



December 18, 2013

Ex Parte Notice

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: *Connect America Fund, WC Docket No. 10-90; High-Cost Universal Service Support, WC Docket No. 05-337; AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition; Petition of NTCA for a Rulemaking to Promote and Sustain the Ongoing TDM-to-IP Evolution, GN Docket No. 12-353; Technology Transitions Policy Task Force, GN Docket No. 13-5; Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, GN Docket No. 12-268*

Dear Ms. Dortch:

On Tuesday, December 17, 2013, Shirley Bloomfield, Chief Executive Officer of NTCA–The Rural Broadband Association (“NTCA”), and the undersigned met with Ruth Milkman, Chief of Staff to Chairman Wheeler, and Daniel Alvarez, Legal Advisor for Wireline, Public Safety, and Homeland Security to the Chairman, regarding matters in the above-referenced proceedings. Materials provided in the meeting are enclosed with this letter.

First, we discussed how best to re-start and stimulate effective investment in broadband-capable networks by rate-of-return-regulated rural local exchange carriers (“RLECs”). Consistent with prior presentations, NTCA discussed how the Federal Communications Commission (the “Commission”) should address uncertainty arising out of the application of quantile regression analysis-based caps and other measures to ensure predictability in universal service support. *See Ex Parte* Letter of Michael R. Romano, Senior Vice President-Policy, NTCA, to Marlene H. Dortch, Secretary, Commission, WC Docket No. 10-90, *et al.* (filed Nov. 26, 2013), at 2 and 8. NTCA also emphasized the importance of updating and refining the rules governing universal service support in areas served by rate-of-return-regulated rural local exchange carriers to facilitate consumer choice, stimulate sustainable adoption of broadband, and enable meaningful participation by consumers in such areas in the ongoing “IP evolution.” We noted that NTCA and other stakeholders had submitted detailed rules explaining how such updates could transition legacy support mechanisms to a Connect America Fund for the benefit of consumers in areas served by RLECs. *See* Comments of NTCA, *et al.*, WC Docket No. 10-90 (filed June 17, 2013), at 1-10 and Attachment 1; Reply Comments of NTCA, *et al.*, WC Docket No. 10-90 (filed July 15, 2013), at 1-9 and Attachment 1.

Marlene H. Dortch
December 18, 2013
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We further discussed the interest of many NTCA members and other smaller carriers in providing wireless services, and particularly their interest in participating in upcoming spectrum auctions. NTCA highlighted the proposal and supporting analysis that it had filed jointly with the Rural Wireless Association, which should help satisfy the fiscal objectives of the auctions while also ensuring that spectrum is most effectively utilized to serve *all* consumers, urban and rural. *See Ex Parte* Letter of Caressa D. Bennet, General Counsel, Rural Wireless Association, Inc., and Jill Canfield, Director, Legal & Industry and Assistant General Counsel, NTCA, to Marlene H. Dortch, Secretary, Commission, WT Docket No. 12-268 (filed Dec. 6, 2013).

Finally, consistent with prior *ex parte* communications, we urged reconsideration of the elimination of Safety Net Additive support for companies that qualified based upon investments during 2010 and 2011. *See, e.g., Ex Parte* Letter of Michael R. Romano, Senior Vice President-Policy, NTCA, to Marlene H. Dortch, Secretary, Commission, WC Docket No. 10-90, *et al.* (filed July 26, 2013), at 2.

Thank you for your attention to this correspondence. Pursuant to Section 1.1206 of the Commission's rules, a copy of this letter is being filed via ECFS.

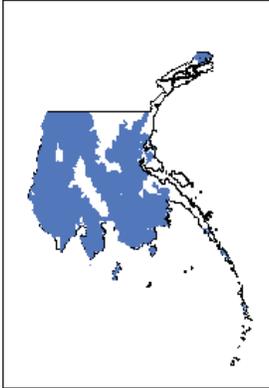
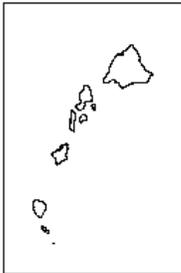
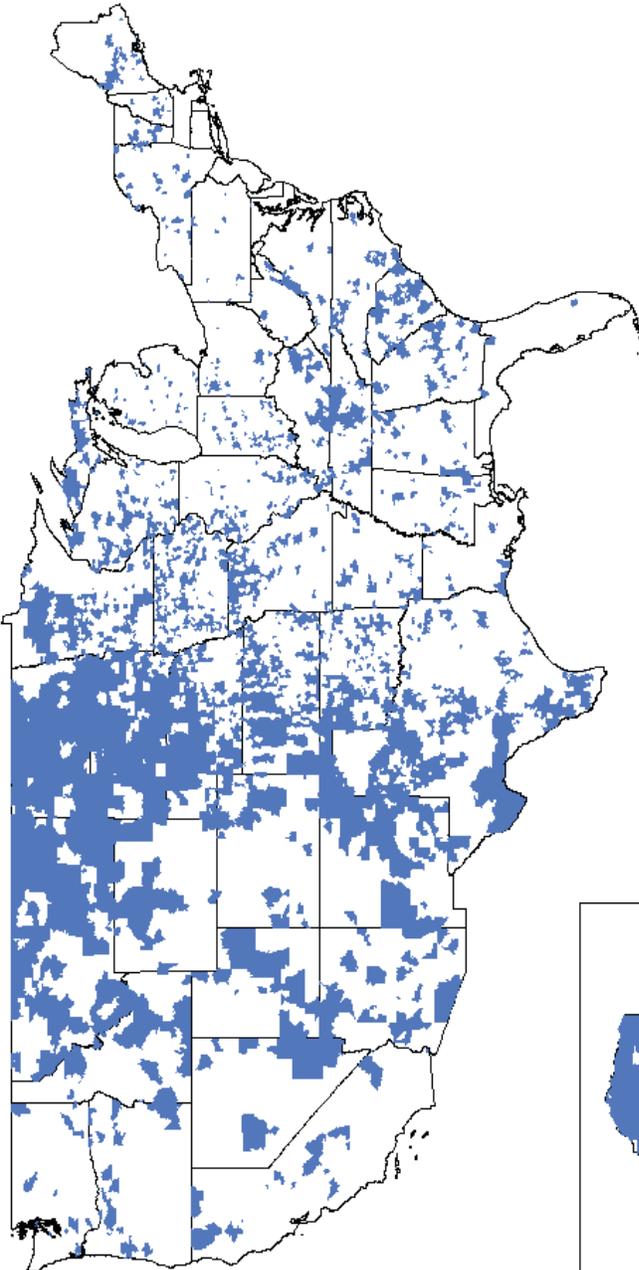
Sincerely,

/s/ Michael R. Romano
Michael R. Romano
Senior Vice President – Policy

Enclosures

cc: Ruth Milkman
Daniel Alvarez

NTCA-The Rural Broadband Association



Sources: Nielsen, LERG, NTCA and NECA
Tariff F.C.C. No. 4



NTCA 2012 BROADBAND/INTERNET AVAILABILITY SURVEY REPORT

March 2013

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, richards@ntca.org).

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EXECUTIVE SUMMARY

For the more than a decade, 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 late fall and early winter of 2012, NTCA sent an electronic survey form to each of the companies in NTCA’s e-mail database; 132 members (25%) responded.

One hundred percent of the 2012 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.¹ 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: 88% of those who offer broadband utilize copper loops (only 29% of 1999 survey respondents offered DSL service), 74% fiber to the home (FTTH), 48% fiber to the node (FTTN), 16% cable modem, 15% licensed fixed wireless, 14% unlicensed fixed wireless, and 7% satellite. Seventy-four percent of 2012 survey respondents provide broadband via both digital copper loops and fiber broadband service, while 14% offer digital copper loops but not fiber and only 10% fiber but not digital copper loops.

Eighty percent of respondents’ customers can receive 200 to 768 kilobits per second (kbps) downstream service, 83% 768 kbps to 1.0 megabits per second (Mbps), 76% 1.0 to 1.5 Mbps, 76% 1.5 to 3.0 Mbps, 67% 3.0 to 4.0 Mbps, 65% 4.0 to 6.0 Mbps, 51% 6.0 to 10.0 Mbps, and 40% greater than 10.0 Mbps. The overall take rate for broadband service is 69%.

The typical respondent is 79 miles from its primary Internet connection. Eighty-nine percent of those who recently changed backbone providers did so for price reasons. Eighty-five percent of respondents indicated they are generally satisfied with their current backbone access provider, while 15% 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 fixed and/or 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

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.

introductory service and free education and training. More than half of respondents find it difficult to compete with price promotions offered by competitors.

Fifty-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 2015, while 61% plan to offer fiber to the home to at least 50% of their customers over the same time frame. Deployment cost remains the most significant barrier to widespread deployment of fiber, followed by regulatory uncertainty, long loops, current regulatory rules, low customer demand, obtaining financing, and obtaining cost-effective equipment. Throughout the history of the survey, deployment cost has been respondents' most significant concern.

