

NTCA 2011 BROADBAND/INTERNET AVAILABILITY SURVEY REPORT

March 2012

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

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EXECUTIVE SUMMARY

For the more than a decade, the National Telecommunications Cooperative Association (NTCA) has conducted its annual Broadband/Internet Availability Survey to gauge the deployment rates of advanced services by its member companies. In the fall of 2011, NTCA sent an electronic survey form to each of the companies in NTCA's e-mail database; 114 members (23%) responded.

One hundred percent of the 2011 survey respondents offer broadband to some part of their customer base, compared with the 58% of the 2000 survey respondents who offered the then-lower definition of broadband service.¹ Respondents indicated that they use a variety of technologies to provide at least basic levels of broadband to their customers: 80% of those who offer broadband utilize copper loops (only 29% of 1999 survey respondents offered DSL service), 64% fiber to the home (FTTH), 29% fiber to the node (FTTN), 14% unlicensed wireless, 14% licensed wireless, 11% cable modem and 5% satellite. Fifty-six percent of 2011 survey respondents provide broadband via both digital copper loops and fiber broadband service, while 20% offer digital copper loops but not fiber and only 7% fiber but not digital copper loops.

Ninety-eight percent of respondents' customers can receive 200 to 768 kilobits per second (kbps) downstream service, 95% 768 kbps to 1.0 megabits per second (Mbps), 88% 1.0 to 1.5 Mbps, 91% 1.5 to 3.0 Mbps, 91% 3.0 to 4.0 Mbps, 90% 4.0 to 6.0 Mbps, 57% 6.0 to 10.0 Mbps, and 34% greater than 10.0 Mbps. The overall take rate for broadband service is 66%.

The typical respondent is 111 miles from its primary Internet connection. Eighty-six percent of those who recently changed backbone providers did so for price reasons. Eighty-four percent of respondents indicated they are generally satisfied with their current backbone access provider, while 16% are generally dissatisfied.

Ninety-seven percent of survey respondents indicated they face some type of competition in the provision of advanced services from at least one other service provider in some portion of their service area. By comparison, only 66% of respondents to the 2003 survey indicated they faced competition and only 43% in the 1999 survey. Current competitors include national Internet service providers (ISPs), cable companies and wireless Internet service providers (WISPs.) Respondents are taking numerous marketing steps to increase broadband take rates, including free customer premise equipment installation, bundling of services, price promotions, free modems, free introductory service and free education and training. More than three-quarters of respondents find it difficult to compete with price promotions offered by competitors.

¹ For the purpose of this survey, broadband is defined as throughput of at least 768 kbps in one direction. Previously, the commission had defined broadband as service of at least 200 kbps in one direction.

Fifty-eight 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 2014, while 66% plan to offer fiber to the home to at least 50% of their customers over the same time frame, up from 46% of respondents last year. Deployment cost remains the most significant barrier to widespread deployment of fiber, followed by regulatory uncertainty, long loops, current regulatory rules, obtaining financing, obtaining cost-effective equipment, and low customer demand. Throughout the history of the survey, deployment cost has been respondents' most significant concern.

Eleven percent of respondents currently offer voice over Internet protocol (VoIP) service, down slightly from 14% last year. Forty-eight percent of respondents not currently offering VoIP have plans to do so in the foreseeable future, virtually unchanged from last year. Seventy-two percent of respondents offer video service to their customers, roughly unchanged from 73% last year.

INTRODUCTION

In the fall of 2011, NTCA 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 of approximately 575 local exchange carriers in 44 states that provide service primarily in rural areas. 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 50,000 lines or more; the largest serves just over 90,000. Population density in most member service areas is 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.² 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 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.

² Copies of this and previous NTCA survey reports may be downloaded from the NTCA web site, www.ntca.org.

OVERVIEW OF SURVEY

The 2011 NTCA Broadband/Internet Availability Survey was conducted online. Every effort was made to minimize the reporting burden on the survey respondents.

The survey was comprised 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 114 member companies, a 23% response rate.³

Fifty-four percent of survey respondents' service areas are 500 square miles or larger; 23% are at least 2,000 square miles. Nearly three-quarters—73%—have customer densities in their service area of 10 residential customers per square mile or less. Nearly one-fourth—24%—have customer densities of two residential customers per square mile or less.

