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NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION
The Voice of Rural Telecommunications
www.ntca.org

NTCA 2009 BROADBAND/INTERNET AVAILABILITY SURVEY REPORT

November 2009

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

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EXECUTIVE SUMMARY

For the last eleven years, 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.[1] In the late spring and early summer of 2009, NTCA sent an electronic survey form to each of the companies in NTCA's email database; 156 members (31%) responded.

Ninety-eight percent of the 2009 survey respondents offer broadband to some part of their customer base, compared to the 58% of the 2000 survey respondents who offered the then-lower definition of broadband service.[2] Respondents indicated that they use a variety of technologies to provide broadband to their customers: 98% of those who offer broadband utilize digital subscriber line (DSL), 59% fiber to the home (FTTH) or fiber to the curb (FTTC) (up from 44% last year and 32% the year before that), 25% licensed wireless, 22% unlicensed wireless, 15% satellite and 10% cable modem. Only 29% of 1999 survey respondents offered DSL service, and none offered wireless broadband.

Seventy-eight percent of respondents' customers can receive 200 to 768 kilobits per second (kbps) service, 73% 768 kbps to 1.5 megabits per second (Mbps), 77% 1.5 Mbps to 3 Mbps, 53% 3 Mbps to 6 Mbps, and 39% greater than 6 Mbps. The overall take rate for broadband service is 37%.[3] On average, 23% of respondents' customers who can receive 200 kbps to 768 kbps service subscribe, 19% subscribe to 768 kbps to 1.5 Mbps service, 21% to 1.5 Mbps to 3 Mbps, 22% to 3 Mpbs to 6 Mbps offerings, and 10% to greater than 6 Mbps service.

The typical respondent is 103 miles from their primary Internet connection. Eighty-five percent of those who recently changed backbone providers did so for price reasons. Seventy-two percent of respondents indicated they are generally satisfied with their current backbone access provider, while 20% are generally dissatisfied.

Eighty-nine percent of survey respondents indicated they face 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

[1] Following the completion of the 2001 survey in December 2001, it was decided that subsequent Broadband/Internet Availability Surveys would be conducted in the first half of the year in order to capture year-end data. Consequently, no survey was conducted and no survey report published in calendar year 2002.
[2] 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.
[3] Actual rural broadband subscription rates are likely significantly higher than the numbers shown here, as survey respondents are joined by a variety of competitors in the provision of broadband services within their service area.

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 hardware, free introductory service and free software.

More than three-quarters of respondents find it difficult to compete with price promotions offered by competitors. Overall, 37% of survey respondents consider their company's marketing efforts to be "very successful."

Seventy-three 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 2011, while 55% plan to offer fiber to the home to at least 50% of their customers over the same time frame, up from 26% last year. Deployment cost remains the most significant barrier to wide deployment of fiber, followed by regulatory uncertainty, long loops, low customer demand, and obtaining cost-effective equipment. Throughout the history of the survey, deployment cost has been respondents' most significant concern.

Ten percent of respondents currently offer voice over Internet protocol (VoIP) service, up slightly from 6% last year. Fifty-four percent of respondents have plans to offer VoIP in the foreseeable future, up from 44%. Seventy-five percent of respondents offer video service to their customers, up from 68% last year.

INTRODUCTION

In the summer of 2009, 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 more than 580 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 Telecommunications Act of 1996 ("Act"). 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. Approximately half of NTCA's members are organized as cooperatives and the other half are commercial companies.

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.[4] 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

[4] Copies of this and previous NTCA survey reports may be downloaded from the NTCA Web site, 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 2009 NTCA Broadband/Internet Availability Survey was conducted online. The survey was broken up into two separate segments, each sent out about three weeks apart. Member companies were provided with a URL through which they could access each portion of the survey. Every effort was made to minimize the reporting burden on the survey respondents.