Fifteen percent of respondents currently offer voice over Internet protocol (VoIP) service, up slightly from 11% last year. Forty-seven percent of respondents not currently offering VoIP have plans to do so in the foreseeable future, virtually unchanged from last year. Seventy-nine percent of respondents offer video service to their customers, up slightly from 72% last year.

INTRODUCTION

In the late fall/early winter of 2012, 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, and at the time the survey was conducted served approximately 575 local exchange carriers in 44 states that provide service primarily in rural areas.² 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.³ 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 This survey was conducted prior to NTCA's unification with OPASTCO which took place in March 2013. All demographics provided here are those of pre-unification NTCA.

³ Copies of this and previous NTCA survey reports may be downloaded from the NTCA web site, www.ntca.org.

OVERVIEW OF SURVEY

The 2012 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 132 member companies, a 25% response rate.⁴

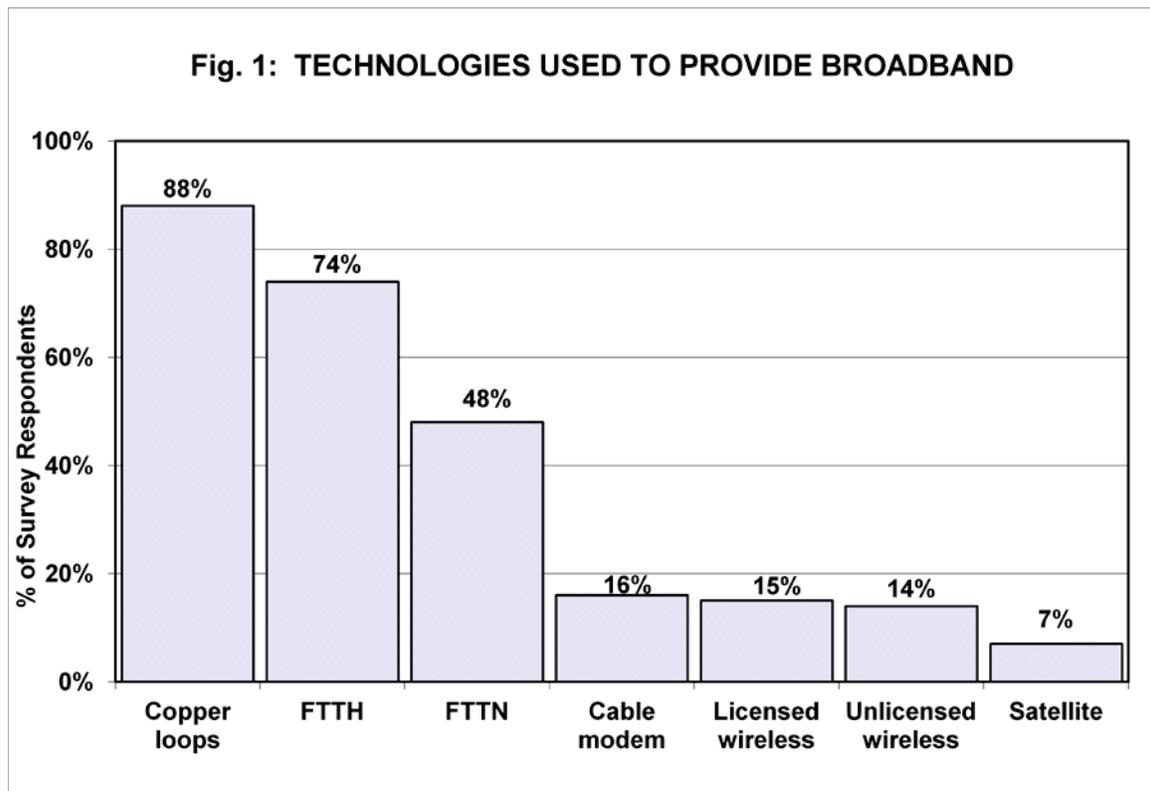
Forty-five percent of survey respondents' service areas are 500 square miles or larger; 19% are at least 2,000 square miles. Nearly three-quarters—71%—have customer densities in their service area of 10 residential customers per square mile or less. More than one-fourth—28%—have customer densities of two residential customers per square mile or less.

The average survey respondent serves 4,259 residential and 1,428 business voice grade access lines; a few larger companies skew these numbers upward, hence the median respondent serves 1,785 residential and 443 business lines. One hundred percent of survey respondents offer broadband⁵ service to some part of their customer base. 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: 88% utilize digital copper loops, 74% fiber to the home (FTTH), 48% fiber to the node (FTTN), 16% cable modem, 15% licensed fixed wireless, 14% unlicensed fixed wireless, and 7%

⁴ Based on the sample size, results of this survey can be assumed to be accurate to within $\pm 7\%$ at the 95% confidence level.

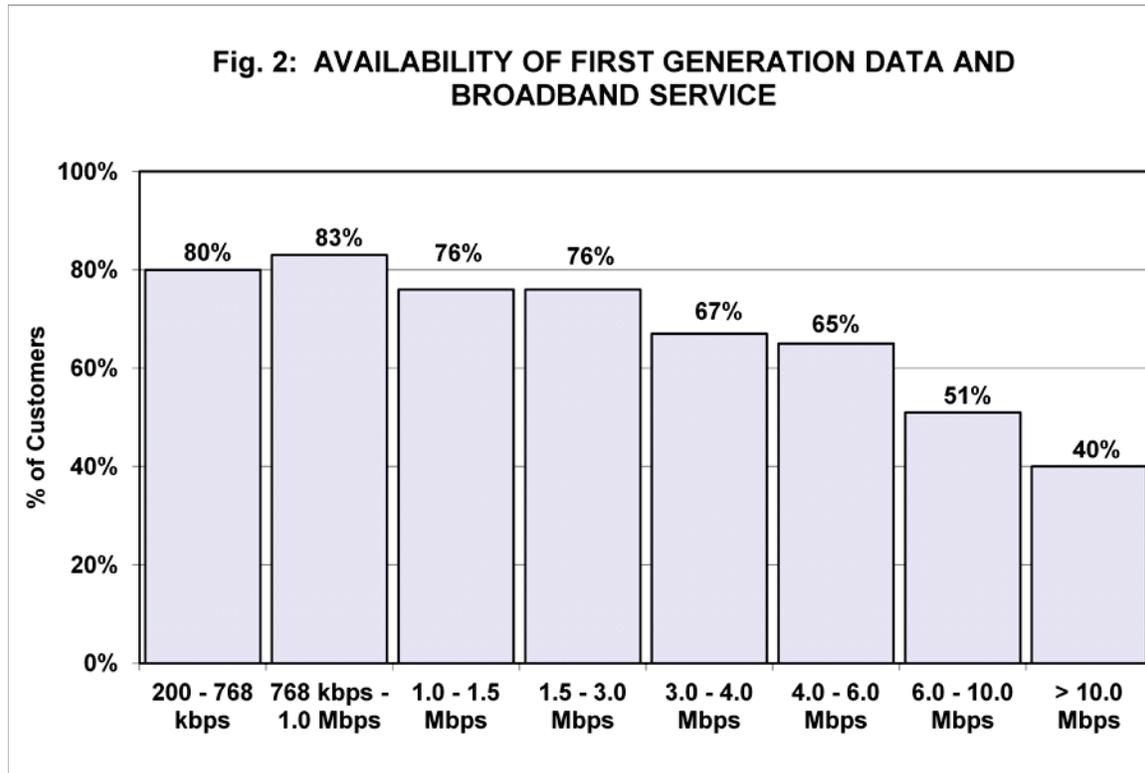
⁵ For the purpose of this survey, broadband is defined as throughput of 768 kbps in at least one direction. This was the definition implemented by the FCC in 2008. According to the Commission, throughput speeds of between 200 kbps and 768 kbps are classified as "first generation data" and throughputs between 768 kbps and 1.5 Mbps are classified as first tier "basic broadband." This report adopts those FCC conventions.

satellite.⁶ (See Figure 1.) Eighty-nine percent of survey respondents are providing either FTTN, FTTH or both, a significant increase from 67% in the 2011 survey and 68% in 2010. Seventy-four percent of survey respondents provide both digital copper loops and fiber broadband service, while 14% offer digital copper loops but not fiber and 10% fiber but not digital copper loops. Thus, ninety-eight percent of those respondents that offer broadband service include either digital copper loops, fiber, or both among their service offerings.



⁶ 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.

Eighty percent of respondents’ customers can subscribe to 200 kbps to 768 kbps downstream service, 83% to 768 kbps to 1.0 megabits per second (Mbps), 76% to 1.0 to 1.5 Mbps, 76% to 1.5 to 3.0 Mbps, 67% to 3.0 to 4.0 Mbps, 65% to 4.0 to 6.0 Mbps, 51% to 6.0 to 10.0 Mbps, and 40% to greater than 10 Mbps service. (See Figure 2.)



