

July 26, 2017

VIA ECFS

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

Re: In re Connect America Fund, WC Docket 10-90

Dear Ms. Dortch:

On July 24, 2017, Robert Hance, President and Chief Executive Officer, Midwest Energy Cooperative; Dave Allen, Vice President of Regulatory Compliance & Community Development, Midwest Energy Cooperative; Lynn Hodges, Chief Operating Officer at Ralls Technologies LLC; Scott Bowers, Vice President of Government Relations, Indiana Electric Cooperatives; Ron Holcomb, Chief Executive Officer, Tipmont Rural Electric Membership Corporation; Robert Baker, member, Tipmont Rural Electric Membership Corporation; Randy Klindt, General Manager, OzarksGo, LLC; Andy Burger, General Manager and Vice President of Operations, Co-Mo Connect; Brett Kilbourne, Vice President, Policy and General Counsel, Utilities Technology Council (“UTC”); and Elliot Tarloff and myself of Jenner & Block LLP (collectively on behalf of the entire “Rural Coalition,” including NTCA—The Rural Broadband Association (“NTCA”) and National Rural Electric Cooperative Association (“NRECA”)) participated in separate meetings with Chairman Ajit Pai and Jay Schwarz, Wireline Advisor to Chairman Pai; Commissioner Mignon Clyburn, Jeremy Greenberg, Intern to Commissioner Clyburn, and David Grossman, Chief of Staff and Media Policy Advisor to Commissioner Clyburn; and Amy Bender, Wireline Advisor to Commissioner O’Rielly. At each of these meetings, attendees discussed the Connect America Fund (“CAF”) Phase II Auction draft Public Notice circulated by the Chairman and released on July 13, 2017.<sup>1</sup>

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<sup>1</sup> See FCC Fact Sheet, Connect America Fund Phase II Auction (Auction 903), Public Notice – AU Docket No. 17-182 (rel. July 13, 2017), [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2017/db0713/DOC-345792A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0713/DOC-345792A1.pdf) (“Draft PN”).

More specifically, in each meeting, we explained that Rural Coalition members are deploying broadband networks in response to demand from their consumers.<sup>2</sup> While many Rural Coalition members, including rural telcos and electric coops such as OzarksGo, Co-Mo Connect and Midwest Energy, have made tremendous progress deploying broadband, there are certain high-cost areas that they simply cannot reach without support. The Rural Coalition's members are thus looking to participate in the CAF Phase II Auction to respond to the demand in their communities for broadband service and, in particular, to connect high cost unserved areas.

The Rural Coalition expressed its appreciation that the Commission has moved forward with the draft Public Notice, bringing us one step closer to connecting unserved areas. The Rural Coalition did express concern about the complexity of the auction, which has the potential to be as complicated as the incentive auction and may thus present difficulties for smaller providers.<sup>3</sup> These difficulties will only be amplified—and may preclude meaningful participation by all but the larger providers—if the anti-collusion rules prevent multiple providers from relying on the same consultant or consultants during the auction process.<sup>4</sup> The Rural Coalition encouraged the Commission to ensure that the anti-collusion rules and any new guidance published for the CAF Phase II Auction are flexible enough to allow such arrangements.<sup>5</sup>

In addition, the Rural Coalition supports many aspects of the procedures in the draft Public Notice designed to ensure accountability, but encouraged the Commission to seek comment on additional ways to ensure that as many locations as possible are connected in this auction—and also to take further measures to prevent waste, fraud, and abuse.

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<sup>2</sup> As an example, Robert Hance and Dave Allen provided the attached e-mail that the Midwest Energy Cooperative recently received from a customer inquiring as to the timeline for connecting fiber to the customer's home, and noting the difficulties the customer was experiencing selling the house—as necessitated by the customer's failing health—without a fiber connection.

<sup>3</sup> See, e.g., *Draft PN* ¶¶ 71-74 (generally describing auction procedures with a “base clock percentage” that “begins at a high level, implying a support amount that is equal to or close to the full reserve price” and which “decrements” in bidding rounds until a “clearing round,” after which bidding continues for areas where there are competing bids, until a winning bidder receives support “in amounts at least as high, because of the second-price rule, as the support amounts corresponding to their bid percentages”).

<sup>4</sup> See 47 C.F.R. § 1.21002(b) (prohibiting communications regarding applicants' bids or bidding strategies unless such applicants are members of a disclosed joint bidding arrangement); cf. *Draft PN* ¶ 20 (proposing to prohibit separate applicants that are commonly controlled or parties to a joint bidding arrangement from bidding in any of the same states). See generally *Guidance Regarding the Prohibition of Certain Communications During the Incentive Auction, Auction 1000*, Public Notice, 30 FCC Rcd 10,794, 10,798-800 ¶¶ 12-15 (2015) (advising on how to conduct communications with third parties, including consultants and lawyers, to prevent a third party from becoming a conduit for communicating bids or bidding strategies to covered parties, in contravention of anti-collusion rules).

<sup>5</sup> See *Draft PN* ¶ 4.

*First*, the Rural Coalition noted that the CAF Phase II Auction, as currently designed, is likely to leave a significant fraction of the entire budget unspent. This outcome would be inconsistent with the goal of universal service because it would leave areas unserved for which there would be money remaining in the budget to support service. The Rural Coalition thus encourages the Commission to seek comment on whether the auction *procedures* should be designed to ensure that the entire budget is utilized. If so, the Commission should ask what additional procedures or changes would be necessary to ensure that none of the \$1.98 billion budget remains unallocated at the conclusion of the CAF Phase II Auction.

There are many ways in which the Commission can ensure that the entire budget is allocated. The Rural Coalition encourages the Commission to ask the following questions in the CAF Phase II Auction PN to evaluate ways to ensure money is not left on the table. For example, should the Commission consider a smaller decrement of the base percentage clock? If there is a round in which bidders from the prior round drop in two or more regions, causing the requested support to fall below the budget, should the Commission award the available support within the budget based on a random number assignment to a bid from the prior round? If such a round occurs in which multiple regions are affected, should the Commission use a search algorithm to maximize aggregate scores subject to the budget constraint, using random numbers to break ties? Should the Commission adopt a roll-back-bid rule, and, if so, should it permit roll-back bidders to reject roll-back awards? Additionally, the Commission should seek comment on running re-auctions to allocate unspent funds in an initial auction.

