to the Home

LONG-TERM STRATEGY

Deploy fiber to the node to X% of customers by year-end 2025

4.4%

Deploy fiber to the home to X% of customers by year-end 2025

51.4%

All fiber deployments are done

38.8%

No formal strategy

5.5%

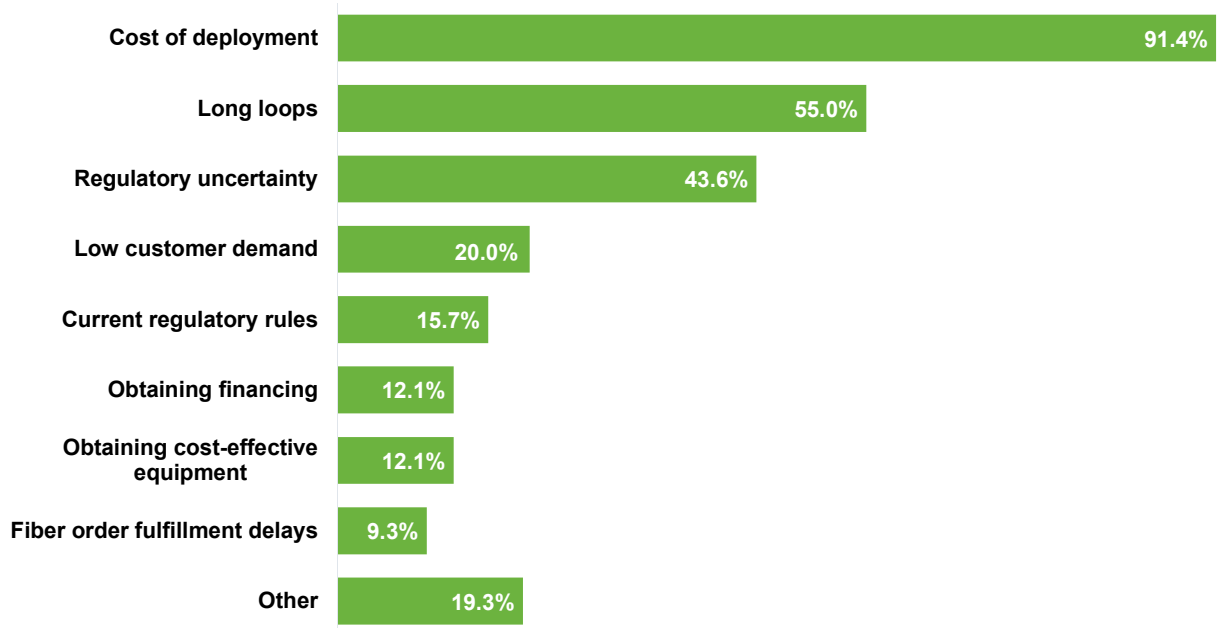
90.0%:
Average % of
Customers to the Node

85.4%:
Average % of
Customers to the Home

Source: 2019 NTCA—Broadband/Internet Availability Survey

- More than half of the responding companies (54.3%) report that their short-term fiber deployment strategy is to deploy fiber to the home to an average of 64.0% of customers by year-end 2020. Likewise, just over one-half (51.4%) of companies indicate that their long-term strategy is to deploy fiber to the home to an average of 85.4% customers by 2025. In 2018, 51.5% of respondents' long-term strategy was to deploy fiber to the home to an average of 78.1% of customers by 2020, while in 2016, 66.2% of respondents expected to provide fiber to the home to at least half of their customers by 2019.
- Approximately one-third of respondents (35.1%) reported that all fiber deployments are complete, compared with 32.1% saying the same in 2018 and 31.3% in 2016.
- Companies are far less likely to deploy fiber to the node as either a short-term (5.3%) or a long-term (4.4%) strategy. In 2018, 10.1% of respondents listed deploying fiber to the node as a short-term strategy while 7.9% listed it as a long-term strategy. In 2016, 39.3% of survey respondents expected to provide fiber to the node to more than 75% of their customers in the long term (year-end 2019).
- A small percentage of responding companies report not having either a formal short-term (5.3%) or long-term (5.5%) strategy. Those percentages are lower than reported in 2018, which were 9.5% and 8.5%, respectively.