Survey results indicate an overall broadband take rate from NTCA member companies of 69%, up from 66% a year ago.⁷ 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 service.

Fifty percent of survey respondents indicated they offer their customers so-called “stand alone DSL”—DSL service without a voice component. Take rates for stand alone DSL service are relatively low, with the majority of those respondents offering stand alone DSL reporting take rates of 5% or less.

⁷ 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 higher, as survey respondents may be joined by a variety of competitors in the provision of broadband services within portions of their service area.

Twenty-seven percent of 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 30% could do so for between \$1 million and \$10 million, 15% at a cost of between \$10 million and \$20 million, 9% between \$20 million and \$50 million, and 18% estimate the total cost would exceed \$50 million.

Internet Backbone

The typical respondent is 79 miles from its primary Internet connection. Eighty-nine percent of those respondents who have recently switched Internet backbone access providers did so for price reasons, while 22% switched due to quality of service concerns and 17% for other reasons, such as obtaining diverse routing or gaining the ability to access the Internet backbone using Ethernet transport.⁸ Eighty-five percent of respondents indicated they are generally satisfied with their current backbone access provider, while 15% are generally dissatisfied. More than three-quarters of all survey respondents expect to need additional backbone capacity in one year or less.

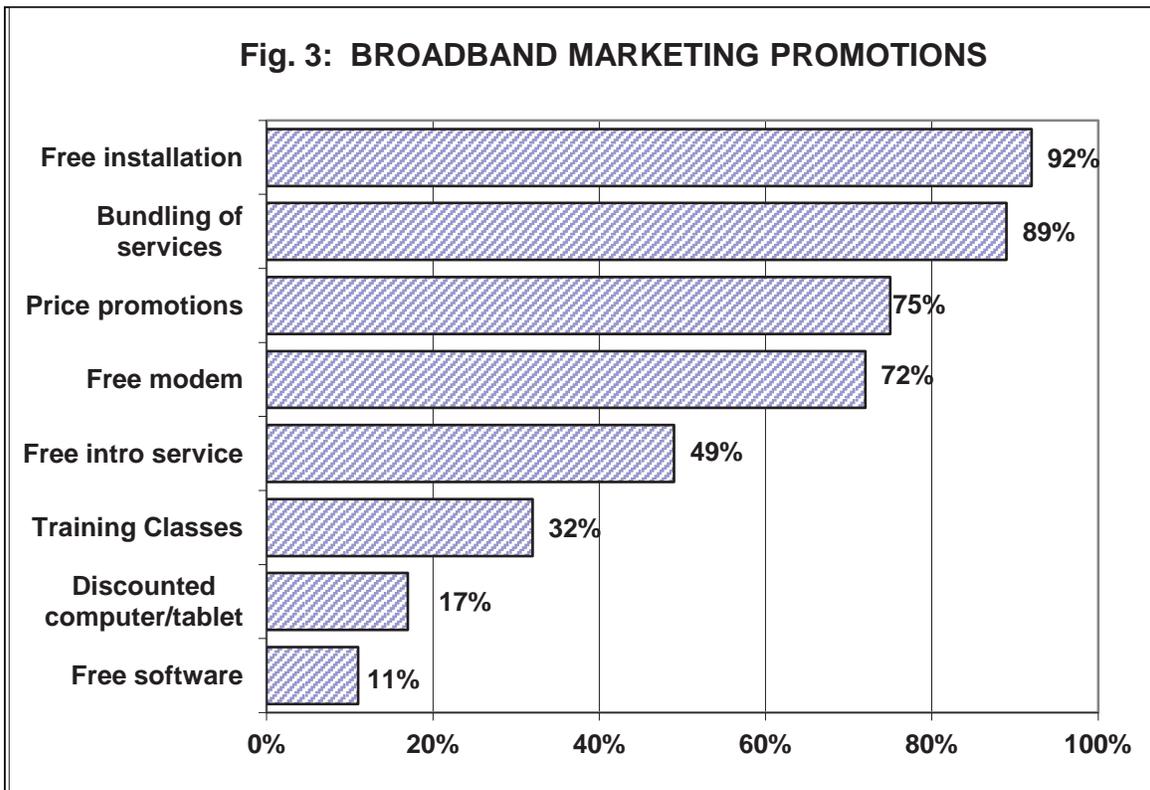
Competition/Marketing

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, fixed and/or mobile wireless Internet service 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. Ninety-two percent are offering free installation, 89% are bundling services, 75% are offering price promotions, 72% are offering free modems, 49% are offering free service for an introductory time period (such as 30 days), 32% are offering free education/training classes, 17% are offering discounted computers or tablets, and 11% are offering free software.⁹ (See Figure 3.) Fifty-six percent of respondents find it difficult to compete with price promotions offered by competitors, while 39% struggle to match competitors' service bundling. Respondents consider their bundling of services, free installation and price promotions to be their most effective marketing promotions.

⁸ Totals exceed 100% as respondents were allowed to select more than one reason for switching providers.

⁹ Totals exceed 100% as respondents' companies may be offering more than one marketing promotion.



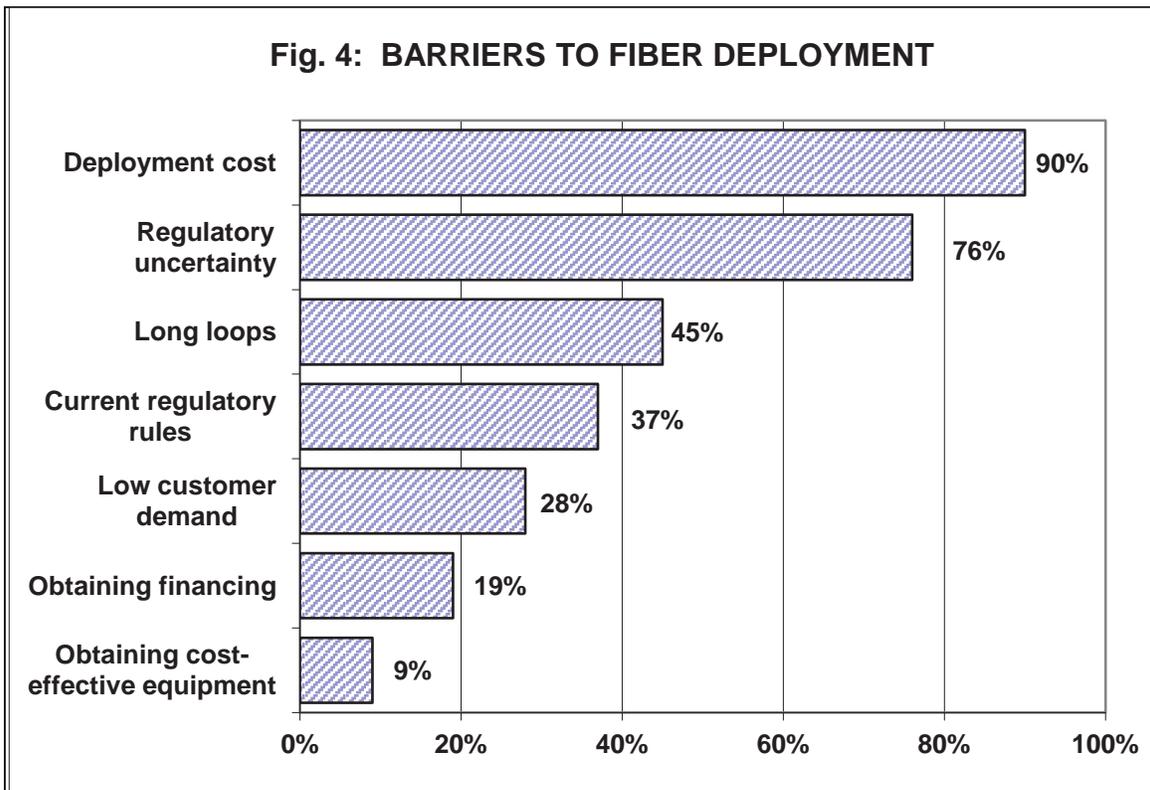
Fiber Deployment

Thirty-three percent of those survey respondents currently deploying fiber serve at least 50% of their customers using fiber to the home, while 37% 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-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 2015. Sixty-one percent of respondents expect to be able to provide FTTH to at least half of their customers by year-end 2015 (up from 46% last year.)

Ninety percent of survey respondents identified the cost of fiber deployment as a significant barrier to widespread deployment. Regulatory uncertainty was the number two barrier (76%), followed by long loops (45%), current regulatory rules (37%), low customer demand (28%), obtaining financing (19%), and obtaining cost-effective equipment (9%).¹⁰ (See Figure 4.)