*Second*, while the Rural Coalition strongly supports the Commission's efforts to implement a rigorous upfront screening of applicants as part of the CAF Phase II Auction short form to ensure that bidders are eligible to bid in the relevant tiers and latency, the Rural Coalition believes that additional protections are necessary.

The draft Public Notice correctly seeks to ensure that satellite providers have the "required authorizations and adequate access to spectrum" consistent with their applications and public interest obligations.<sup>6</sup> The Rural Coalition also supports the proposed requirement that each provider have the technical and operational qualifications "to meet [its] public interest obligations in each tier *and in each area for which it seeks support*."<sup>7</sup> To fulfill the intent behind this requirement, however, the Commission should adopt procedures limiting each satellite provider to bid on only a total number of locations in a given round that it has capacity to serve. Absent such safeguards, a provider could bid on all eligible locations even if it has capacity to serve only 25% of such locations. While the provider would face ex post default penalties if it

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<sup>6</sup> *Id.* ¶ 41; *see also id.* App. A, Proposed Auction 903 Short-Form Application Operational Questions ("If the applicant is using satellite technologies, describe the total satellite capacity available and possible methods the applicant will utilize to assign bandwidth and capacity for each spot beam.").

<sup>7</sup> *Id.* ¶ 33 (emphasis added).

prevailed on all of its bids in this scenario, the auction nonetheless would be complete, and unserved customers would remain unserved.

As a result, the Rural Coalition encourages the Commission to seek comment on permitting satellite providers to bid on a total number locations up to their available capacity to serve in any given tier. Satellite providers would be free, as would all qualified bidders, to change geographic locations between rounds to target areas that are unserved. However, such a requirement would ensure that if a provider bids in a round, it is capable of delivering service to customers in all geographic areas where it is bidding.

Similarly, the Rural Coalition appreciates the requirement in the draft Public Notice that other radiofrequency spectrum providers demonstrate that they have sufficient spectrum resources to deliver service,<sup>8</sup> but requested that the Commission require more than a mere statement of spectrum resources and a certification as to such providers' operational and technical capabilities at the short-form stage of review.<sup>9</sup> The Rural Coalition expressed the specific concern that providers might prevail at auction but ultimately fail to provide service to 95% of the locations at their performance requirements and other public interest obligations, to the detriment of consumers. The Rural Coalition therefore requested the Commission seek comment on requiring bidders using radiofrequency spectrum to provide propagation maps with their short-form applications. Such safeguards are necessary upfront to prevent ineligible bidders from skewing the auction results and ultimately resulting in potential fraud if they cannot deliver. Providers seriously evaluating bidding in a given area will perform the necessary due diligence to calculate the subsidy they need to provide service consistent with their public interest obligations, so the submission of such information should not be burdensome. Members of the Rural Coalition are willing to provide similar information to the extent necessary. To minimize burdens on staff, the Rural Coalition proposed that the Universal Service Administrative Company ("USAC") be directed to hire an independent third party to review the technical aspects of short-form applications. Such review should be completed within 30-60 days.<sup>10</sup>

*Third*, the Rural Coalition strongly supports the CAF Phase II Auction procedures requirement that all service providers must assume a subscription rate of at least 70 percent when

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<sup>8</sup> See *id.* ¶¶ 38-40 (discussing short-form requirements for providers that plan to use radiofrequency spectrum to provide service).

<sup>9</sup> See *id.* ¶¶ 33-36 (discussing short-form requirements regarding operational information).

<sup>10</sup> See Letter from Rebekah Goodheart, Counsel to the Rural Coalition, to Marlene Dortch, Secretary, Federal Communications Commission, WC Docket No. 10-90, at 9 (Jan. 19, 2017), ("Because the review is necessary to protect the integrity of the fund, the Universal Service Administrative Company ('USAC') should be directed to hire an independent third party to review the short-form applications within 60 days given the scope and potential volume of the nationwide auction.").

determining whether they can meet the obligations for the elected performance tier and latency combinations.<sup>11</sup> As the item notes, this rate is consistent with the assumptions made in the cost model when calculating the amount of support made available for the auction.<sup>12</sup> Moreover, as described by Coalition members like Co-Mo Connect and Ralls County Electric Cooperative, this assumption has been borne out by the experiences of many providers in rural areas, many of which have achieved a take rate above 70 percent. The Rural Coalition also provided a copy of the most recent survey by NTCA, demonstrating that its members, too, see a 70 percent subscription rate.<sup>13</sup> Not only is 70 percent a reasonably achievable take rate for rural areas based on the experience of Rural Coalition members, but allowing other technologies to assume a lower subscription rate could leave consumers stranded if providers deploy networks that are unable to serve all customers in the area.<sup>14</sup> In addition, allowing different providers to assume different subscription rates a result could result in an unfair auction as bids assuming a lower subscription rate would not reflect the true cost of service. Thus, such bids would be artificially low and would likely inhibit a truly competitive auction.

Please contact me if you have any questions regarding these matters.

Sincerely,

/s/ Rebekah P. Goodheart

Rebekah P. Goodheart

Attachments

cc: Chairman Ajit Pai  
Commissioner Mignon Clyburn  
Jay Schwarz

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<sup>11</sup> See Draft PN ¶ 36.

<sup>12</sup> See *id.* (“This subscription rate is consistent with the assumptions made in the CAM when calculating the amount of support made available.” (citing *In re Connect America Fund*, Report and Order, 29 FCC Rcd 3964, 4040 ¶ 179 (WCB 2014))); see also *In re Connect America Fund*, Memorandum Opinion and Order 29 FCC Rcd 14,092, 14,096-97 ¶¶ 11-13 (2014); *Wireline Competition Bureau Announces Availability of Version 4.1 of the Connect America Fund Phase II Cost Model*, Public Notice, 29 FCC Rcd 3088, 3090 (2014).

<sup>13</sup> See NTCA-The Rural Broadband Association, *NCTA 2015 Broadband/Internet Availability Survey Report 4*, 7 (July 2016), <https://www.ntca.org/images/stories/Documents/Advocacy/SurveyReports/2015ntcabroadbandsurveyreport.pdf>. A copy of the report is attached herewith.

<sup>14</sup> See Rebekah Goodheart et al., *supra* note 10, at 8 (“Because winning bidders will become the eligible telecommunications carriers, and price-cap incumbents will receive forbearance from obligations in these [census] blocks, the winning bidder has a duty to serve all households in the relevant geographic area.” (footnote number omitted)).