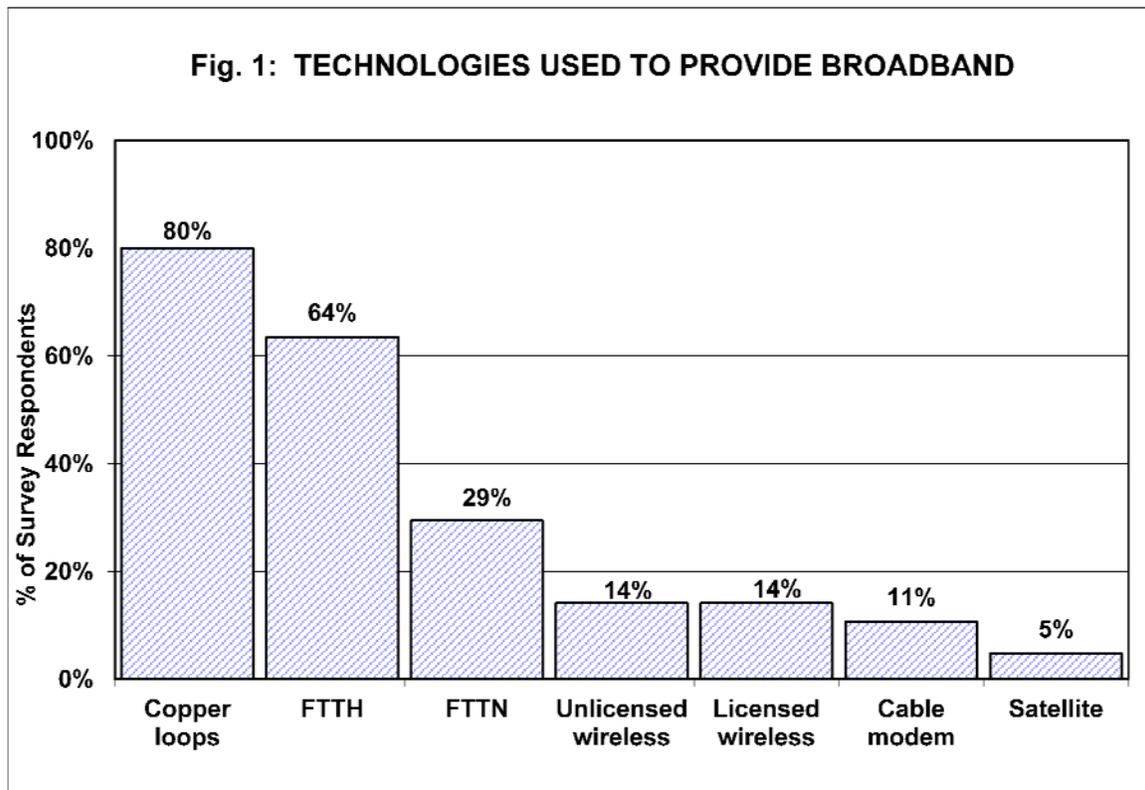
The average survey respondent serves 4,745 residential and 1,736 business voice grade access lines; a few larger companies skew these numbers upward, hence the median respondent serves 2,039 residential and 548 business lines. One hundred percent of survey respondents offer broadband⁴ service to some part of their customer base. Respondents indicated that they use a variety of technologies to offer at least basic levels of broadband to their customers: 80% utilize digital copper loops, 64% fiber to the home (FTTH), 29% fiber to the node (FTTN), 14% unlicensed wireless, 14% licensed wireless, 11% cable modem, and 5% satellite.⁵ (See Figure 1.) Sixty-seven percent of survey

³ Based on the sample size, results of this survey can be assumed to be accurate to within $\pm 8.0\%$ at the 95% confidence level.

⁴ For the purpose of this survey, broadband is defined as throughput of 768 kbps in at least one direction. This was the definition implemented by the FCC in 2008. According to the Commission, throughput speeds of between 200 kbps and 768 kbps are classified as "first generation data" and throughputs between 768 kbps and 1.5 Mbps are classified as first tier "basic broadband." This report adopts those FCC conventions.