Significant Barriers to Widespread Fiber Deployment



Source: 2019 NTCA–Broadband/Internet Availability Survey

- The most significant barrier to widespread fiber deployment is the cost of deployment, cited by 91.4% of companies (compared with 93.2% in 2018), followed by long loops (55.0%, up from 46.6% in 2018) and regulatory uncertainty (43.6%, down significantly from 59.4% in 2018).

INTERNET BACKBONE/MIDDLE MILE

Internet Backbone/Middle Mile

	2018 Mean	2019 Mean
Number of miles from primary internet backbone connection	117	111
Number of middle mile transport providers available	3	3

Source: 2019 NTCA–Broadband/Internet Availability Survey

- On average, respondents report being 111 miles from their primary internet backbone connection. They can choose to take service from an average of three middle mile transport providers, same as in 2018.

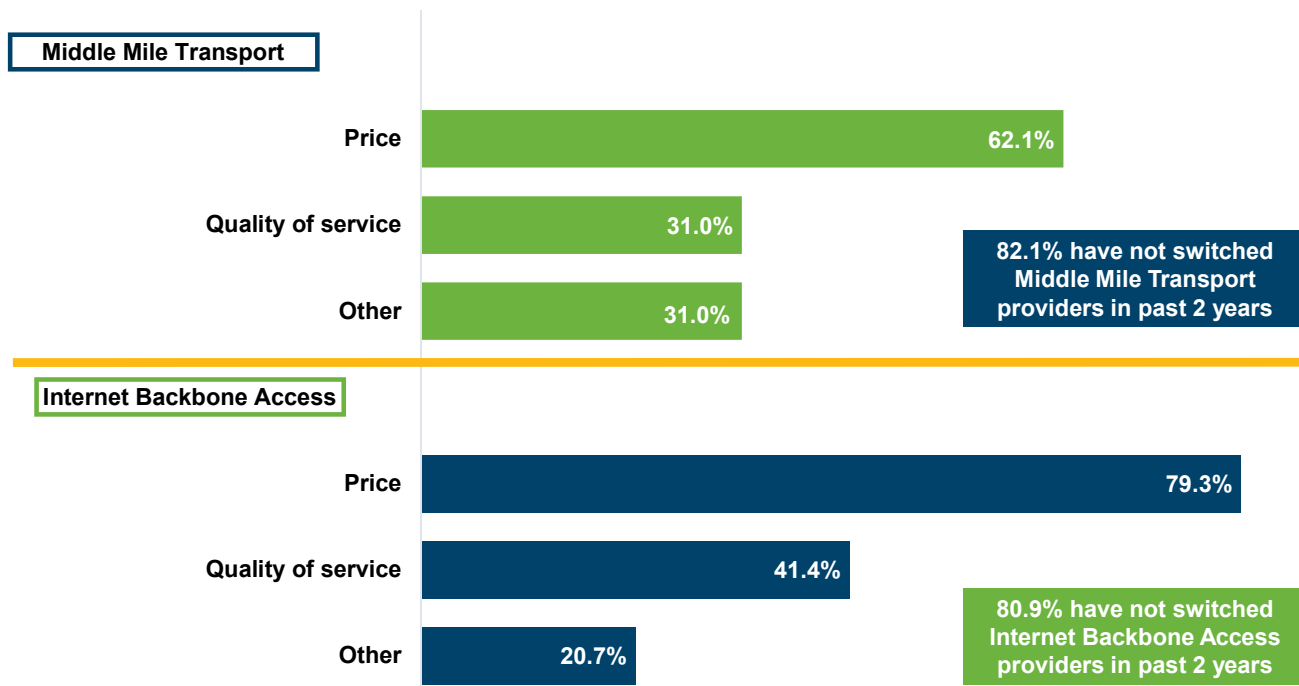
Middle Mile Bandwidth

	2018 Mean	2019 Mean
Middle mile bandwidth (in GB) currently subscribe to	12 GB	25 GB
Number of years expect this capacity to remain sufficient	2 Years	2 Years

Source: 2019 NTCA–Broadband/Internet Availability

- Companies responding to the 2019 survey report subscribing to an average of 25 GB of guaranteed middle mile bandwidth, compared to 12 GB in 2018.