Marlene H. Dortch  
July 26, 2017  
Page 6

David Grossman  
Amy Bender  
Jeremy Greenberg

**From:** [REDACTED]  
**Sent:** Wednesday, July 05, 2017 4:14 PM  
**To:** Harry Gentz; Arell Chapman  
**Subject:** Fiber Optic in Lenawee County

Good Afternoon,

Please forgive the interruption in your day, but I am trying to get information that I cannot seem to get by calling customer service. I spoke with the CEO at a local meeting in Blissfield at least a year ago, where I was very excited to hear about the fiber optic. In fact, I am certain he would remember me, as I had a lot to say on the subject. – No worries...it was a good exchange. – Unfortunately, I've been unable to find out when we will actually see it coming to Lenawee County. However, having spent much of my career assisting corporate Officers and Directors, I'm pretty sure you would have the answers I seek.

We live on Chase Road in Raisin Township; or, as I like to refer to it: The Land That Technology Forgot. Wireless Internet signals do not penetrate the rolling, wooded terrain. We are relegated to using HughesNet at a rate of over \$75 per month for a lower end package at our home. Supposedly, Frontier could service us but are out of data ports for our area. I say supposedly, as they have twice before been unable to make a connection for us. We literally are at your mercy!

The reason I am seeking a timing on this is because we are having to sell this place due to my health; and I strongly believe the Internet coverage is going to be a deal breaker for most prospective buyers. Even being two doors down from an awesome winery may not be enough to counteract such a negative. So any information either of you can provide would be greatly appreciated.

Thanks much,

[REDACTED]

Good Afternoon [REDACTED],

I apologize I haven't responded before now. I have no sufficient excuse, and I appreciate your patience. Like yourself, I am very interested in when we can provide internet services to our members within SE Michigan. I am a computer professional, and affordable, fast, internet connectivity is critical to me.

The most up to date details about the internet project are always available at our website <https://www.teamfiber.com/>.

While this doesn't immediately help you, or me, I am excited to share the team at our cooperative is achieving all of the goals as defined in the SW Michigan internet project. The SW internet project runs from 2015 to 2019 and has been very successful and is on schedule. We have over 35,000 members, which about 90% of members are located in SW Michigan.

It is difficult to hear about services years before they are available, but the cooperative also wants to make sure every member is aware of the services their cooperative is investing to provide. At this time, internet services for SE Michigan members are not expected to occur until after the 2015-2019 project is completed. I expect the project timelines for the SE project to become available once the SW project nears completion in 2019.

The Board and management discuss the project every meeting. We also review communications we are providing, and need to provide, the members. I will share your questions and concerns about when you will receive internet services and how we can keep the members better informed on the project timelines.

I wish you well in the sale of your home. I am sorry to hear you need to sell it due to your health. I will keep you in my thoughts and prayers.

Please check our website from time to time, as well as make sure to read our member publications to hear of the latest project timelines.

Thank you for contacting me.

Arell Chapman



# NTCA 2015 BROADBAND/INTERNET AVAILABILITY SURVEY REPORT

July 2016

**DISCLAIMER:** Data from the survey has been presented as reported.

*To get more information on this report please contact Rick Schadelbauer at NTCA (703-351-2019, [rschadelbauer@ntca.org](mailto:rschadelbauer@ntca.org)).*

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## EXECUTIVE SUMMARY

For a decade and a half, NTCA–The Rural Broadband Association has conducted its annual Broadband/Internet Availability Survey to gauge the deployment rates of advanced services by its member companies. In the spring of 2016, NTCA sent an electronic survey form to each of the companies (as reflected at the holding company level) in NTCA’s e-mail database; 131 members (22%) responded.

One hundred percent of the 2015 survey respondents offer broadband to some part of their customer bases, compared with the 58% of the 2000 survey respondents who offered the then-lower definition of broadband service.<sup>1</sup> Respondents indicated that they use a variety of technologies within their respective serving areas to provide at least basic levels of broadband to their customers. Forty-nine percent of respondents’ broadband customers are served via fiber to the home (FTTH), 29% via copper loops, 15% cable modem, 6% fiber to the node (FTTN), 1% licensed and unlicensed fixed wireless, and 0.1% satellite.

Fifty-five percent of those survey respondents currently deploying fiber serve at least 50% of their customers with FTTH, while 26% serve 20% of their customers or less via such technology. Seventy-four percent of survey respondents indicated they had a long-term fiber deployment strategy. Fifty percent of those respondents with a fiber deployment strategy plan to offer fiber to the node to more than 75% of their customers by year-end 2018, while 78% plan to offer fiber to the home to at least 50% of their customers over the same time frame. An additional 40% have already completed fiber deployments to all customers.

Deployment cost remains the most significant barrier to widespread deployment of fiber, followed by regulatory uncertainty, long loops, current regulatory rules, obtaining financing, low customer demand, fiber order fulfillment delays, and obtaining cost-effective equipment. Throughout the history of the survey, deployment cost has been respondents’ most significant concern.

Approximately 0.3% of respondents’ customers can receive a maximum downstream speed of between 768 kbps and 1.0 megabit per second (Mbps), 0.4% 1.0 to 1.5 Mbps, 1.6% 1.5 to 3.0 Mbps, 3.4% 3.0 to 4.0 Mbps, 2.3% 4.0 to 6.0 Mbps, 7.0% 6.0 to 10.0 Mbps, 13.7% 10.0 Mbps to 25.0 Mbps, and 71.3% greater than 25.0 Mbps.

Nearly thirty-nine percent of survey respondents’ customers taking broadband subscribe to service greater than or equal to 10 Mbps downstream. The next most popular speed

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<sup>1</sup> For the purpose of the 2015 survey, broadband was defined as throughput of at least 3 Mbps in one direction. This was an update from earlier NTCA Broadband Surveys, which defined broadband as throughput of at least 768 kbps (from 2009 through 2013) or 200 kbps (from 2000 through 2008) in one direction.

tiers are 6.0 Mbps to 10.0 Mbps (9.6%), and 4.0 Mbps to 6.0 Mbps (6.5%). The overall take rate for broadband service is 73% (up slightly from 70% last year).

The average respondent is 78 miles from its primary Internet connection; the median respondent is 48 miles away. Ninety-one percent of those who recently changed backbone providers did so for price reasons. Seventy-nine percent of respondents indicated they are generally satisfied with their current backbone access provider, while 21% are generally dissatisfied.