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

SURVEY RESULTS

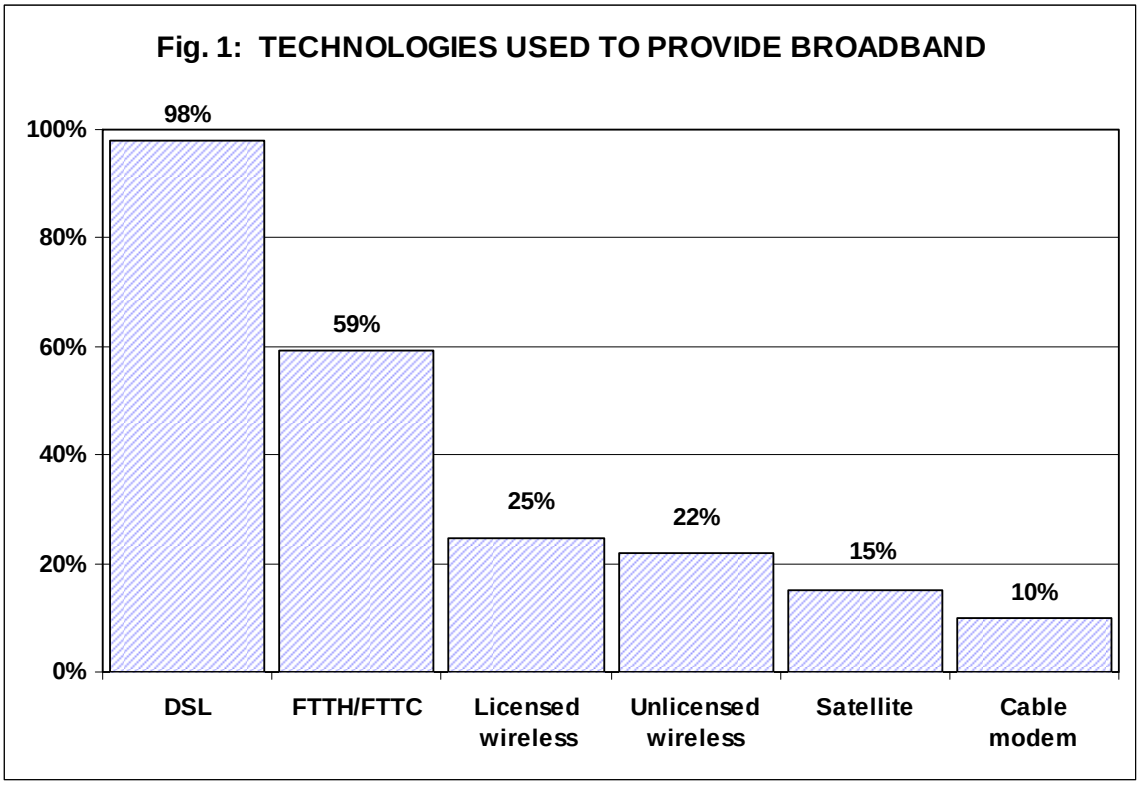
The survey URL for each part of the survey was distributed via e-mail to all member companies in NTCA's email database. The message contained instructions for online access to the survey. Responses were received from 156 member companies, a 31% response rate.[5]

Fifty-six percent of survey respondents' service areas are 500 square miles or larger; 27% are at least 2000 square miles. Two-thirds—67%—have customer densities in their service area of 10 residential customers per square mile or less. Nearly one-third—31%—have customer densities of 2 residential customers per square mile or less.

[5] Based on the sample size, results of this survey can be assumed to be accurate to within ± 6.5% at the 95% confidence level.

The average survey respondent serves 5,375 residential and 1,655 business lines; a few larger companies skew these numbers upward, hence the median respondent serves 3,020 residential and 700 business lines. Ninety-eight percent of survey respondents offer broadband[6] service to some part of their customer base. Respondents indicated that they use a variety of technologies to serve their customers: 98% utilize digital subscriber line (DSL), 59% fiber to the home (FTTH) or fiber to the curb (FTTC), 25% licensed wireless, 22% unlicensed wireless, 15% satellite, and 10% cable modem.[7] (See Figure 1.) Fiber deployment is up from 44% in the 2008 survey and 32% in 2007.