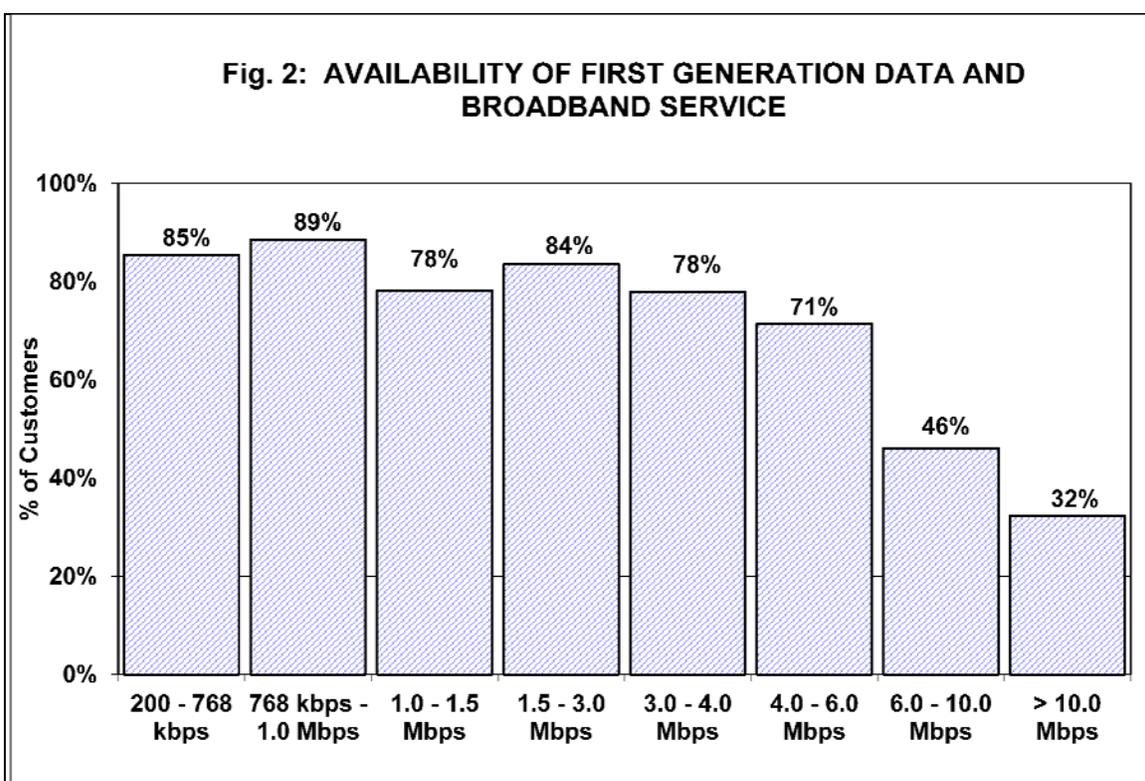
⁵ Percentages sum to greater than 100% as some respondents utilize more than one technology to serve their customers. For example, a provider may utilize FTTH to serve some portion of its serving area, while relying upon copper plant and DSL technology to serve the rest of its customers.

respondents are providing either FTTN, FTTH or both, virtually unchanged from 68% in the 2010 survey and 59% in 2009. Fifty-six percent of survey respondents provide both digital copper loops and fiber broadband service, while 20% offer digital copper loops but not fiber and 7% fiber but not digital copper loops. Thus, eighty-three percent of those respondents that offer broadband service include either digital copper loops, fiber, or both among their service offerings.



Fifty-seven percent of survey respondents are currently borrowing funds from the Rural Utilities Service for broadband deployment, 17% are borrowing from CoBank, and 8% are borrowing from the Rural Telephone Finance Cooperative.

Eighty-five percent of respondents' customers can subscribe to 200 kbps to 768 kbps downstream service, 89% to 768 kbps to 1.0 megabits per second (Mbps), 78% to 1.0 to 1.5 Mbps, 84% to 1.5 to 3.0 Mbps, 78% to 3.0 to 4.0 Mbps, 71% to 4.0 to 6.0 Mbps, 46% to 6.0 to 10.0 Mbps, and 32% to greater than 10 Mbps service. (See Figure 2.)



Survey results indicate an overall broadband take rate from NTCA member companies of 66%, up from 55% a year ago.⁶ Typical prices charged range from \$34.95 to \$44.95 for cable modem service, \$29.95 to \$44.95 per month for DSL service, \$39.95 to \$49.95 for wireless broadband service, and \$39.95 to \$54.95 for fiber service.