Survey respondents indicated they face some type of competition in selected portions of their serving areas from national Internet service providers (ISPs), cable companies and fixed and/or mobile wireless Internet service providers (WISPs.) Respondents are taking numerous marketing steps to increase broadband take rates, including bundling of services, free customer premise equipment installation, price promotions, free introductory service, free modems, and free education and training. Eighty-one percent of respondents find it difficult to compete with price promotions offered by competitors.

Thirty-one percent of respondents currently offer voice over Internet protocol (VoIP) service, unchanged from last year. Thirty-eight percent of respondents not currently offering VoIP have plans to do so in the foreseeable future, down from 48% last year. Seventy-two percent of respondents offer video service to their customers, down slightly from 73% last year.

## **INTRODUCTION**

In the spring of 2016, NTCA–The Rural Broadband Association surveyed its members on their activities in the areas of providing broadband services and Internet availability to their members/customers. NTCA is a national association representing more than 850 rural rate of return regulated operating company telecommunications providers in 45 states. All NTCA members are small carriers that are “rural telephone companies” as defined in the Communications Act of 1934, as amended by the Telecommunications Act of 1996. Only four NTCA member companies serve 40,000 lines or more; the largest serves just over 65,000. Population density in most member service areas is generally in the 1 to 5 customers per square mile range.

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.<sup>2</sup> This year’s survey asked about technologies used to provide broadband service, broadband availability and subscription rates, prices charged, quantity and type of competition, broadband marketing

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<sup>2</sup> Copies of this and previous NTCA survey reports may be downloaded from the NTCA web site, [www.ntca.org](http://www.ntca.org).

efforts, fiber deployment, emerging technologies, Internet backbone connections, finance and availability of capital. The survey also provided an opportunity for respondents to provide any specific comments they wished to share.

## **OVERVIEW OF SURVEY**

The 2015 NTCA Broadband/Internet Availability Survey was conducted online. Every effort was made to minimize the reporting burden on the survey respondents.

The survey was composed of general questions about the respondent's current operations, competition/marketing and current and planned fiber deployment. Additional questions dealt with the Internet backbone, voice over Internet protocol (VoIP) and video. The survey also provided an opportunity for respondents to offer any miscellaneous thoughts.

## **SURVEY RESULTS**

The survey URL for each part of the survey was distributed via e-mail to all member companies in NTCA's e-mail database. The message contained instructions for online access to the survey. Responses were received from 131 member companies, a 22% response rate.<sup>3</sup>

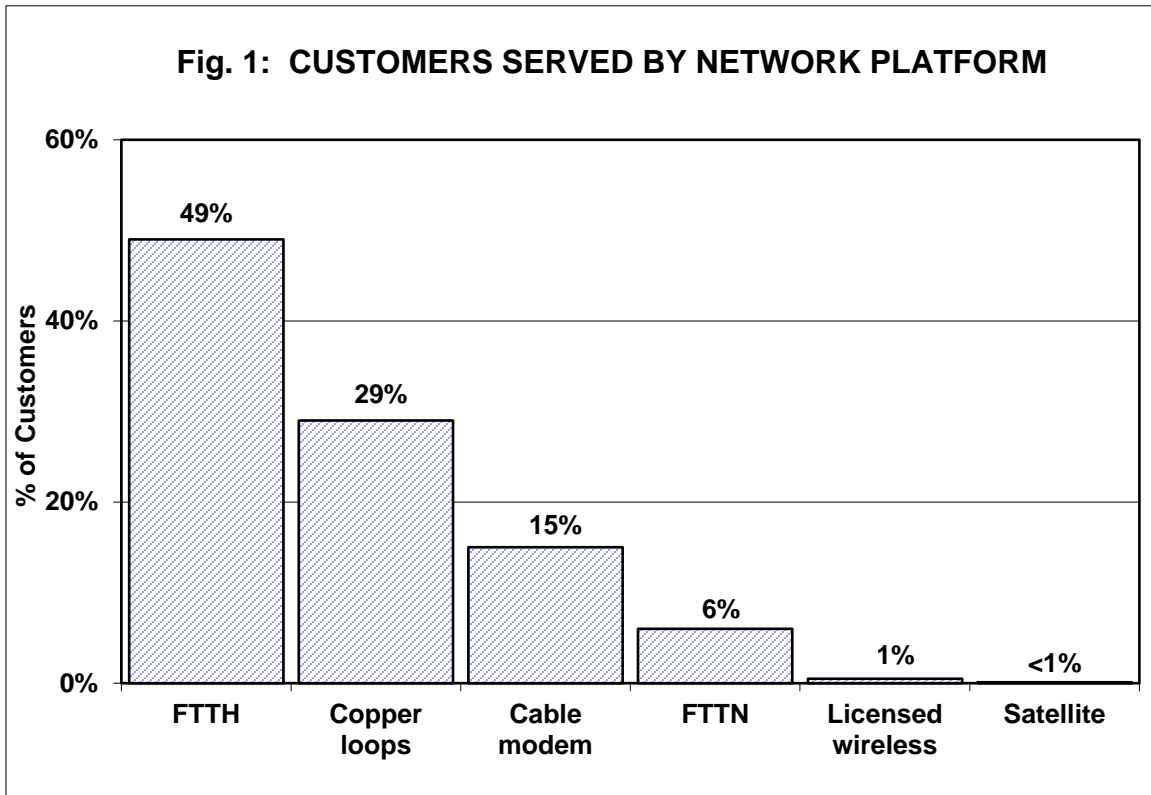
Forty-nine percent of survey respondents' service areas are 500 square miles or larger; 23% are at least 2,000 square miles. Two-thirds—66%—have customer densities in their service area of 10 residential customers per square mile or less. More than one-third—35%—have customer densities of two residential customers per square mile or less.

The average survey respondent serves 4,301 residential and 1,717 business voice grade access lines; a few larger companies skew these numbers upward, hence the median respondent serves 2,019 residential and 584 business lines. One hundred percent of survey respondents offer broadband service to some part of their customer base.<sup>4</sup> Respondents indicated that they use a variety of technologies, even within individual serving areas, to offer at least basic levels of broadband to their customers: 49% of respondents' customers are served via fiber to the home (FTTH), 29% via copper loops, 15% cable modem, 6% fiber to the node (FTTN), 0.5% fixed wireless, and 0.1% satellite. (See Figure 1.)