Fig. 1: TECHNOLOGIES USED TO PROVIDE BROADBAND



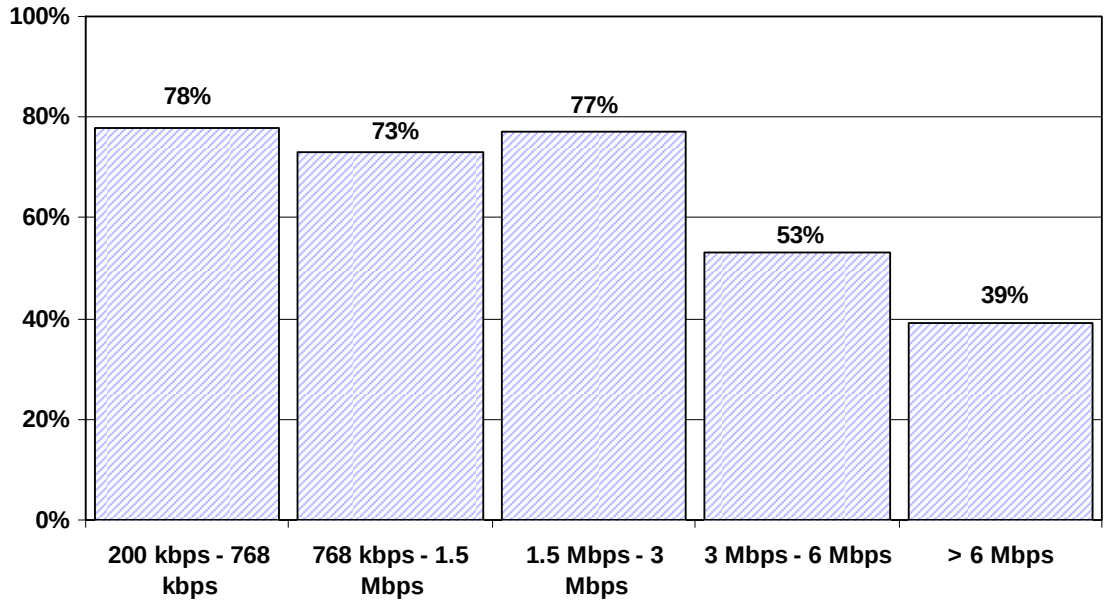
[6] For the purpose of this survey, broadband is defined as throughput of 768 kbps in at least one direction. This was the definition implemented by the FCC in 2008. According the Commission, throughput speeds of between 200 kbps and 768 kbps are classified as "first generation data" and throughputs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

[7] Percentages sum to greater than 100% as some respondents utilize more than one technology to serve their customers.

A vast majority (82%) of survey respondents are utilizing fiber fed nodes to extend the reach of DSL. Forty-six percent indicated that the average distance from the digital loop carrier (DLC) to the end user was between 15 and 18 thousand feet (kft), 24% between 9 and 15 kft, 22% greater than 18 kft and 8% 9 kft or less.