Fifty-one percent of survey respondents indicated they offer their customers so-called “naked DSL”—DSL service without a voice component. Take rates for naked DSL

⁶ Keep in mind that the take rate provided here is for customers taking service from NTCA member companies only. Total rural broadband subscription rates are likely significantly higher, as survey respondents are joined by a variety of competitors in the provision of broadband services within portions of their service area.

service are relatively low, with the majority of those respondents offering naked DSL reporting take rates of 5% or less.

Six percent of all respondents estimate that they could bring all of their customers currently receiving service below 25 Mbps up to that speed for \$1 million or less in additional capital investment. An additional 35% could do so for between \$1 million and \$10 million, 21% at a cost of between \$10 million and \$20 million, 27% between \$20 million and \$50 million, and 12% estimate the total cost would exceed \$50 million.

Internet Backbone

The typical respondent is 111 miles from his primary Internet connection. Eighty-six percent of those respondents who have recently switched Internet backbone access providers did so for price reasons, while 38% switched due to quality of service concerns and 24% for other reasons, such as obtaining diverse routing or gaining the ability to access the Internet backbone using Ethernet transport.⁷ Eighty-four percent of respondents indicated they are generally satisfied with their current backbone access provider, while 16% are generally dissatisfied. Three-quarters of all survey respondents expect to need additional backbone capacity in one year or less.

Competition/Marketing

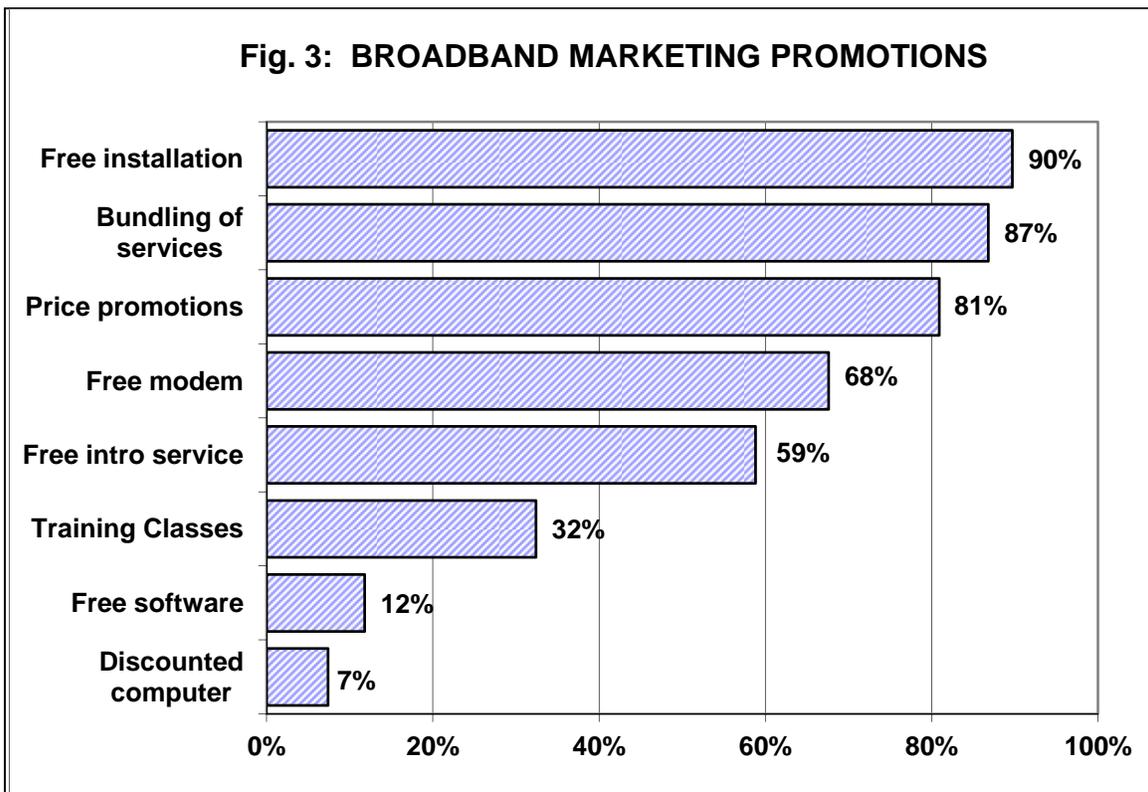
Competition in broadband is becoming more prevalent and more varied: 97% of survey respondents indicated that they face competition from at least one other service provider in some portion of their service area. Survey respondents typically compete with national ISPs, wireless Internet service providers (WISPs) and cable companies. Other potential competitors include electric utilities, local ISPs and neighboring cooperatives. Seventy-three percent of those respondents facing competition indicated that their fixed service competitors were serving only the cities and towns in their service areas, while 27% said that competitors were serving customers in other portions of their service area as well.