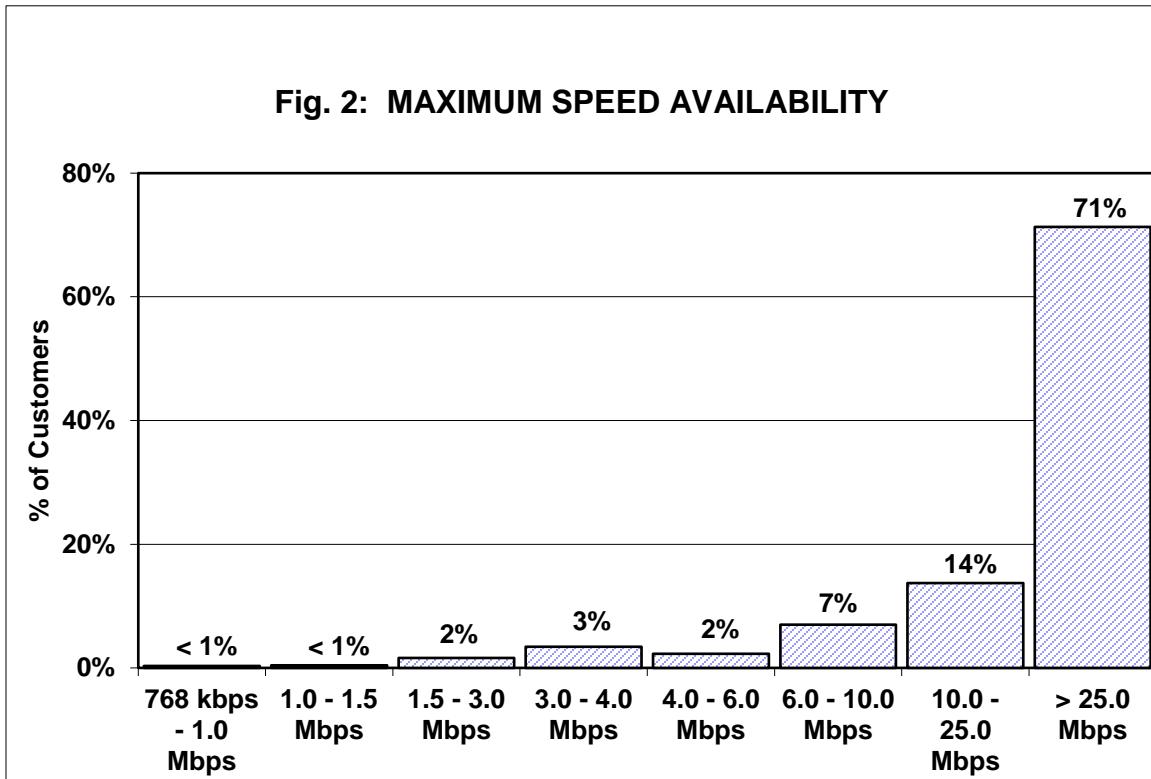
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<sup>3</sup> Based on the sample size, results of this survey can be assumed to be accurate to within  $\pm 7\%$  at the 95% confidence level.

<sup>4</sup> For the purpose of this survey, broadband is defined as throughput of at least 3 Mbps in one direction.

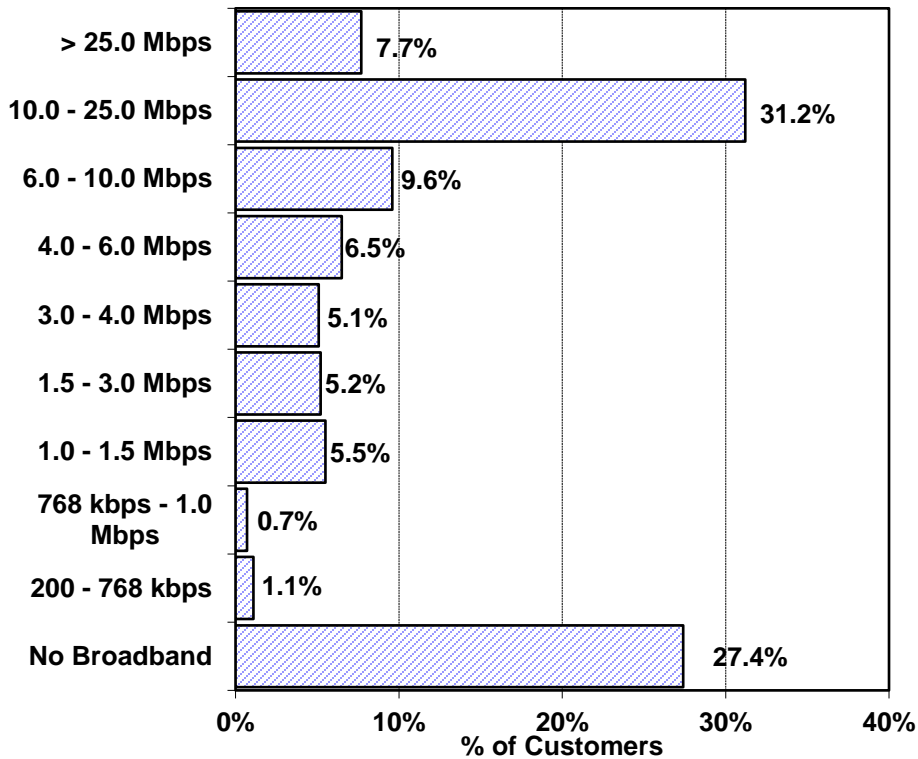


Approximately 0.3% of respondents' customers can subscribe to a maximum speed 768 kbps to 1.0 megabits per second (Mbps) service, 0.4% to 1.0 to 1.5 Mbps, 1.6% to 1.5 to 3.0 Mbps, 3.4% to 3.0 to 4.0 Mbps, 2.3% to 4.0 to 6.0 Mbps, 7.0% to 6.0 to 10.0 Mbps, 13.7% to 10.0 to 25.0 Mbps, and 71.3% to greater than 25 Mbps service. (See Figure 2.)



Survey results indicate an overall broadband take rate from NTCA member companies of 73%, up slightly from 70% a year ago. By far, the most popular speed tier among survey respondents' broadband subscribers is between 10.0 Mbps and 25.0 Mbps—31.2% of survey respondents' customers subscribe to this level of service. Next most popular is 6.0 Mbps to 10.0 Mbps (9.6%), greater than 25.0 Mbps (7.7%), 4.0 Mbps to 6.0 Mbps (6.5%), 1.0 Mbps to 1.5 Mbps (5.5%), 1.5 Mbps to 3.0 Mbps (5.2%), 3.0 Mbps to 4.0 Mbps (5.1%), and less than 1.0 Mbps (1.8%). Non-broadband subscribers make up 27.4% of survey respondents' customer base. (See Fig. 3.)