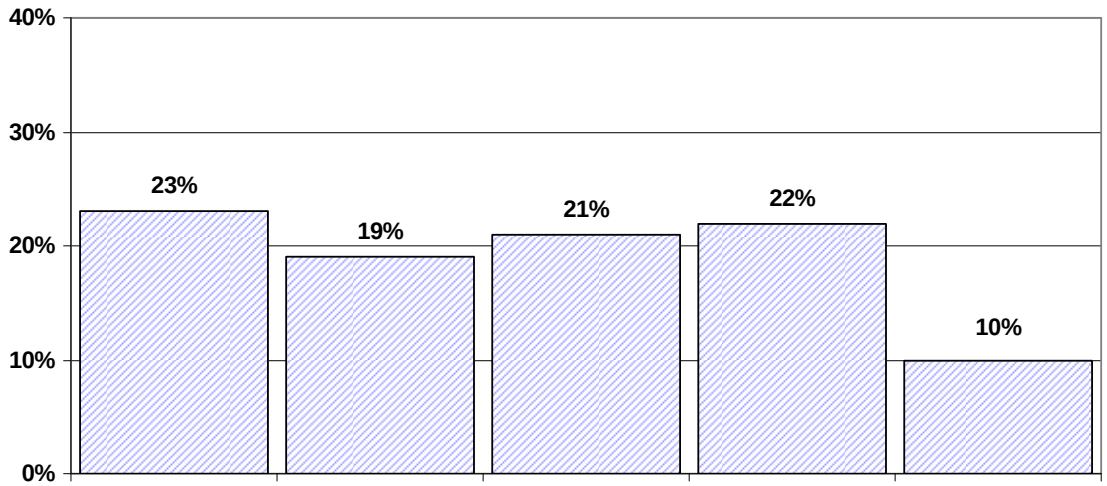
Seventy-eight percent of respondents' customers can subscribe to 200 kbps to 768 kbps service, 73% to 768 kbps to 1.5 megabits per second (Mbps), 77% to 1.5 Mbps to 3 Mbps, 53% to 3 Mbps to 6 Mbps, and 39% to greater than 6 Mbps service. (See Figure 2.)

Fig. 2: AVAILABILITY OF FIRST GENERATION DATA AND BROADBAND SERVICE



Survey results indicate an overall broadband take rate from NTCA member companies of 37%.[8] Broken down by speed tier, on average, 23% of respondents' residential customers who can receive 200 kbps to 768 kbps service subscribe, 19% subscribes to 768 kbps to 1.5 Mbps service, 21% to 1.5 Mbps to 3 Mbps service, 22% to 3 Mbps to 6 Mbps service, and approximately 10% to greater than 6 Mbps service. (See Figure 3.) Typical prices charged range from $34.95 to $44.95 for cable modem service, $39.95 to $44.95 per month for DSL service, $39.95 to $44.95 for wireless broadband service, and $44.95 to $49.95 for fiber service.

Fig. 3: RESIDENTIAL FIRST GENERATION DATA AND BROADBAND TAKE RATES
(Service taken from survey respondents only)



Forty-two percent of survey respondents indicated they offer their customers so-called "naked DSL"—DSL service without a voice component. Take rates for naked DSL service are extremely low, with 56% percent of respondents offering naked DSL reporting take rates of 1% or less.

Half of all respondents estimate that they could bring all of their customers currently receiving service between 200 and 768 kbps up to at least 768 kbps for $1 million or less.

[8] Keep in mind that the take rates provided here are for customers taking service from NTCA member companies only. Actual 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 their service area.

An additional 24% could do so for between $1 and $5 million, 11% at a cost of between $5 and $10 million, 8% between $10 and $50 million, and 8% estimate the total cost would exceed $50 million.

Internet Backbone

The typical respondent is 103 miles from their primary Internet connection. Eighty-five percent of those respondents who have recently switched Internet backbone access providers did so for price reasons, while 23% switched due to quality of service concerns and 46% for other reasons, such as reducing transport costs or obtaining diverse routing.[9] Seventy-two percent of respondents indicated they are generally satisfied with their current backbone access provider, while 20% are generally dissatisfied.