Reasons for Switching Providers

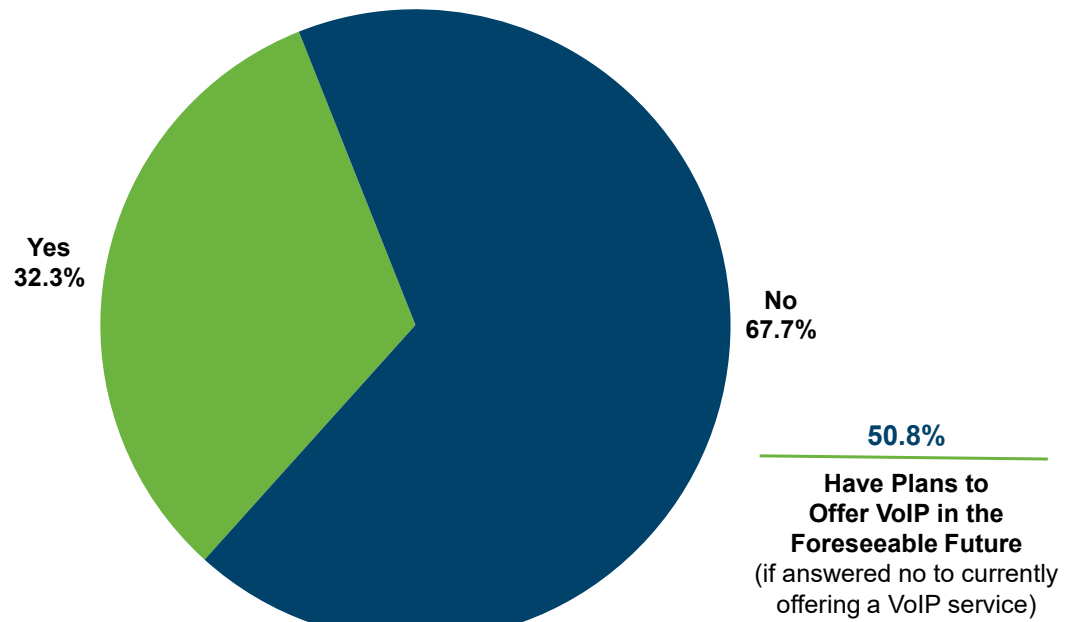


Source: 2019 NTCA–Broadband/Internet Availability Survey

- More than eight in 10 companies report that they have not switched middle mile transport providers (82.1%) or internet backbone access providers (80.9%) in the past two years.
- For those who have switched in the past two years, 62.1% named price as the reason for switching middle mile transport providers, which is lower than the 76.0% in 2018, but very similar to that reported in 2016 (63.0%). Price was also the main reason for switching internet backbone access providers. Nearly eight in 10 (79.3%) indicated price in 2019, which is lower than the past two surveys (85.2% in 2018 and 87.5% in 2016).
- Quality of service was the reason chosen for switching middle mile transport providers by 31.0% of respondents in 2019, which is higher than reported in 2018 (24.0%), and more similar to that reported in 2016 (29.6%). Quality of service was the reason for switching internet backbone access providers for 41.4% of respondents in 2019—higher than reported in the past two surveys (37.0% in 2018 and 25.0% in 2016).

VOICE OVER INTERNET PROTOCOL (VoIP)

Offer a VoIP Service



Source: 2019 NTCA-Broadband/Internet Availability Survey

- Nearly one-third (32.3%) of companies reported this year that they currently offer a VoIP service. Among those not offering VoIP in 2019, 50.8% indicated they have plans to offer it in the foreseeable future.