Rural incumbent local exchange carriers are taking numerous steps in the marketing arena to increase broadband take rates. Ninety percent are offering free installation, 87% are bundling services, 81% are offering price promotions, 68% are offering free modems, 59% are offering free service for an introductory time period (such as 30 days), 32% are offering free education/training classes, 12% are offering free software and 7% are offering discounted computer equipment.⁸ (See Figure 3.) Seventy-eight percent of respondents find it difficult to compete with price promotions offered by competitors, while 44% struggle to match competitors' service bundling. Respondents consider their

⁷ Totals exceed 100% as respondents were allowed to select more than one reason for switching providers.

⁸ Totals exceed 100% as respondents' companies may be offering more than one marketing promotion.

bundling of services, free installation and price promotions to be their most effective marketing promotions.



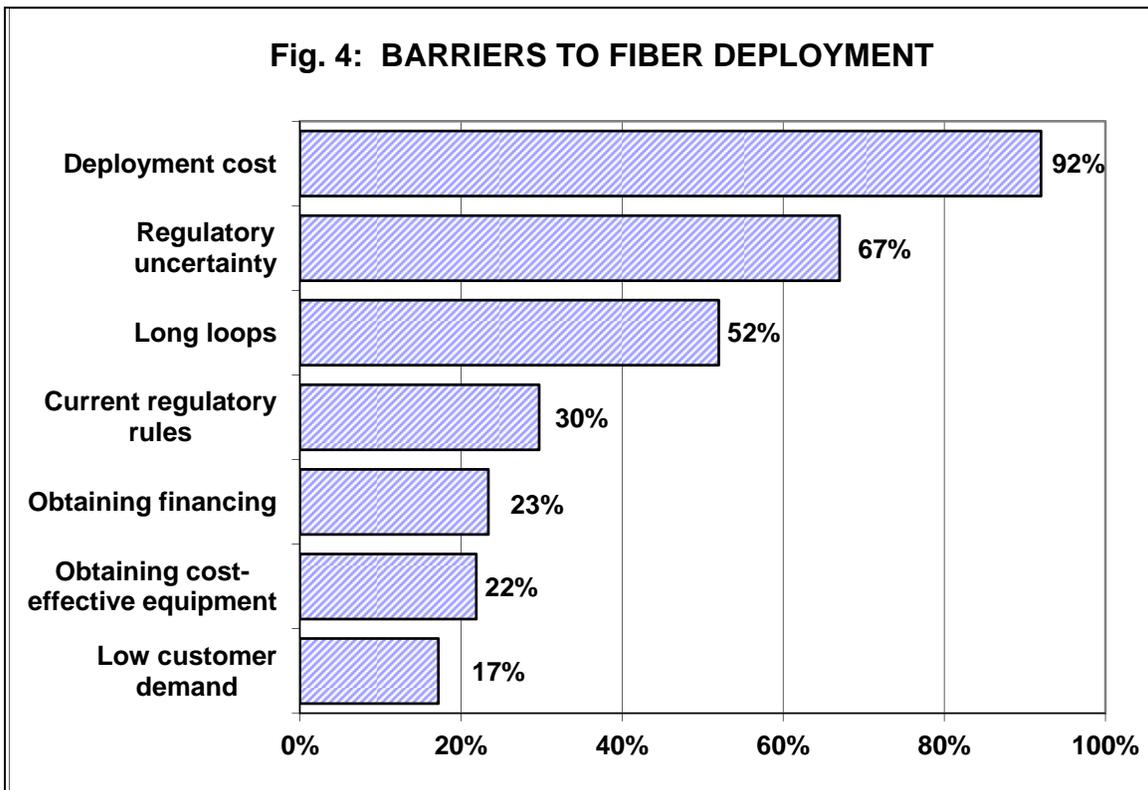
Fiber Deployment

Sixty-three percent of those survey respondents currently deploying fiber serve more than 50% of their customers using fiber, while 20% serve 20% of their customer base or less.