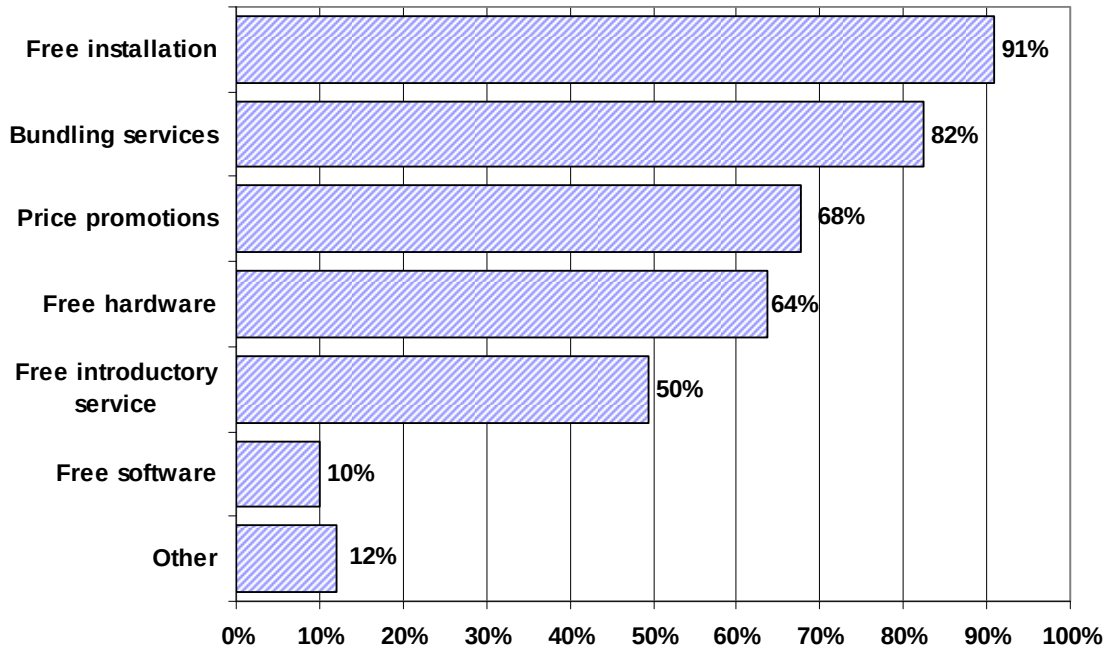
Competition/Marketing

Competition in broadband is becoming more prevalent and more varied: 89% of survey respondents indicated that they face competition from at least one other service provider in some portion of their service area. The typical respondent competes with one national ISP, two wireless Internet service providers (WISPs) and one cable company. Other competitors mentioned include electric utilities, local ISPs and neighboring cooperatives. Fifty-three percent of those respondents facing competition indicated that their competitors were serving only the cities and towns in their service areas, while 47% said that competitors were serving customers throughout their service area.

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

Rural ILECs are taking numerous steps in the marketing arena to increase broadband take rates. Ninety-one percent are offering free installation, 82% are bundling services, 68% are offering price promotions, 64% are offering free hardware, 50% offer free service for an introductory time period (such as 30 days), 10% offer free software and 12% are offering other promotions, such as payment options, direct mail marketing, or Internet training.[10] (See Figure 4.) Eighty-one percent of respondents find it difficult to compete with price promotions offered by competitors, while 52% struggle to match competitors' service bundling. Overall, 37% rate their company's marketing efforts as very successful, while 56% rate them as moderately successful.