**Fig. 3: BROADBAND TAKE RATES BY SPEED TIER**



Typical prices charged range from \$34.95 to \$44.95 for cable modem service, \$29.95 to \$49.95 per month for DSL service, \$39.95 to \$49.95 for wireless broadband service, and \$39.95 to \$59.95 for fiber-based broadband service.

Thirty-nine percent of survey respondents indicated their customers may purchase so-called “stand alone DSL”—broadband service without a voice component. Take rates for stand alone DSL service are relatively low, however, with the majority of those respondents offering stand alone DSL reporting take rates of 10% or less.

Thirty-seven percent of respondents estimate that they could bring all of their customers currently receiving service below 25 Mbps up to that speed for between \$1 million and \$10 million in additional capital investment. An additional 24% could do so for between \$20 million and \$50 million, 16% at a cost of more than \$50 million, 13% for \$1 million or less, and 11% estimate the total cost would be between \$10 million and \$20 million.



## Fiber Deployment

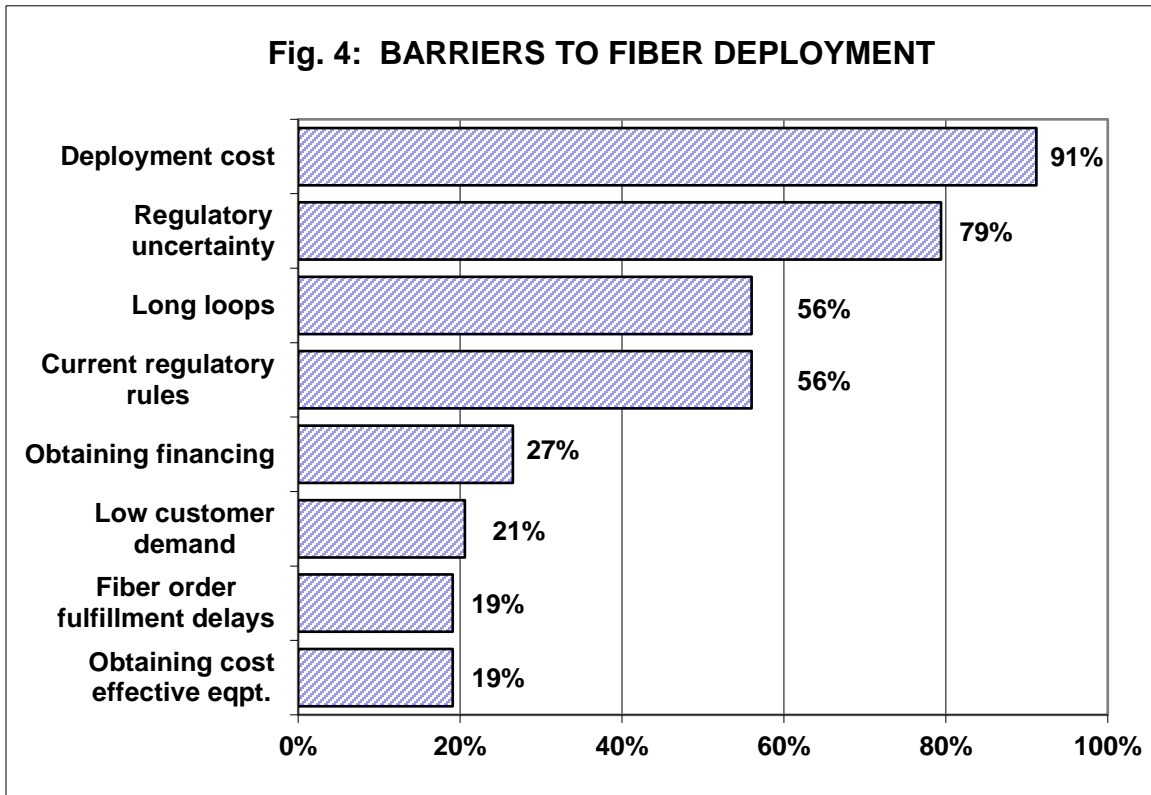
Fifty-five percent of those survey respondents currently deploying fiber serve at least 50% of their customers using fiber to the home (up from 45% last year), while 26% serve 20% of their customer base or less with fiber to the home (FTTH) technology (down from 29%.)

Survey respondents described their companies' plans to deploy fiber to the node (FTTN) and/or FTTH to their customers. Seventy-four percent of survey respondents indicated that they have a long-term fiber deployment strategy. Fifty percent of those survey respondents with a fiber deployment strategy expect to offer fiber to the node to more than 75% of their customers by the end of 2018. Seventy-eight percent of respondents expect to be able to provide FTTH to at least half of their customers by year-end 2018. An additional 40% have already completed fiber deployment to all of their customers.

Ninety-one percent of survey respondents identified the cost of fiber deployment as a significant barrier to widespread deployment. Regulatory uncertainty was the number two barrier (79%), followed by long loops (56%), current regulatory rules (56%), obtaining financing (27%), low customer demand (21%), fiber order fulfillment delays (19%) and obtaining cost-effective equipment (19%).<sup>5</sup> (See Figure 4.)

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<sup>5</sup> Totals exceed 100% as respondents were allowed to select more than one barrier.



## Internet Backbone

Survey respondents are, on average 78 miles from their primary Internet connection; the median distance is 48 miles. Ninety-one percent of those respondents who recently switched Internet backbone access providers did so for price reasons, while 36% switched due to quality of service concerns and 18% for other reasons, such as the ability to add redundant routes.<sup>6</sup> Seventy-nine percent of respondents indicated they are generally satisfied with their current backbone access provider, while 21% are generally dissatisfied. Sixty-six percent of all survey respondents expect to need additional backbone capacity in one year or less.