Survey respondents described their companies' plans to deploy fiber to the node (FTTN) and fiber to the home (FTTH) to their customers. Fifty-eight 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 2014. Sixty-six percent of respondents expect to be able to provide FTTH to at least half of their customers by year-end 2014 (up from 46% last year.)

Ninety-two percent of survey respondents identified the cost of fiber deployment as a significant barrier to widespread deployment. Regulatory uncertainty was the number two barrier (67%), followed by long loops (52%), current regulatory rules (30%),

obtaining financing (23%), obtaining cost-effective equipment (22%), and low customer demand (17%).⁹ (See Figure 4.)



Other Services

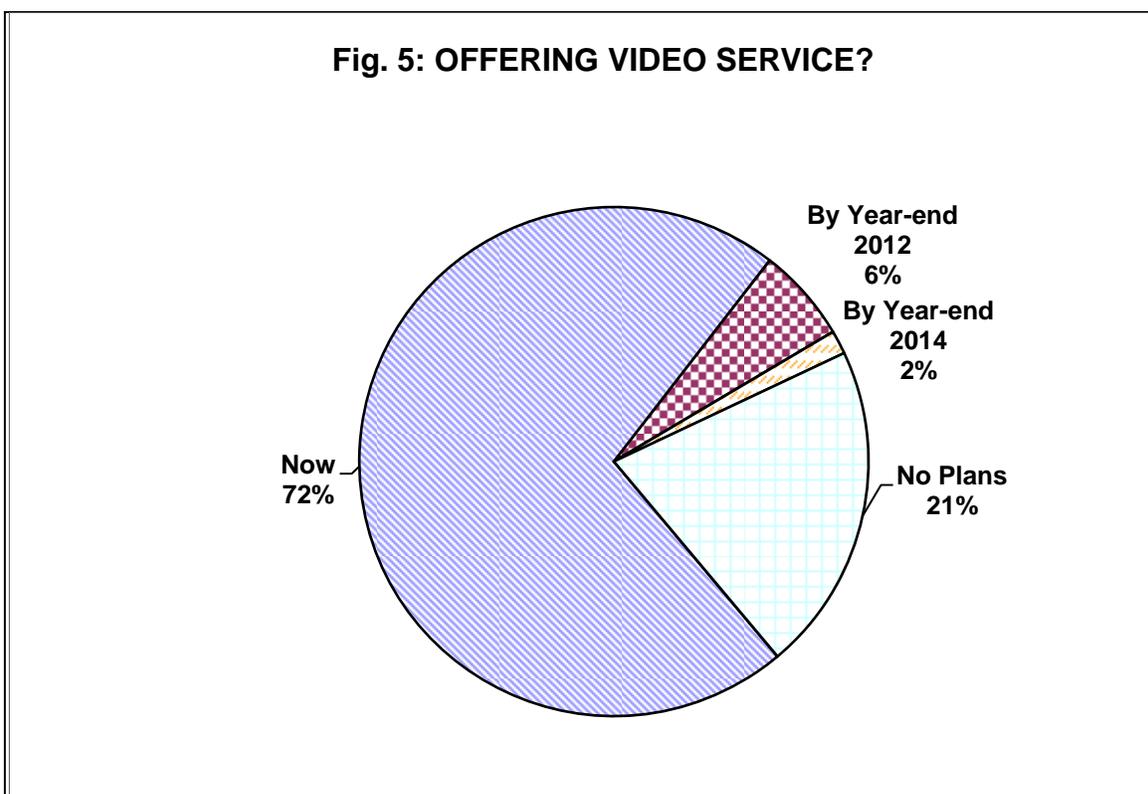
- **VoIP**

Eleven percent of survey respondents currently offer voice over Internet protocol (VoIP) service to their customers, down from 14% one year ago. Forty-eight percent of those respondents not currently offering VoIP have plans to do so in the foreseeable future, up slightly from 47%. Forty-eight percent of respondents perceive VoIP as a significant threat to their current operations (up from 46% last year), while 39% perceive VoIP as a moderate threat (up from 36%).

⁹ Totals exceed 100% as respondents were allowed to select more than one barrier.

- **Video**

Seventy-two percent of survey respondents offer video service to their customers. Twenty-one percent of those respondents not currently offering video (6% of all respondents) plan to do so by year-end 2012, and 5% (2% of all respondents) expect to do so by year-end 2014. The remaining 74% of those not currently offering video (21% of all respondents) currently have no plans to offer video service. (See Figure 5.) Close to half (42%) of those not currently offering video intend to offer Internet protocol television (IPTV) service in the foreseeable future.