VIDEO

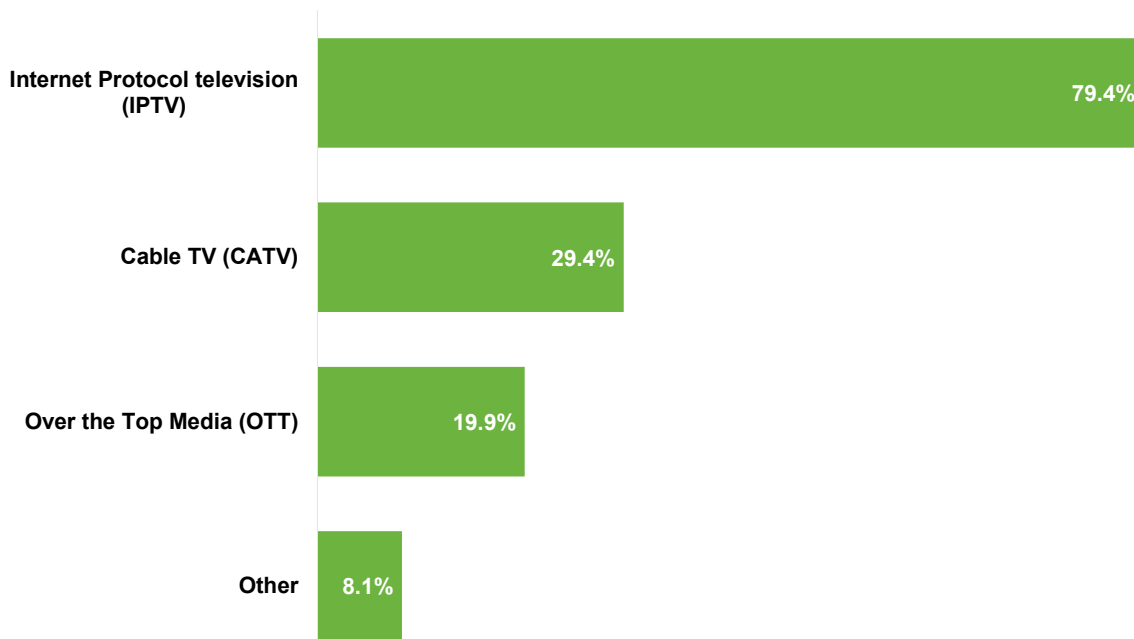
Video Service

	Mean
Number of customers that currently subscribe to video service	2,349
Number of homes passed or otherwise capable of connecting with video service	8,027

Source: 2019 NTCA–Broadband/Internet Availability Survey

- Responding companies in 2019 report that an average of 2,349 customers currently subscribe to their video service, while an average of 8,027 homes are passed or otherwise capable of connecting with video service.

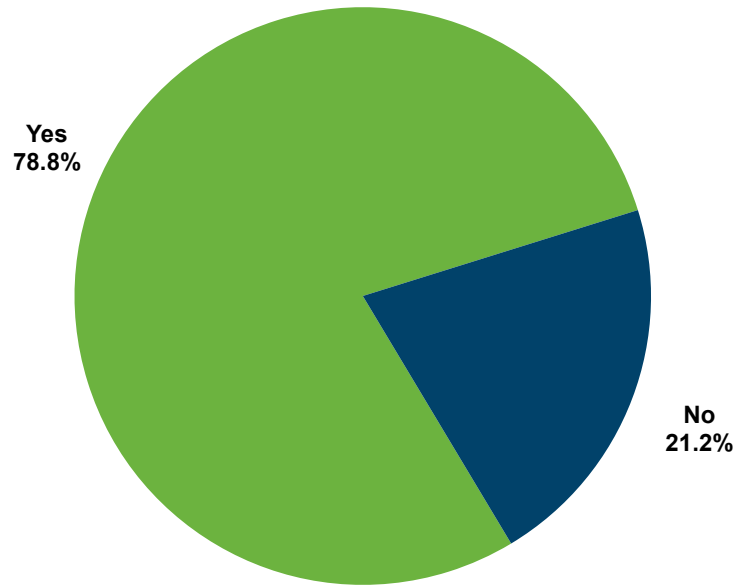
Types of Video Services Offered



Source: 2019 NTCA–Broadband/Internet Availability Survey

- Of the types of video services offered, respondents most frequently offer internet protocol television (IPTV), with 79.4% indicating that they offer this service to their customers.
- Additionally, cable TV (CATV) is offered by 29.4% of respondents, while 19.9% reported offering over the top media (OTT). Respondents were asked to select all of the types of video services that they offer. Some respondents reported offering multiple types of video services, resulting in the combined percentage of all types of video services offered exceeding 100%.

Customers Are Able to Watch Programming on Multiple Devices, Both Inside and Outside Homes



Source: 2019 NTCA–Broadband/Internet Availability Survey

- The percentage of respondents that indicated customers are able to watch programming on multiple devices (78.8%), both inside and outside their homes (e.g., “TV everywhere”) is similar to those reported in the past two surveys (77.2% in 2018 and 77.8% in 2016).