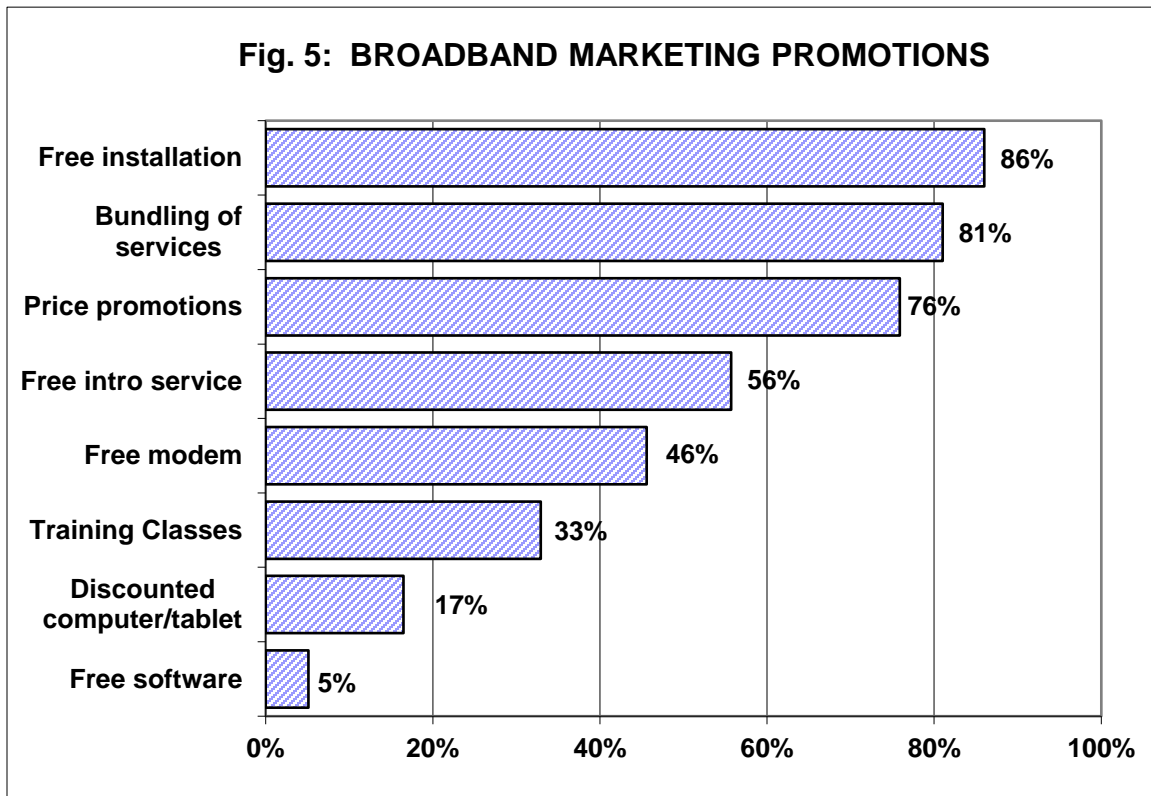
## Competition/Marketing

Virtually all survey respondents indicated that they face competition from at least one other service provider in some portion of their service area. Survey respondents typically compete with national ISPs, fixed and/or mobile wireless Internet service providers

<sup>6</sup> Totals exceed 100% as respondents were allowed to select more than one reason for switching providers.

(WISPs) and satellite broadband providers. Other potential competitors include cable companies, electric utilities, local ISPs and neighboring cooperatives.

Rural incumbent local exchange carriers are taking numerous steps in the marketing arena to increase broadband take rates. Eighty-six percent are offering free installation, 81% are bundling services, 76% are offering price promotions, 56% are offering free service for an introductory time period (such as 30 days), 46% are offering free modems, 33% are offering free education/training classes, 17% are offering discounted computers or tablets, and 5% are offering free software.<sup>7</sup> (See Figure 5.) Respondents consider their bundling of services, free installation and price promotions to be their most effective marketing promotions.



<sup>7</sup> Totals exceed 100% as respondents' companies may be offering more than one marketing promotion.

## Other Services

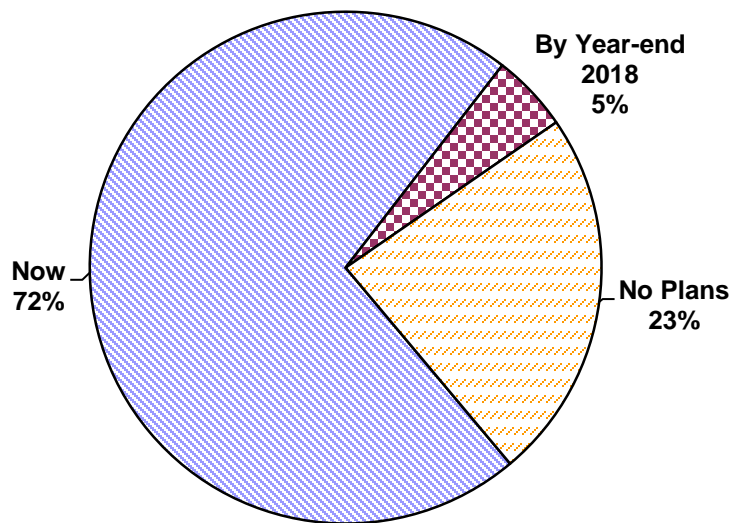
- **VoIP**

Thirty-one percent of survey respondents currently offer voice over Internet protocol (VoIP) service to their customers, unchanged from one year ago. Thirty-eight percent of those respondents not currently offering VoIP have plans to do so in the foreseeable future, down from 48% last year.