¹⁰ Totals exceed 100% as respondents were allowed to select more than one barrier.



Other Services

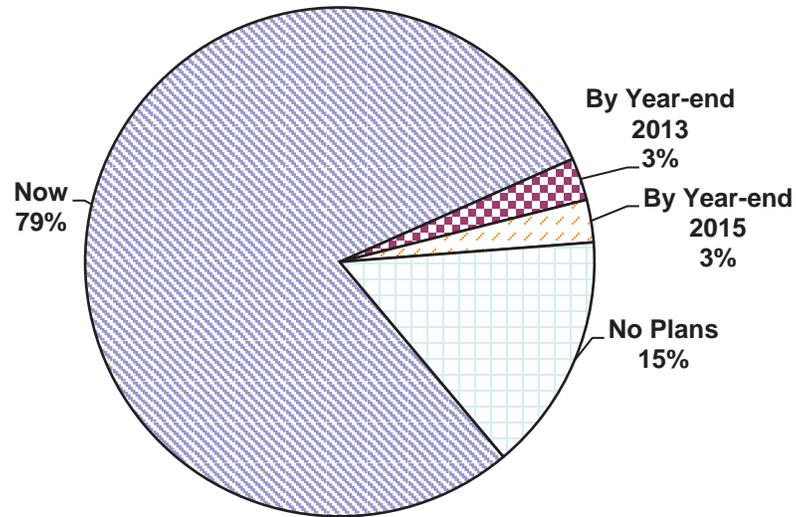
- **VoIP**

Fifteen percent of survey respondents currently offer voice over Internet protocol (VoIP) service to their customers, up from 11% one year ago. Forty-seven percent of those respondents not currently offering VoIP have plans to do so in the foreseeable future, unchanged from last year.

- **Video**

Seventy-nine percent of survey respondents offer video service to their customers. Thirteen percent of those respondents not currently offering video (3% of all respondents) plan to do so by year-end 2013, and another 13% expect to do so by year-end 2015. The remaining 73% of those not currently offering video (15% of all respondents) currently have no plans to offer video service. (See Figure 5.) Half (50%) of those not currently offering video intend to offer Internet protocol television (IPTV) service in the foreseeable future.

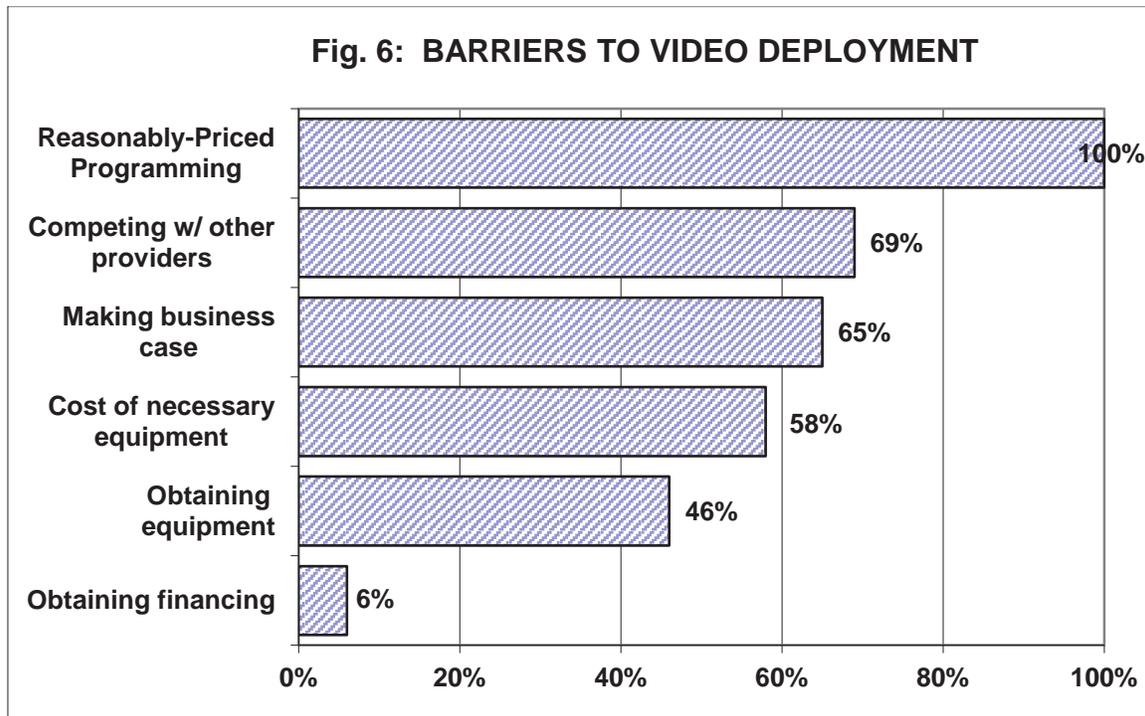
Fig. 5: OFFERING VIDEO SERVICE?



Of those respondents currently offering video services, 76% offer legacy coax (CATV) service, while 55% offer IPTV and 5% offer direct broadcast satellite (DBS).¹¹ Fifty-eight percent of those providing CATV service use an analog system, while 42% use a digital system. The average respondent offers their customers three “tiers” of entertainment television packages from which to choose, down from four last year.

The main barrier facing those survey respondents providing video service is access to reasonably-priced programming, as cited by 100% of survey respondents. Sixty-nine percent cited difficulty competing with other providers, 65% the challenge of making a business case for video service, 58% the cost of necessary equipment, 46% difficulty obtaining necessary equipment, and 6% difficulty obtaining necessary financing. (See Fig. 6.)

¹¹ Totals exceed 100% as respondents may offer more than one type of 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

Regulatory uncertainty is an increasingly serious problem for rural carriers.

Though deployment cost retains its long-held position as the top barrier facing survey respondents, regulatory uncertainty is a strong number two, cited by more than three-quarters (76%) of all respondents, up from 67% last year. More telling are the open-form answers to a question about challenges being faced, presented in Appendix A of this report. It is patently clear from these answers that regulatory uncertainty is a major impediment to providers, and weighs heavily upon their minds. More importantly, the uncertainty is leading to carriers slowing their forward progress by cancelling or postponing planned projects. Paradoxically, this is the exact opposite of the intent of the

proposed reforms that are the source of the lion's share of uncertainty. Until regulations are imposed that allow carriers to plan their future with some degree of certainty, the telecommunications industry in rural America will not be able to realize its full potential.

In spite of the uncertainty, fiber deployment continues to grow at an impressive rate. Seventy-four percent of respondents in this year's survey offer fiber to the home to some portion of their customer base (up from 64% last year), and 48% offer fiber to the node (up from 29%.) A fiber network is absolutely essential for those providers who wish to offer their customers today's state-of-the-art, bandwidth intensive services. A carrier's decision to deploy capital-intensive fiber plant can only be made with some reasonable certainty of ongoing viability and stability.

Access to fairly-priced video content is a universal impediment for survey respondents. As video increasingly becomes a "must have" service, the stakes become even higher for small carriers trying to negotiate fair prices for video content. Every single respondent to this survey---100%--cited obtaining access to reasonably-priced content an impediment to their provision of video services. The ability to obtain fairly-priced video content will be critical for rural providers' ability to survive and compete.

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?

[My company's] major obstacle is the availability of money to fund the deployment of FTTH in a reasonable time frame. We applied to RUS for a loan to cover our FTTH project about two years ago and are struggling through the process (still no approval/rejection decision). RUS' major concerns are the reduced revenues and uncertainty that result from the FCC's 2011 access reform order. Once the funds are available we could be 100% FTTH within three years.

High cost, low density service area. We need predictable, sufficient and specific USF support.

It all comes down to predictable future recovery. How are we to invest with such a volatile, unknown future they have thrown at us?

The changes in revenue sources (i.e., USF and ICC) make the future too uncertain to spend additional monies on deploying Fiber-to-the-Home (FTTH).

We have installed fiber to about half our customers in [a particular town.] We are waiting for the right financial time. So much is in flux with our revenues right now with the government that we are in a hold pattern until things are more certain.

Our biggest obstacle is cash flow. We currently have a loan with CoBank that will not be paid off until 2018 or so. Management has decided that with the uncertainty created with all of the changes at the FCC, along with our state PUC, all future construction will be funded with cash on hand. They do not want to run the risk taking on additional debt not knowing if the funds will be there in the future to pay off the debt. This has significantly reduced the number of construction projects that we can undertake and has pushed back other projects' start dates.

As we deploy fiber deeper into our network, customer density continues to become more of an issue. The number of customers that we can reach with a mile of fiber continues to go down as we get deeper into our network. Unfortunately, the risk of not being able to recover the cost of these customers is beginning to outweigh the reward of getting them on our fiber network.