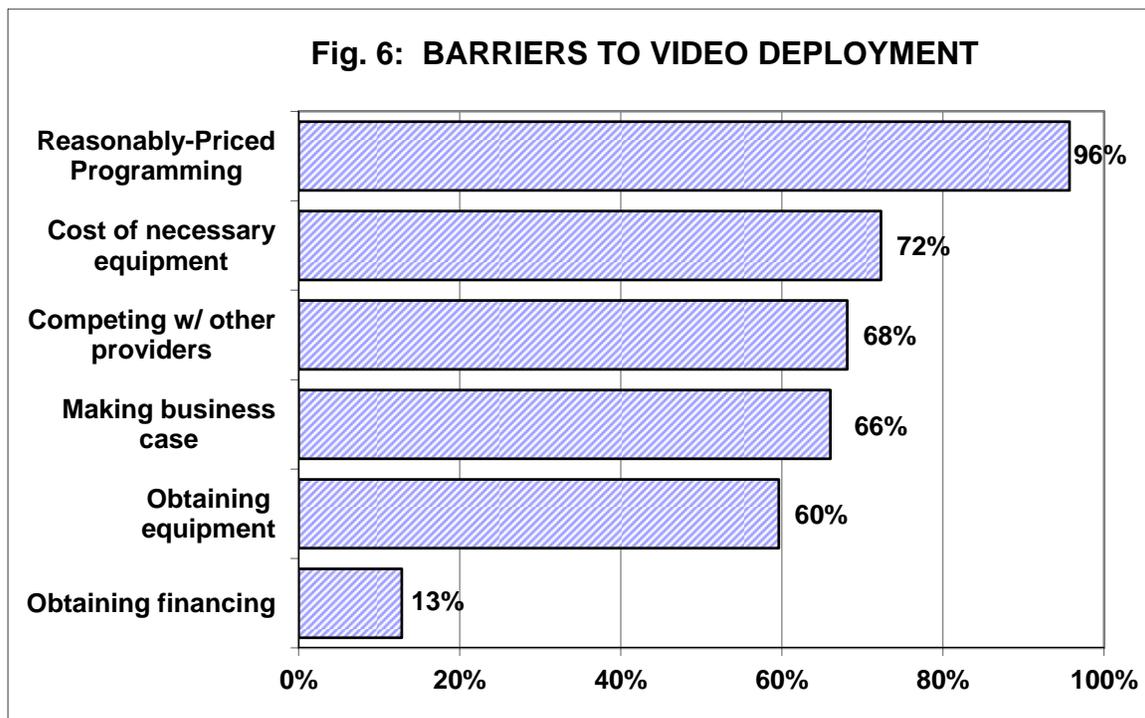


Of those respondents currently offering video services, 62% offer legacy coax (CATV) service, while 59% offer IPTV and 10% offer direct broadcast satellite (DBS).¹⁰ Sixty-one percent of those providing CATV service use an analog system, while 39% use a digital system. Forty-three percent of responding video providers utilize a shared headend, 43% a managed headend, and 25% a satellite aggregator.¹¹ The average respondent offers their customers four “tiers” or entertainment television packages from which to choose, up from three last year.

¹⁰ Totals exceed 100% as respondents may offer more than one type of video service.

¹¹ Totals exceed 100% as respondents may utilize more than one of the choices offered.

The main barrier facing those survey respondents providing video service is access to reasonably-priced programming, as cited by 96% of survey respondents. Seventy-two percent cited the cost of necessary equipment, 68% difficulty competing with other providers, 66% the challenge of making a business case for video service, 60% difficulty obtaining necessary equipment, and 13% difficulty obtaining necessary financing. (See Fig. 6.)



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

Survey respondents have taken great strides in making broadband service available to their customers. RLECs have shown tremendous progress in broadband availability in the past year. According to survey results, more than seven out of 10 customers of responding companies can subscribe to broadband service of up to 6 Mbps. Further, approximately one-third of respondents' customers can receive service of 10 Mbps or greater, comparable to that available anywhere in the country.