Fig. 4: BROADBAND MARKETING PROMOTIONS



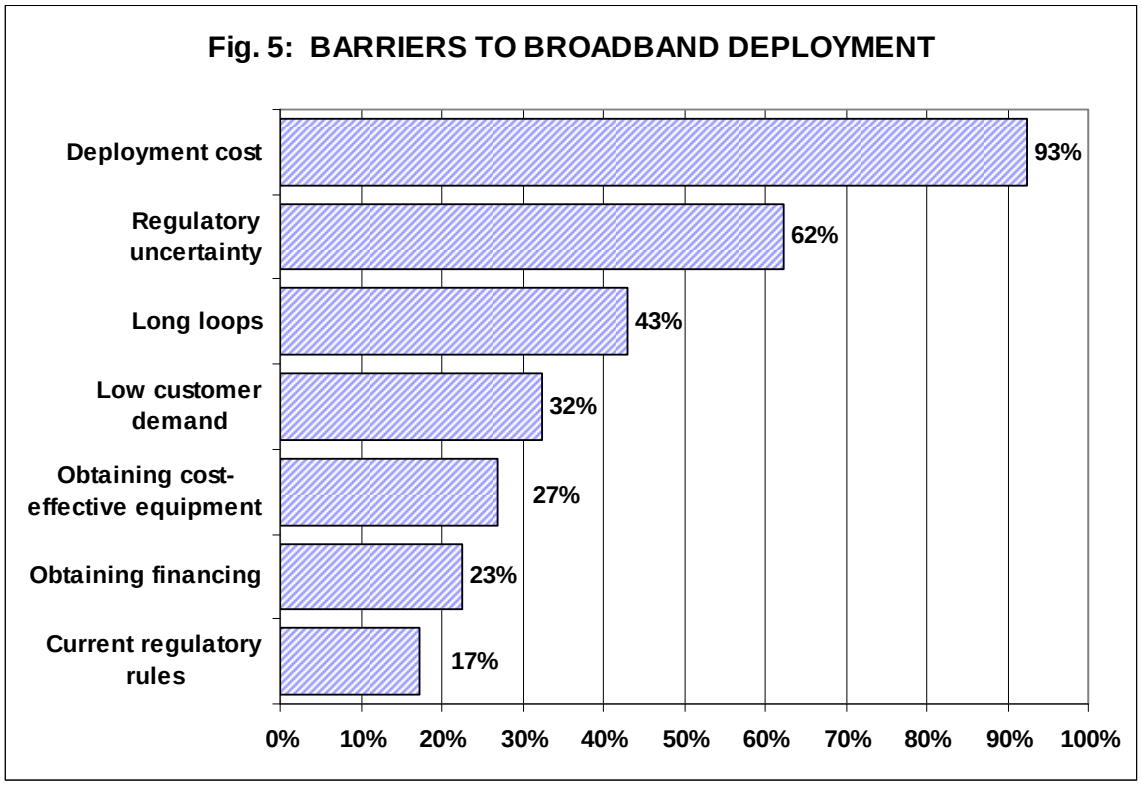
Fiber Deployment

Survey respondents described their companies' plans to deploy fiber to the curb (FTTC) and fiber to the home (FTTH) to their customers. Seventy-three 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 2011. Twenty-two percent of respondents expect to be able to provide fiber to the curb (FTTC) to at least half of their customers by

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

year-end 2011 (up from 11% last year); 55% expect to be able to offer fiber to the home (FTTH) to the same percentage (up from 26%.)

Ninety-three percent of survey respondents identified the cost of fiber deployment as a significant barrier to widespread deployment. Regulatory uncertainty was the number two barrier (62%), followed by long loops (43%), low customer demand (32%) and obtaining cost-effective equipment (27%).[11] (See Figure 5.)



VoIP

Ten percent of survey respondents currently offer voice over Internet protocol (VoIP) service to their customers, up from 6% one year ago. Fifty-four percent of respondents have plans to offer VoIP service in the foreseeable future, up from 44%. Fifty-four percent of respondents perceive VoIP to pose a significant threat to their current operations (up from 31% last year), while 29% perceive VoIP as a moderate threat (up from 22%.)