My brief answer for the CLEC: Insufficient return on investment (not enough return for rural CLEC's to become very aggressive with fiber deployments). My ILEC answer is: Concerns about future return on investment (in lieu of reasonable and stable subsidy system).

We started our fiber to the home deployment in 2005 in a staged rollout. We did the in-town customer in 2005/2006, then started our rural deployment in a two phase project starting in 2008 and finishing phase two construction in 2009, with final customer cutover to the new

FTTH being completed in 2011. We used RUS financing in all three projects with no issues. Our story has been one of success and no real problems. We have now started to venture outside of our LEC area with a redundant fiber route that has given us access to new business opportunities on the non-regulated side of the business and this is also turning into a success.

A broadband based versus landline based recovery system. We still require a landline for any customer who wants to subscribe to Internet and likely turn away customers every day who do not want to pay for a landline. Unfortunately, the NECA tariff is not conducive to offering a naked DSL product. In order to make the investment in fiber deployments there must be some sort of recovery based upon broadband usage or broadband customers. Cash flow – the large up-front investment makes cash flow tight.

First part response: Dollars and Sense and not Dollars and Cents would be my answer. It takes a lot of \$\$\$\$ to do a project such as FTTH or FTTN. It also has to make sense to do for your company. If switching and access revenues go away it makes it very hard to do projects such as this. Second part response: Continued support from USF, financing with low interest rates and funding from RUS, population growth not dwindling population, video service from programmers without 10-20% increase each year. Customers willing to pay for the bandwidth they are using in their home and not a one rate for whatever they want to use. Being able to compete with our local/state networks to provide backhaul opportunities to other carriers or big businesses. With all of this I can do a better job of attracting new and small businesses to my communities I serve.

Lack of affordable middle mile transport (currently satellite only) eliminates the need for fiber distribution network. Copper is sufficient. Need fiber middle mile to change economics.

[My company] spent \$4m putting in a FTTN system about 5yrs ago. We offer DSL at a variety of speeds and currently meet the FCC's numbers. Out of 1200 customers – only 5 take the 10 MB package and none are taking anything faster. Although my response to “what is your 5 year plan?” is “we’re built out” I’m told this will not suffice. With the competition of two 4G choices, satellite and a Motorola canopy system in place in our area, a fiber to the home plant would still face competition and I fear would bankrupt us. Our FTTN build will take 15 years to get a return on investment and FTTH would add at least another 20 (if we don’t lose any customers.) And the massive increases in TV programming costs are making video no longer a viable product. We will probably start putting interduct in ground anyway but my customers just won’t spend anything more than they are now. I would be ahead to just lower my price and not do anything than take on heavy debt. They are ditching cable and Dish to watch Netflix, though, so my mind might change soon.

Our obstacle is financing, and a predictable return on investment would be the solution to overcome this.

Clearly cost of construction and implementation is the biggest issue. Cost recovery mechanisms like Universal Service or government grants are necessary for widespread FTTH deployment in rural areas. Competitive rate structure requirements for content providers would provide substantial cost relief in the video offering capabilities of provider companies. Elimination of penetration requirements would be the mother ship of reducing costs.

Uncertainty over USF funding and a dearth of revenue streams for broadband services makes it difficult to forecast revenues in the future that will allow for more long term business planning and capital expenditures. The FCC has made a decision, and in my opinion the correct one, that access revenues will be phased out over time due to declining minutes and technology changes that allow for voice services to simply be an application on the broadband network. However, what they fail to understand is that without replacing this revenue stream with a comparable one on the broadband network compromises the long term viability of these networks. Just like with traditional long distance voice service, it was understood that all parties who receive financial compensation for use of the network have an obligation to fund an appropriate share of that network for everyone's benefit. The fact that there is no consideration of broadening the base for users of broadband services (i.e. benefactors such as fee based websites) who use the broadband network for financial benefit have an obligation to pay for an appropriate share of that network as well. If all users of the broadband network who receive financial benefit fund the network, it will be more robust and provide for lower retail prices that will lead to more ubiquitous adoption and use by the general public.

There are several obstacles [my company] is encountering: 1. Sparsely populated area; 2. Cost to provide fiber; 3. Keeping services affordable in a limited income area; and 4. Recovery of expense to provide fiber. Conditions that would need to change: 1. Support from FCC/NECA/etc. to recover cost; 2. Majority of our subscriber base wanting higher broadband speeds; 3. Support to keep monthly services affordable.

It's pretty simple for us. The issues are the overall high cost to install fiber to very sparsely populated areas, and having a viable funding mechanism that would give us anything close to a viable ROI for that investment.

Enormous costs associated with materials, construction, and installation. We need more long-term certainty about revenue streams impacted by USF/ICC reform.

Obstacles are primarily construction costs and limited universal service funding. CAF funding for rate-of-return carriers focused on speed goals comparable to urban areas is needed to overcome this obstacle.

The FCC has hampered [my company's] ability to provide fiber to the home/business because of the ICC/USF Reform Order. [We] filed a Petition for Waiver with the FCC



which is pending a decision from them since June, 2012. Providing fiber to our customers would be part of [our] long range plan absent the Order.

To make a long answer short; under present circumstances, it is cost and lack of funds that prevent [my company] from deploying fiber to all our customers. A remedy to this situation would be for the FCC to grant its waiver to [my company] so that it can meet the FCC's objective of deploying broadband to a larger percentage of its customer base.

The biggest obstacle is the continued uncertainty coming from the FCC. We have the need to deploy fiber because our copper plant is 40 years old. We have an RUS loan to fund the project. But I can't determine if we can actually pay the loan back.

Cost recovery in order to repay loans.

NTCA 2012 WIRELESS SURVEY REPORT

September 2012

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) or Jill Canfield at NTCA (703-351-2020, jcanfield@ntca.org).

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EXECUTIVE SUMMARY

In the early summer of 2012 the National Telecommunications Cooperative Association (NTCA) surveyed its members on their activities in the area of providing wireless services to their customers. The survey was sent to each of the companies in NTCA's membership database; 108 members (21%) responded.

Fifty-seven percent of survey respondents indicated that they hold at least one wireless license below 2.3 GHz; 29% hold at least one license above 2.3 GHz. Sixty-two percent are providing wireless service to their customers.¹ Seventy-seven percent of those providing wireless service offer fixed broadband, 64% mobile voice, and 54% mobile broadband. Thirty-eight percent of survey respondents not currently offering wireless service are considering doing so.

The average total (cumulative) investment in wireless facilities, excluding spectrum, is \$11.7 million; average total (cumulative) investment in spectrum totaled \$1.4 million.

Sixty-six percent of survey respondents characterized the process of obtaining financing for wireless projects as "somewhat difficult" or "very difficult;" 25% characterized the process as "relatively easy."

Forty-five percent of respondents are utilizing unlicensed spectrum to provide some wireless services, despite problems such as interference.

Ninety-two percent of all respondents indicated that competition from nationwide carriers was their greatest concern, 69% selected the ability to make necessary investments to be able to offer the latest services, 61% handset/equipment availability, 58% the ability to negotiate roaming agreements with national carriers, and 50% the ability to obtain spectrum at auction.²

Sixty-nine percent of survey respondents categorized their experience in negotiating data roaming and in-market roaming agreements with other carriers as moderately to extremely difficult.

Fifty-two percent of those respondents who have a reciprocal roaming agreement with another carrier indicated that they pay about as much as they themselves are paid, while 33% pay more and 14% pay less.

Thirty-one percent of those survey respondents offering wireless resell another carrier's service under their own brand, 5% do so under a national brand. Fifty-eight percent sell

¹ Includes respondents utilizing unlicensed spectrum to provide wireless service.

² Totals exceed 100% as respondents were allowed to select more than one concern.

service for which they own spectrum under their own brand, and 5% do so under a national brand. Fifty-one percent find it difficult to compete with promotions offered by the national carriers.

Ninety-seven percent of all respondents offer their customers wireless customers voice mail. Ninety-four percent offer text messaging, 90% offer Internet access, 87% family plans and caller ID, 77% offer unlimited local calling, and 74% three-way calling, bonus minutes, and ring tones. Seventy-four percent of survey respondents experience annual customer churn of less than 10%, while 27% reported annual churn of between 10% and 25%. These figures are well below the FCC's reported industry annual average of between 18% and 40%.

INTRODUCTION

In the early summer of 2012, the National Telecommunications Cooperative Association (NTCA) surveyed its members on their activities in the areas of providing wireless services to their members/customers. NTCA is a national association of more than 570 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 (“Act”). While some offer local exchange service to as few as 44 lines and a small handful to 50,000 or more, nearly 50% of NTCA members serve between 1,000 and 5,000 lines. 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 wireless survey is a follow-up to a similar survey last conducted by NTCA in 2011, and seeks to build upon the results of that survey.³

OVERVIEW OF SURVEY

The 2012 NTCA Wireless Survey was conducted online. Member companies were provided with a URL through which they could access the survey. Every effort was made to minimize the reporting burden on the survey respondents.