Survey respondents rely upon a wide variety of marketing promotions in order to remain competitive. Competition for the provision of broadband service is nearly ubiquitous—97% of survey respondents reported at least one other competitor serving customers in some portion of their service territory. As a result, RLECs are offering an impressive variety of promotions to potential customers, including free installation, service bundles, and price promotions. Once new customers are signed and the limited-time promotions expire, however, it is service quality and reliability that appear to be the deciding factors in whether the customer stays for the long haul, or opts to depart for a competitor's service.

Survey respondents continue to face significant competition in the provision of broadband services, but many of these competitors serve only the most profitable portions of the respondents' service area. Virtually all respondents—97%—indicated that they were facing competition within some portion of their serving area from a wide variety of service providers: national ISPs, wireless ISPs, cable companies, electric utilities, local ISPs and neighboring cooperatives. At the same time, 73% indicated that their fixed service competitors were only serving the cities and towns in their service areas. This means that, in many instances, the rural LEC is the only broadband option available to the residents and businesses in the most rural areas of the country.

Regulatory uncertainty continues to affect respondents' future plans adversely. Cited as the second greatest barrier to fiber deployment (behind deployment cost), uncertainty about the future regulatory climate weighs heavily upon survey respondents. This is readily apparent in the open-ended responses to the question about obstacles faced. (The responses to that question are collected in Appendix A.) As one carrier put it, “[We] don't know what is going to happen, so [we] won't take further risk beyond [our] plans for 2012.” Once RLECs have a better idea what the future regulatory landscape will look like, they will be able to resume their long-term planning efforts.

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?

We would need to be able to recover investments and operating costs while realizing a return on our investment.

Cost

Cost, low take rate, lack of education

We need regulatory certainty. There appears to be no way to recover our cost to expand our FTTH network to the outer edges of our study area.

Can't afford it.

In our case by deploying fiber to the node we have essentially deployed fiber to the home more or less because even though our service area is substantial most of our customers live within a 12 mile square. Our wireless footprint is much more difficult to deploy.

Eliminate Speed Differences for FTTH

1. The current 2 year BLM Permitting Process is an obstacle. (Streamline this process in areas where previous disturbances to the existing Right-of-Way has occurred. Process should take no more than a few weeks at most.)
2. Local Highway District permitting pricing set as a revenue stream for highway district. Pricing for placement of facilities increased by \$2,500 per mile or more. (Highway districts should have to follow the pricing structure set by the State DOT.)

In rural areas where customer revenue alone is not sufficient to cover capital and operating cost, these areas need to be under guaranteed rate of return and regulated. Going forward a new settlement system should not include voice access revenues. Voice is an application. Middle mile cost must be included as a broadband eligible recoverable expense.

Regulatory uncertainty/cost recovery clarity from FCC

Low take rate, low customer density, high construction costs

Understanding the affect of the FCC USF/ICC reform

Battery back-up needs to be longer during power outages.

Hyper-competitive pricing from competitors make it harder to justify widespread fiber deployment.

Subscriber density versus cost of deployment.

Time, getting fiber and equipment in a timely fashion.

We would need regulatory certainty and a way to recover cost

Fiber shortage.

Cost

Fiber availability, regulatory, cost of equipment

Cost of deployment. Uncertainty of return on investment.

Rural expanse of county. Build outside of 6,000 ft from offices.

More customers per square mile.

Cost and difficulty in obtaining fiber

Subscriber density is low in outlying areas.

Brown field challenges in rough terrain. Money and time to overcome.

Long loop expense, time and finances.

Special permits through government controlled land.

Funding and cost

We would need regulatory certainty and a way to recover cost.

Lower cost of deployment, migration of customers to rural carriers, regulatory action that would guarantee funds.

Current and uncertain regulatory rules all have to be clear such that a normal person understands and knows what to expect going forward.

Funding and cost

Cost to build, regulatory rules, FCC order on USF/ICC reform is devastating to our company

Regulatory uncertainty

NBP not finalized - don't know what is going to happen so won't take further risk beyond plans for 2012

Obtaining right of way to private roads and subdivisions

Density/long loops -- 0.5 customers per sq mile requires a lot of fiber for very few customers; we're paying about \$50k/mile for FTTH turned up.

Same as above, the process, requirements and time frames to obtain the ROW/permits need to be reviewed based on request to grant timely responses in order to start construction.

Need more wireline broadband APPS!

Weather

FCC lack of progress on study area waiver - needs decision from FCC.

We would need to be able to recover investments and operating costs while realizing a return on our investment.