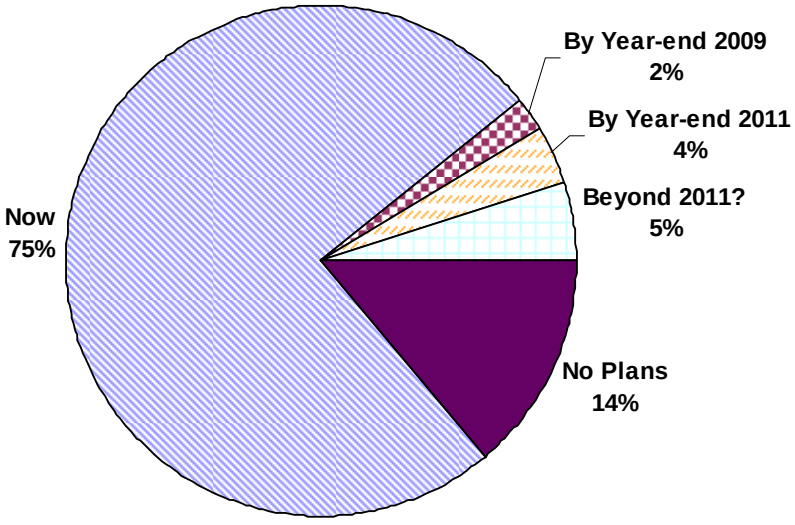
[11] Totals exceed 100% as respondents were allowed to select more than one barrier.

Video

Seventy-five percent of survey respondents offer video service to their customers (up from 68% last year.) Ninety-three percent of those offer video under a cable franchise, while none offer video as an Open Video System (OVS) pursuant to Part 76, Subpart S of the Telecommunications Act of 1996.

Of those respondents not currently offering video, 10% (2% of all respondents) plan to do so by year-end 2009, 15% (4% of all respondents) expect to do so by year-end 2011, and 20% (5% of all respondents) sometime beyond 2011. The remaining 55% of those not currently offering video (14% of all respondents) currently have no plans to offer video service. (See Figure 6.) More than nine out of ten (92%) of those planning to offer video in the future intend to offer IPTV service.

Fig. 6: OFFERING VIDEO SERVICE?



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

NTCA member companies continue to deploy fiber at an impressive pace. Nearly three-quarters of survey respondents with a fiber deployment strategy intend to offer fiber to the node to more than 75% of their customers, and 55% plan to offer fiber to the home to more than half their customers in that same time frame. This speaks well of these companies' dedication in providing state-of-the-art services to their service areas, particularly in light of the obstacles that must be overcome in deploying fiber in rural areas, namely distance, terrain and low customer density.

Survey respondents are increasing their deployment of broadband at the upper throughput levels. NTCA member companies continue to increase their deployment of high speed broadband service—53% of respondents' customers can now receive broadband service of between 3 and 6 Mbps, compared to 46% last year, and 39% can receive service in excess of 6 Mbps, compared to 25% a year ago. These gains are due in large part to the previously-noted growth in fiber deployment. As a result, survey respondents are seeing take rates in the higher speed tiers growing, as well.

Cost remains the biggest obstacle to NTCA member companies in the widespread deployment of fiber in their networks. Throughout the history of this survey, the cost of fiber deployment has been the number one obstacle facing respondents. This year is no exception—93% of survey respondents cited deployment cost as a significant impediment. This cost is exacerbated in rural areas by the barriers cited above. The continuing availability of reasonably-priced financing will be critical in allowing rural providers to continue to bring fiber, and the myriad services fiber optic cable facilitates, to their customers.

Growth in video deployment continues. Seventy-five percent of survey respondents now have a video offering, up from 68% a year ago, and an additional 11% intend to do so at some point in the future. If these providers are to be able to bring comparable video services to rural America, it will be critical that they are assured of fair treatment in their negotiations to obtain programming content.

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?

Obtaining financing in this economic downturn and changing regulations.

The obstacle is building a network that would be financially satisfying to the customer and the company.

We are deploying fiber to the home as fast as we can. The biggest problem we have is some of our customers have NO power to the ONT's.

Unreliable equipment

The cost and personal expense is expensive and will need to be done over a number of years.