The survey itself was organized into two sections. The first section was comprised of general questions about the respondent’s current operations and future plans. The second section, which applied only to those respondents providing CMRS services to their customers, asked more specific questions about technology, customers, revenues, features offered, and capabilities.

SURVEY RESULTS

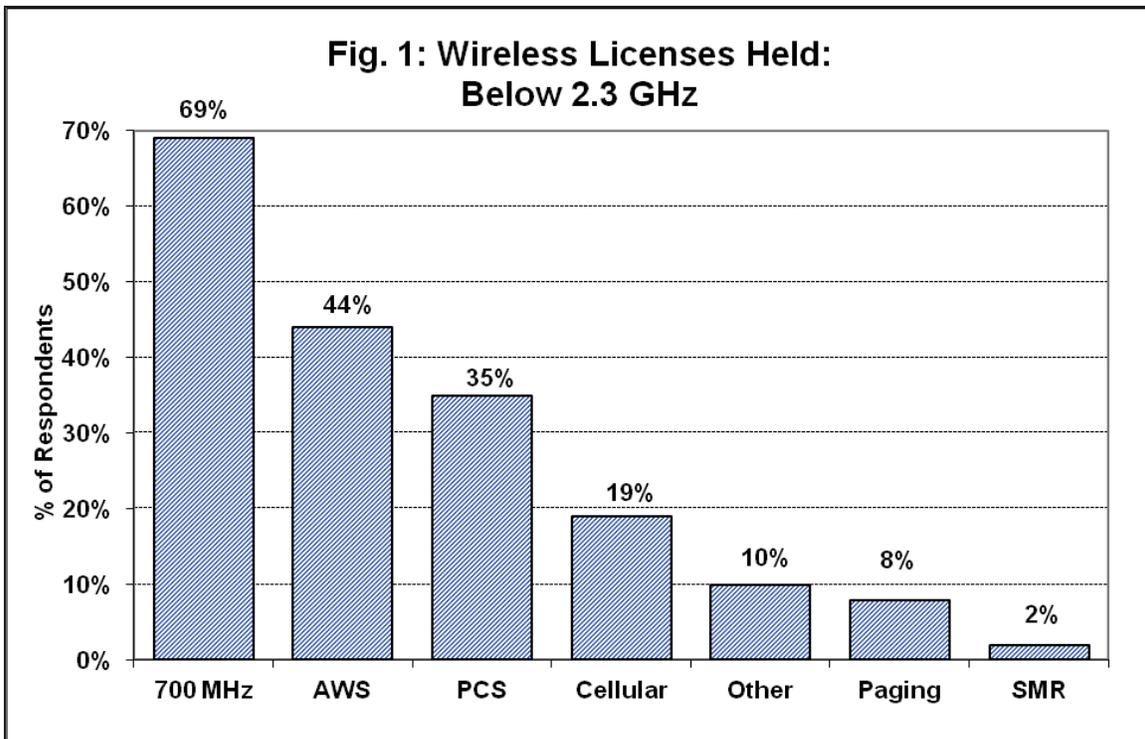
The survey URL was distributed via email to all of the NTCA member companies in NTCA’s database. The messages contained instructions for online access to the survey. Responses were received from 108 member companies, a 21% response rate.⁴

³ Copies of this and previous NTCA survey reports may be downloaded from the NTCA website, www.ntca.org.

⁴ Response rate is calculated based on the number of verified email addresses in NTCA’s member database. Based on the sample size, results of this survey can be assumed to be accurate to within $\pm 8\%$ at the 95% confidence level.

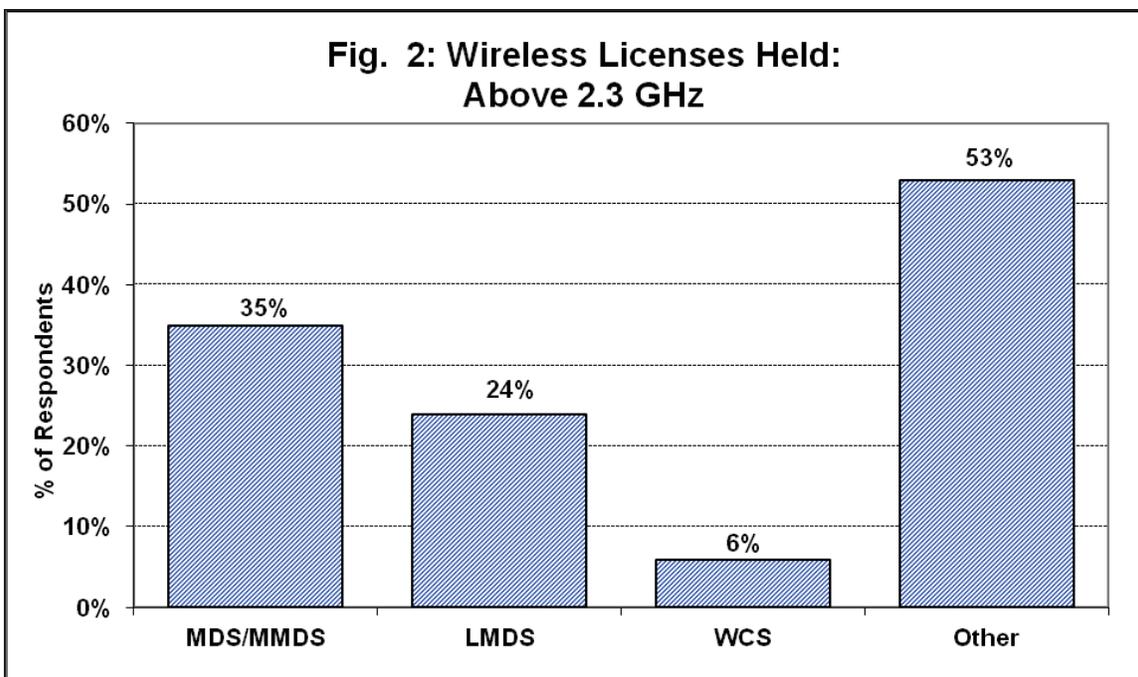
Survey responses were received from companies in 34 states. While those respondents providing wireless services range in size from approximately 5 wireless customers to almost 100,000, the average respondent served just over 9,000 wireless customers. This heterogeneity in size and geographic location mirrors that of NTCA’s membership as a whole.

Fifty-seven percent of survey respondents providing wireless service indicated that they currently hold at least one wireless license below 2.3 GHz. Sixty-nine percent of those who hold a license below 2.3 GHz have a 700 MHz license, 44% an AWS license, 35% PCS, 19% cellular, 10% other (such as microwave) and 8% paging. (See Fig. 1.)



Note: Totals exceed 100% as carriers may hold more than one wireless license.

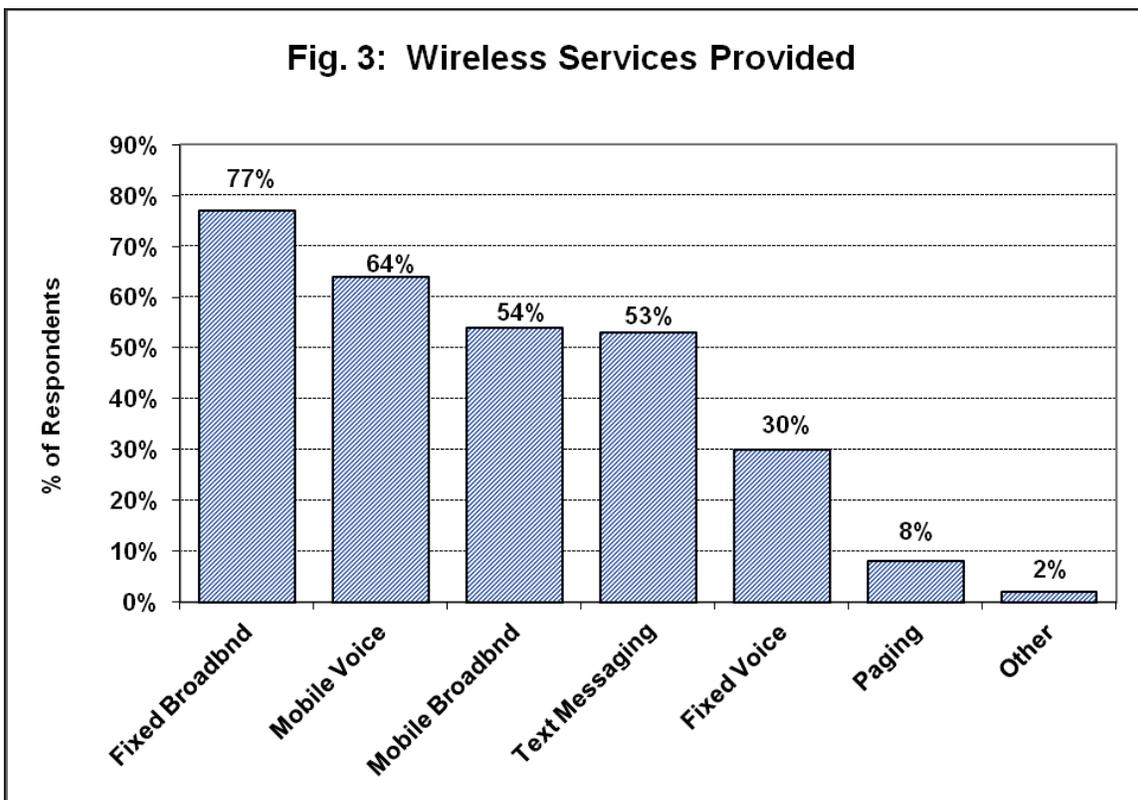
Twenty-nine percent of survey respondents providing wireless service indicated that they currently hold at least one wireless license above 2.3 GHz. Thirty-five percent of those who hold a license above 2.3 GHz have an MDS/MMDS license, 24% an LMDS license, and 6% WCS. Fifty-three percent of survey respondents hold another license above 2.3 GHz, including 3.65 GHz, 6 GHz or 11 GHz. (See Fig. 2.)