- **Video**

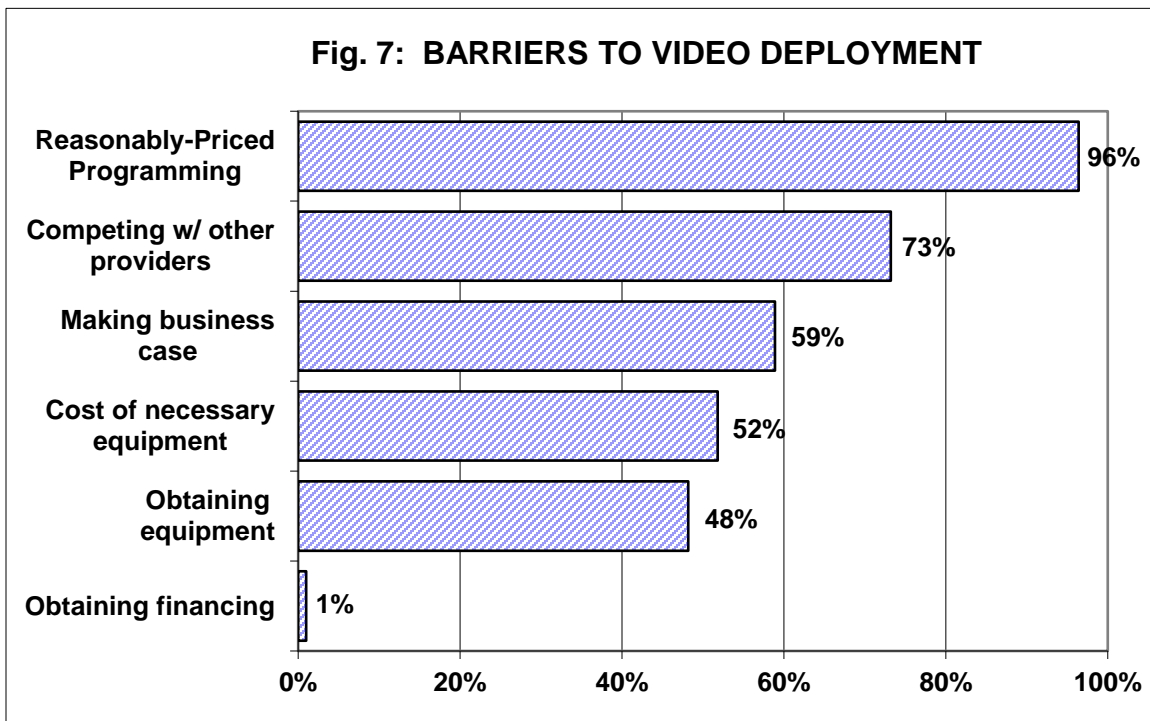
Seventy-two percent of survey respondents offer video service to their customers. Seventeen percent of those respondents not currently offering video (5% of all respondents) plan to do so by year-end 2018. The remaining 82% of those not currently offering video (23% of all respondents) currently have no plans to offer video service. (See Figure 6.) Fifty percent of those planning a future video offering intend to offer Internet protocol television (IPTV) service in the foreseeable future.

**Fig. 6: OFFERING VIDEO SERVICE?**



Of those respondents currently offering video services, 88% offer IPTV, and 46% offer legacy coax (CATV) service.<sup>8</sup> Twenty-seven percent of those providing CATV service use an analog system, while 73% use a digital system. The average respondent offers their customers three “tiers” of entertainment television packages from which to choose, unchanged from last year. Seventy-seven percent of the customers of those survey respondents offering video are able to watch programming on multiple devices, both inside and outside their home (i.e., “TV everywhere”), up from 60% last year.

The main barrier facing those survey respondents providing video service is access to reasonably-priced programming, as cited by 96% of survey respondents. Seventy-three percent cited difficulty competing with other providers, 59% the challenge of making a business case for video service, 52% the cost of necessary equipment, 48% difficulty obtaining necessary equipment, and 1% difficulty obtaining necessary financing.<sup>9</sup> (See Fig. 7.)



<sup>8</sup> Totals exceed 100% as respondents may offer more than one type of video service.

<sup>9</sup> Totals exceed 100% as respondents may be facing more than one barrier.

## Miscellaneous

Survey respondents were asked what specific obstacles they have encountered in their efforts to deploy fiber to their customers, and how conditions would need to change to allow them to successfully overcome those obstacles. Their responses are presented in Appendix A of this report.

## CONCLUSIONS

**Despite the multitude of obstacles that small providers must face, fiber deployment continues to grow at an impressive pace.** In the 2013 survey, 29% of respondents' customers were served by fiber to the home; in 2014, the percentage grew to 39%; and in this year's survey, almost half—49%—have access to FTTH service. This growth is all the more remarkable given the regulatory instability of the past several years. Clearly, these carriers recognize the importance of fiber to their network both now and in the coming future, and are taking the necessary steps to include it in their plans.

**Due in no small part to increased fiber deployment, broadband speeds offered to customers continue to grow.** In the 2013 survey, 66% of respondents' customers were able to subscribe to broadband speeds of 10 Mbps or greater. In the current survey, 85% have access to service in excess of 10 Mbps, and 71% can subscribe to service of 25 Mbps or greater. The availability of robust and reliable broadband service plays a vital role in supporting the ongoing viability of rural America.

**Respondents' customers continue to subscribe to higher speed broadband service.** In the 2014 survey, the take rate for broadband service of 10 Mbps or greater was 34%; this year, the take rate was 39%—a gain of nearly 16%. This continued growth validates providers' decisions to make this service available, and allows them the necessary confidence to continue to invest in their networks in the years to come.

**The ability to access reasonably-priced video content remains a significant concern for virtually all of those survey respondents offering video.** The difficulties that small, rural carriers face in trying to negotiate for access to video content under reasonable terms are nearly ubiquitous, being cited as a significant challenge by 96% of respondents in this year's survey, as well as 98% and 99% in 2014 and 2013, respectively. This is a widespread problem that must be addressed if these providers are to be able to provide high quality video service to the customers in their rural service areas.

## APPENDIX A

*Q: What specific obstacles have you encountered in your efforts to deploy fiber to your customers, and how would conditions need to change to allow you to successfully overcome those obstacles?*

Cost of deployment; regulatory stability & financing

Access to cash and cost to deploy. There is no rational business case for FTTH in rural areas.

Uncertain regulatory environment CAF funding Capital expenditure limits Financial position Expensive regulatory oversight Customers being "intentionally misinformed" by competitors.

Too much investment costs without knowing if we can adequately earn on and recover investment and operating costs.

The FCC has moved in the wrong direction in allocating USF funds. Unless they reform who needs to contribute there won't be enough money to support efforts to expand and maintain current investments.

Lack of fiber availability and costs to deploy have been our two biggest hurdles. Being a rural provider the costs to put fiber in the ground are very expensive.

Cost of deployment vs making a business case.

Weather Resources - manpower

Local Government

Regulatory uncertainty of funding and publicly subsidized over-builds. Changes are needed in accountability and a fair competitive market (Municipalities and PUDs, etc)

Construction costs in well-established neighborhoods & residential districts. Price resistance to higher bandwidth tiers across demographic segments. Older demographic (high % of retirees) resistant to technology.

Cost, long loops, time to install

Access to cash and cost to deploy.

Financial cost to deploy

Cost, RUS funding, fiber availability

The cost of construction, conversion costs, and the cost of additional equipment

Regulatory uncertainty, delays in obtaining fiber optics and uncertainty about continuing support of our network after the FTTH buildout is complete

Cost of deployment/build out and obtaining funding

Cost and density of homes

Cost

Cost. Simplified RUS financing

Currently getting RUS loan

Cost of deployment Cost of video programming Programmers need to decrease their programming costs and off the air providers need to decrease their retransmission fees