Retransmission Consent Fees

Percentage of total operating expenditures go toward retransmission consent fees: **34.8% (mean)**

In total dollars, amount retransmission consent fees increased in the last negotiating cycle: **\$53,969 (mean)**

Was total retransmission fee increase passed on to video subscribers:



Percentage of total operating expenditures go toward retransmission consent fees: **33.6% (mean)**

In total dollars, amount retransmission consent fees increased in the last negotiating cycle: **\$43,855 (mean)**

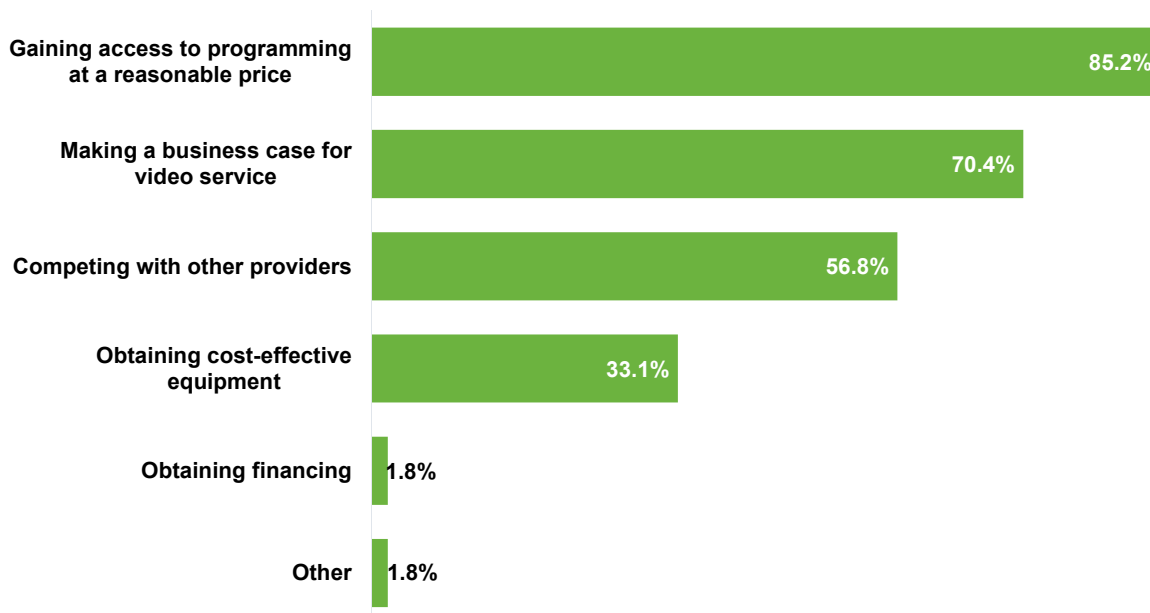
Was total retransmission fee increase passed on to video subscribers:



Source: 2019 NTCA–Broadband/Internet Availability Survey

- More than three-quarters (76.5%) of responding companies report that they passed the increase in retransmission consent fees on to their subscribers, which is higher than in 2018 (68.5%). Those that are phasing in an increase is lower in 2019 (13.4%) than in 2018 (16.5%).