Note: Totals exceed 100% as carriers may hold more than one wireless license.

Sixty-three percent of survey respondents indicated that they use wireless spectrum for backhaul. Of those, 49% utilize licensed spectrum, while 51% use unlicensed spectrum. Forty-six percent of survey respondents indicated that 100% of their existing sites deployed today are currently IP backhaul ready.

Sixty-two percent of survey respondents are offering some type of wireless services to their customers⁵. Of those providing wireless service, seventy-seven percent offer fixed broadband,⁶ 64% mobile voice, 54% mobile broadband, 53% text messaging, 30% fixed voice and 8% paging. (See Fig. 3.)

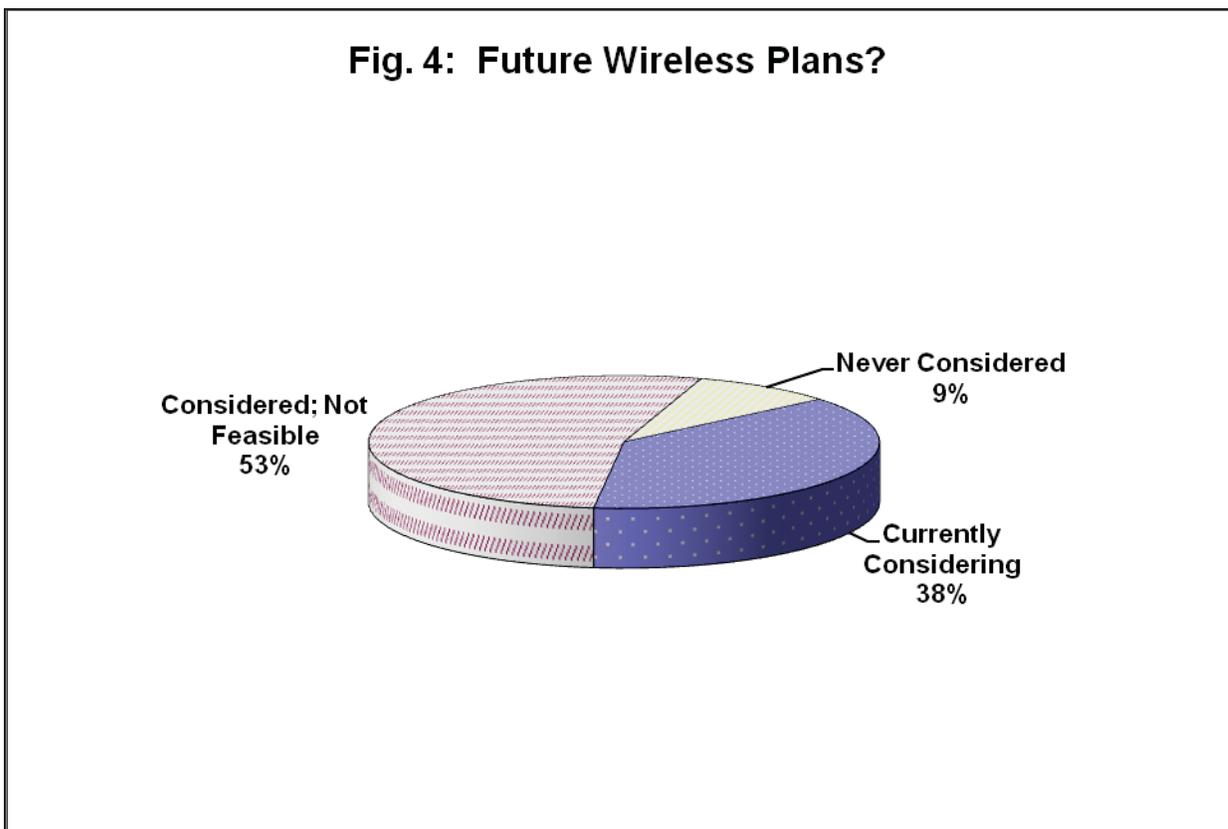


Note: Totals exceed 100% as carriers may provide more than one wireless service.

⁵ Includes respondents utilizing unlicensed spectrum to provide wireless service.

⁶ For the purposes of this survey, broadband is defined to be data transmission speeds of at least 756 kilobits per second in one direction.

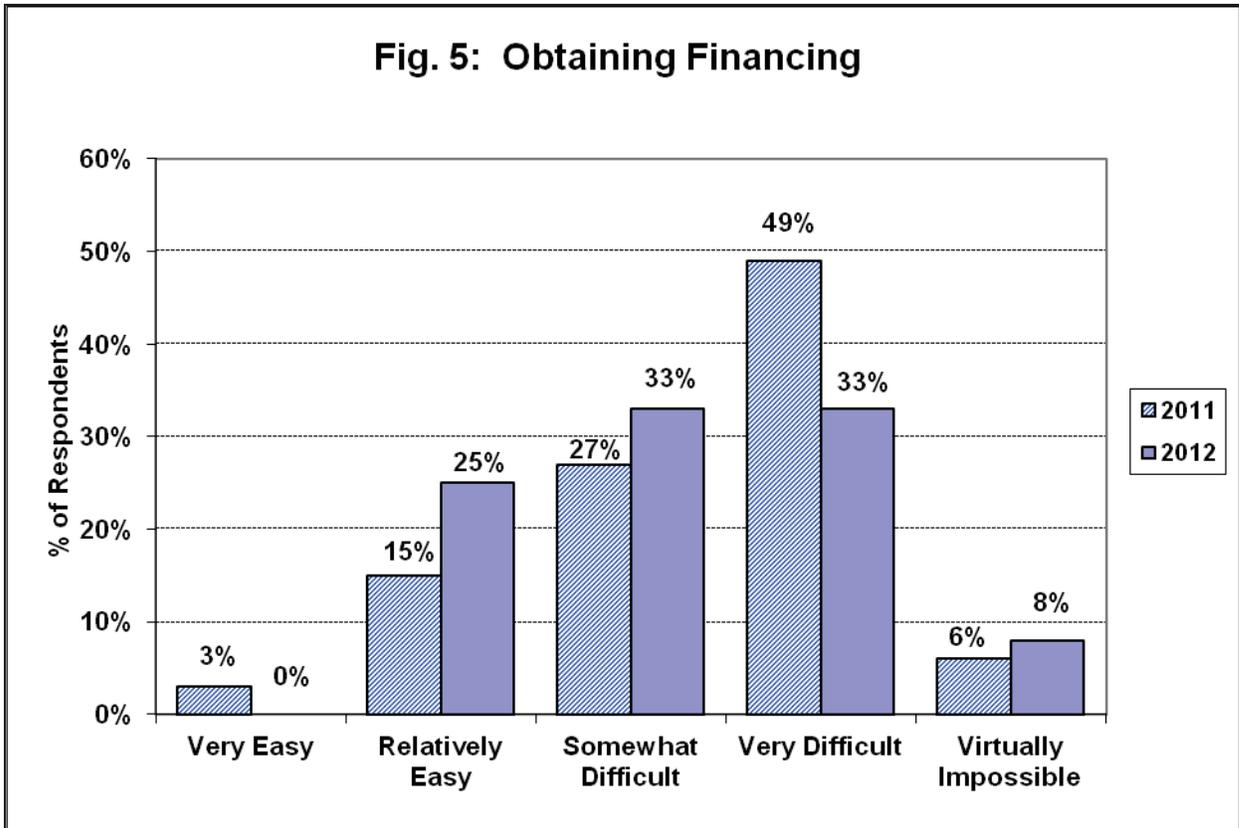
Thirty-eight percent of the respondents not currently offering wireless service indicated they are considering doing so. Fifty-three percent have previously considered offering wireless service and deemed it not feasible, while 9% have never considered wireless. (See Fig. 4.)