We have undertaken a FTTH project to cover a radius of anything within three miles of our central office. We need more regulatory certainty that there will be cost recovery before we can extend our FTTH to our more rural areas.

Distance and cost of equipment.

Minor right-of-way issues

Sustainable revenue streams

Cuts in rates by the [state commission]

1. Cost of deployment/low density area 2. Reliance upon support mechanisms for ROI during times of regulatory uncertainty. 3. Cost of obtaining and purchasing video content. 4. No economies of scale to be realized in exchange of 450 subscribers. 5. Cable and satellite competition.

USF for rural broadband would help

178 miles to […] (where main backbone connection is), middle mile facilities are closer, yet still pricey due to population and per capita income of our customer base. Customer base is not currently requesting more speed, yet continues to maintain price is high. High price is due to having to pay settlements (of course, we do get reimbursed), our Internet wholesaler, and then adding in bandwidth costs we tend to make a little money but

greater expenses would not assist us in making things cheaper or increasing our profit margins. Closest middle mile facility is 16 miles away and requires a river bore. Getting to middle mile facilities is currently being negotiated and explored further, along with fiber to the home within the city of […].

Cost, customer density—cost per loop

Fiber to the home is very expensive to deploy (avg. cost of $6,000 per customer). We need regulatory certainty so that we are assured we can recover this investment. We need less expensive costs for fiber deployment.

Adequate and timely funding; national program for broadband USF

Equipment manufacturers unable to provide working equipment in the field.

Power outages and battery back up. Need to create a longer battery back-up solution during power outages.

We are among the first in our state to adopt fiber to the home technology. We have gone through five revisions to remain current and provide new services. We hope things have started to stabilize. The current regulatory climate is very uncertain. We need some assurance we will be able to recover our investment. We cannot do this when we are forced to let others use our broadband pipes without any form of compensation. The greatest example of this is being forced to let VoIP providers use our broadband facilities to provide services in direct competition with us. We make all the investment, they invest nothing, and they use our facilities for free. This makes a very poor business case.

Existing construction, older houses require an electrician to put in an AC outlet. Coordination of construction, doing drops and getting inside house to install battery and CAT 5 for DSL, education on FTTH as to why and the benefits and replacing battery in the future…still in the early stages of FTTH, may have a longer list next year.

Environmental—survey and treatment for American Burying Beetle and the Western Prairie Fringed Orchid.

Need better equipment.

High installation cost per subscriber with regulatory uncertainty. It's impossible to keep the DSL price low and affordable without federal support.

Cost is the main obstacle. We would have to rebuild most of our service area.

Cost is our primary obstacle. Grant funds or some other type of help in funding the project would be necessary for us to implement a widespread fiber deployment.

Return on investment. More demand from customers. Rural area, more customers per route mile.

As we move out from towns, much greater loop distances for much fewer customers.

Current deployment—access to customer premises, product issues—standards on equipment needed. Future deployment—cost of deploying to all rural areas/remote areas—universal service for broadband?

Need cost reimbursement mechanism to provide a business case for deployment

Obtaining financing in this economic downturn, and changing regulations.

Need to know that money will be there, such as USF

Cost is an obstacle. Cost recovery mechanisms to overcome this obstacle

Cost

Sustainable/predictable settlements in the regulated arena as access revenue declines. We can't invest if there is no return in sight!

Cost is the largest obstacle. Now that we have 40% of our customers on fiber, we will look closely at ways to cut costs on staking, engineering and cutover.

Time

Broadband support

Finalize USF reform so a company can know what to expect for its revenue stream.

Rocky terrain is very expensive to navigate.

ROI

Return on investment

We have constructed by approx. 7000 subs and have approximately 2000 customers working on FTTP. Being an early adopter we encountered interoperability issues but have resolved them and everything is working fine now.

Cost of implementing versus the profit made from the project.

High cost to deploy

Cost of deployment per customer. Need guaranteed cost recovery.