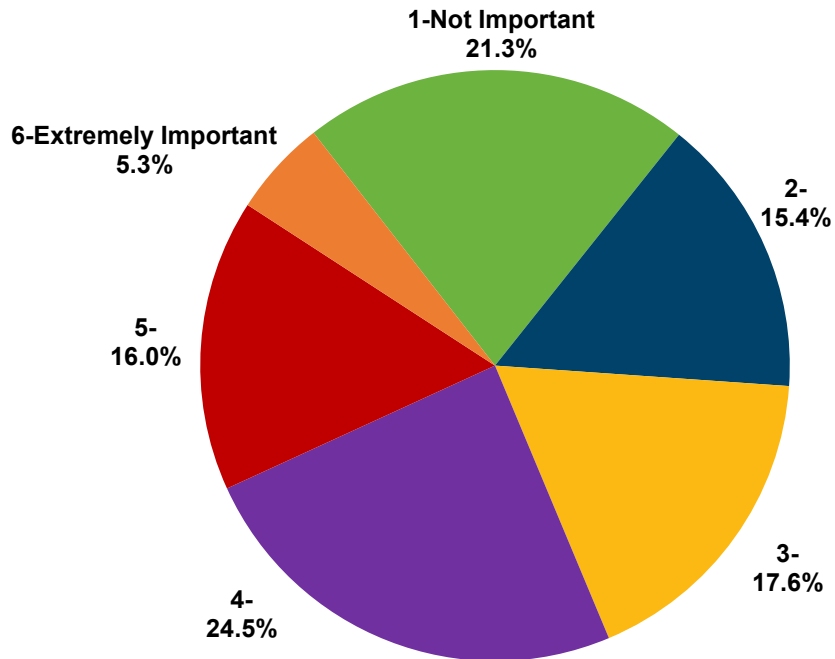
Barriers to Providing Video Service



Source: 2019 NTCA–Broadband/Internet Availability Survey

- Companies' largest barrier to providing video service is gaining access to programming at a reasonable price (85.2%). This is lower than reported in the past two surveys (96.2%, and 97.6%, respectively). Seven in 10 (70.4%) indicated that making a business case for video service was a barrier, which is higher than reported on the last two surveys (65.4% in 2018 and 61.4% in 2016). Competing with other providers was the second most frequently cited barrier in 2018 (68.4%) and 2016 (75.9%) but is the third most frequently cited barrier in 2019 (reported by 56.8% of responding companies). One-third (33.1%) indicate obtaining cost-effective equipment was a barrier to providing video service this year.

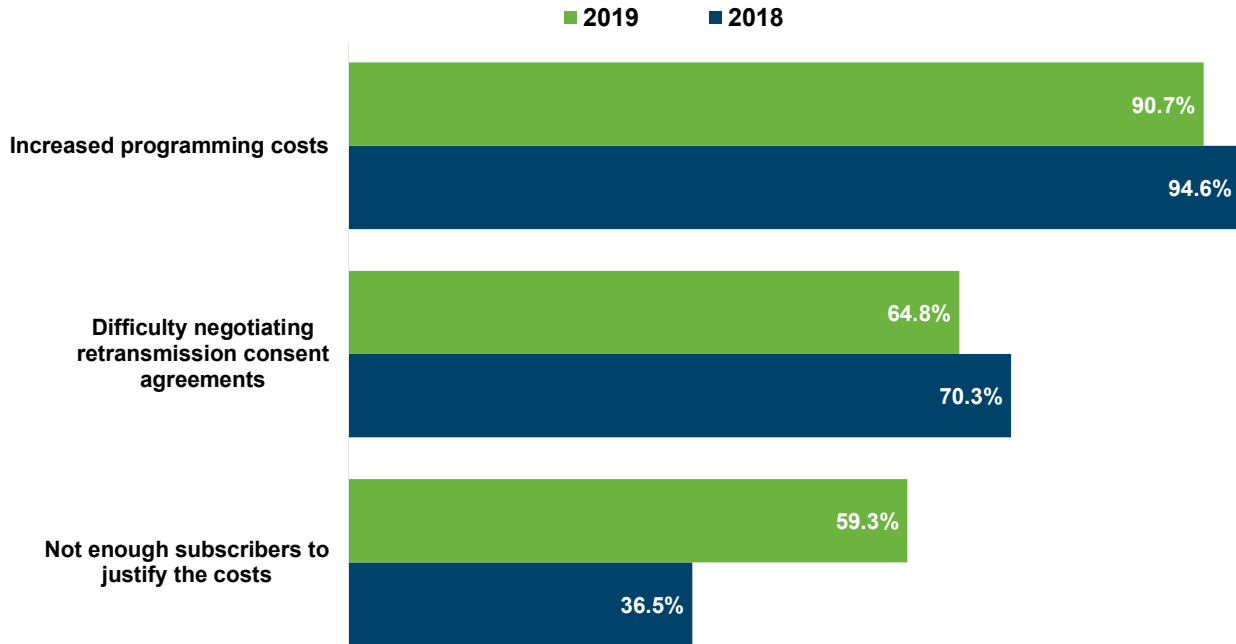
Importance of Having Video Offering for Customers



Source: 2019 NTCA–Broadband/Internet Availability Survey

- On a scale of 1-6, where 1 is “not important” and 6 is “extremely important,” the importance of having a video offering for customers was rated as a “5” or a “6” by 21.3% of respondents, while the same proportion (21.3%) indicated that it was not important to have a video offering (a rating of “1”).

Reasons for Discontinuing Video Service



Source: 2019 NTCA–Broadband/Internet Availability Survey

- The main reason respondents cite for discontinuing or considering discontinuing video service is increased programming costs (90.7%), down slightly from the 94.6% reported in 2018. Approximately two-thirds (64.8%) attribute this decision to difficulty negotiating retransmission consent agreements – down compared to 2018 when 70.3% of respondents indicated the same. Nearly six in 10 (59.3%) reported this year that they do not have enough subscribers to justify the costs – which is significantly higher than the one-third (36.5%) reporting the same in 2018.

CONCLUSIONS

- **Technology continues to improve the connectivity of rural consumers to the outside world.** NTCA members are deploying and seeing consumers respond favorably to the availability of better broadband. The percentage of residential customers reported as served by fiber-to-the-home deployments is up 22.5 percentage points just in the last three years (from 41.3% of residential broadband customers in 2016 to 63.8% in 2019). As a result, broadband speeds made available by NTCA members to customers have increased, with more than 75% of respondents' customers having access to 25 Mbps or higher broadband speed, as compared to 70.6% in 2018; NTCA members report that more than 60% of subscribers now have access to 100 Mbps broadband or better. In turn, NTCA members report that subscribers are migrating over time to higher speeds, with an increase of more than 30 percentage points just over the last 3 years moving to 25 Mbps broadband or higher; in 2019, NTCA members report that 50.0% of customers are subscribing to a maximum speed of 25 Mbps or higher, compared to just 17% in 2016.
- **However, NTCA members still face challenges to advance and sustain broadband in rural America.** About one-quarter (24.7%) of the rural population served by survey respondents remain without access to 25 Mbps broadband service, and just over one-fifth (22.7%) of respondents' customers continue to be served via aging copper loops. Economic concerns remain a challenge in reaching those underserved customers, with survey respondents indicating that it would cost on average nearly \$22 million to bring all customers (who are not already at the stated level of fixed broadband service) up to 25 Mbps downstream speeds and nearly \$29 million to bring all customers to 100 Mbps downstream speeds. It should be noted, however, that these cost figures have gone down from the levels reported in 2018, \$28 million and \$38 million, respectively, presumably as a result of ongoing investments already made over the past year to advance fiber deeper into rural areas.
- **NTCA members provide critically important broadband service to anchor institutions in their communities.** Respondents provide robust levels of fixed broadband service to all of the public libraries, community colleges, primary/secondary schools, public safety entities (police, fire department, etc.) and 911 call centers located within their communities. They also provide fixed broadband service to nearly all hospitals/medical clinics in their communities. These are critical lifelines for residents of their community and benefit the overall health and well-being of residents. The average maximum speed of broadband available to anchor institutions in respondents' service area has increased from 1,233 Mbps in 2018 to 1,350 Mbps in 2019.
- **Cost of necessary equipment and competition are the primary challenges for those offering mobile services.** Member companies face challenges in offering a mobile broadband data service, with the primary challenge being cost of necessary equipment (100%), followed by competition (90.9%). Other significant challenges include regulatory uncertainty (63.6%) and low customer demand or current regulatory rules (36.4% each).

- **Bundling of services outperforms price promotions as the most adopted marketing strategy.** More than seven in 10 respondents (74.1%) have used bundling of services or price promotions to attract new subscribers. However, nearly eight in 10 (79.8%) indicate that their competition has used price promotions that they have been unable to match, and 40.3% say the same about bundling of services.
- **Offering video is becoming less important in 2019 as companies face significant barriers in providing video service to their customers.** About one-fifth of respondents (21.3%) indicate that it is important or extremely important to offer video service to their customers, down from approximately one-third (32.4%) indicating the same in 2018. Gaining access to programming at a reasonable price remains the most prevalent barrier that members face in providing this service, followed by making a business case for video service. Likewise, those who are considering discontinuing video service mainly attribute this decision to increased programming costs, followed by difficulty in negotiating retransmission consent agreements.