Survey respondents indicated that they have invested considerable resources in wireless. For those companies investing in wireless, the average total (cumulative) investment in wireless facilities, excluding spectrum, was \$11.7 million, ranging from a high of \$119 million to a low of \$25,000. Average total (cumulative) investment in spectrum totaled \$1.4 million. Average annual wireless revenues were \$12.3 million.

Survey respondents serve an average of 9,968 wireless subscribers with an average of 38 cell sites. (A few larger respondents skew these numbers upwards, however: the median number of wireless subscribers is 1,601 and the median number of cell sites is 9.) The average customer's monthly wireless bill is between \$50 and \$60, and the typical customer uses just over 600 minutes monthly. Fifty-one percent of responding companies find it difficult to compete with promotions—such as buckets of long-distance minutes—being offered by the national carriers.

Survey respondents found obtaining financing for wireless projects to be considerably more challenging than reported in the last survey. While relatively fewer respondents classified the process as “very difficult” (33% in 2012 versus 49% in 2011) more found the process “somewhat difficult” (33% vs. 27%) in 2012 than in 2011. More respondents classified the process as “relatively easy” in 2012 than in 2011, 25% vs. 15%. (See Fig. 5.)



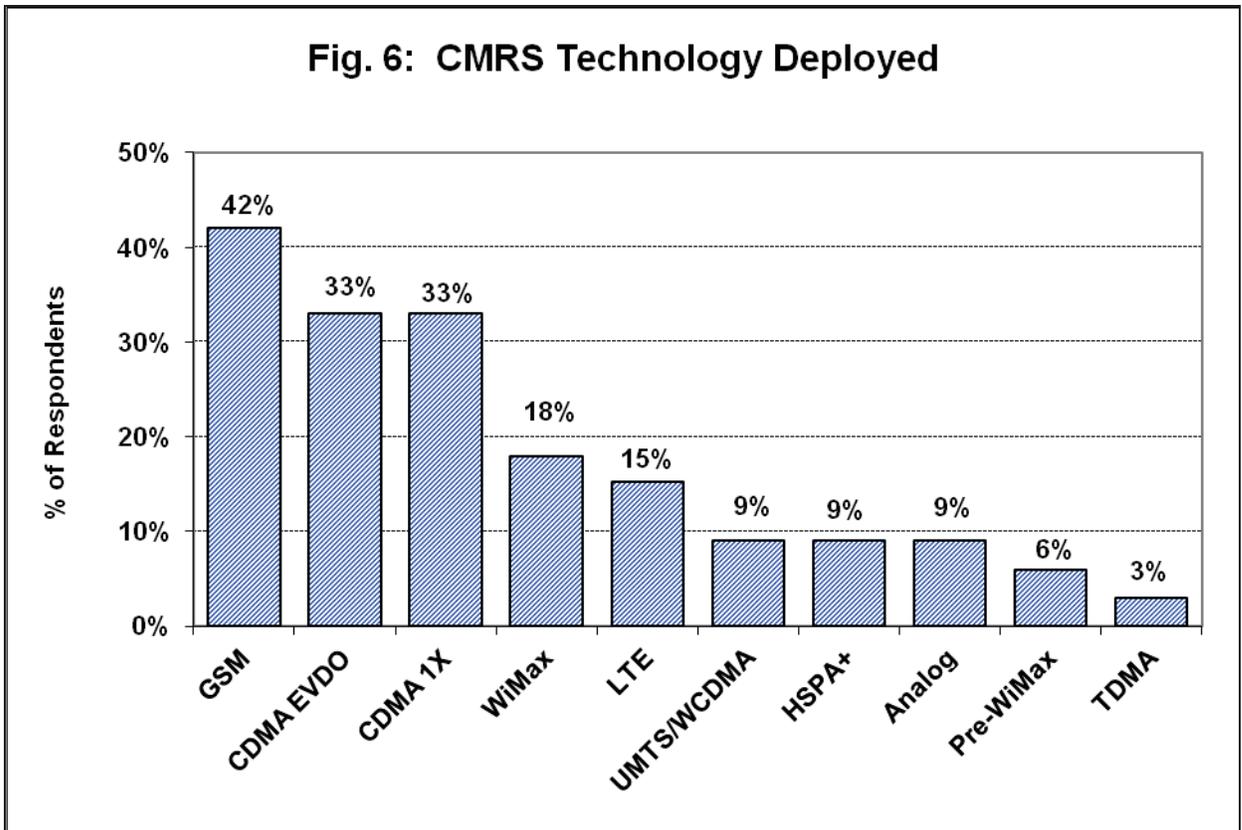
Survey respondents utilize a variety of finance sources to fund their wireless operations. Seventy-nine percent reinvest company earnings, 48% utilize grants or loans, 42% use high-cost USF support, and 10% use individual investors or general funds.

Thirty-nine percent of survey respondents indicated that they had acquired spectrum in the preceding twelve-month period, while 36% made arrangements for the utilization of previously acquired spectrum. Nineteen percent entered into negotiations for the acquisition of spectrum, while thirty-six percent relinquished spectrum.

Sixty-three percent of survey respondents are looking to provide wireless service to both their wireline service area and neighboring territories; 22% seek to serve neighboring territories only; and 15% their own wireline service territory only.

Forty-five percent of survey respondents are utilizing unlicensed spectrum to provide wireless services to their customers. Among the services identified are fixed broadband and backhaul. Forty-eight percent of those respondents using unlicensed wireless spectrum indicated that they had experienced difficulties doing so, mainly interference problems.

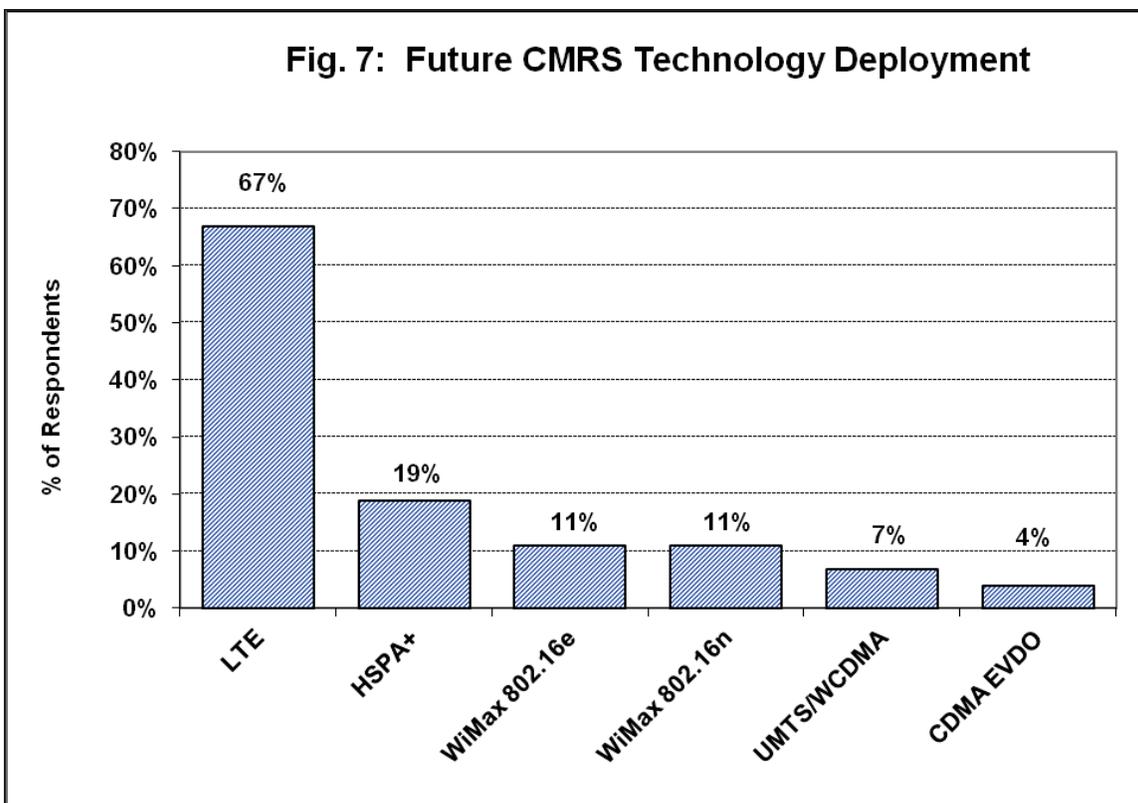
Asked which wireless CMRS technologies their company has deployed with, 42% percent of survey respondents indicated GSM service, 33% CDMA 1X and CDMA EVDO, and 18% WiMax. (See Fig. 6.)



Note: Totals exceed 100% as respondents were allowed to select more than one technology.

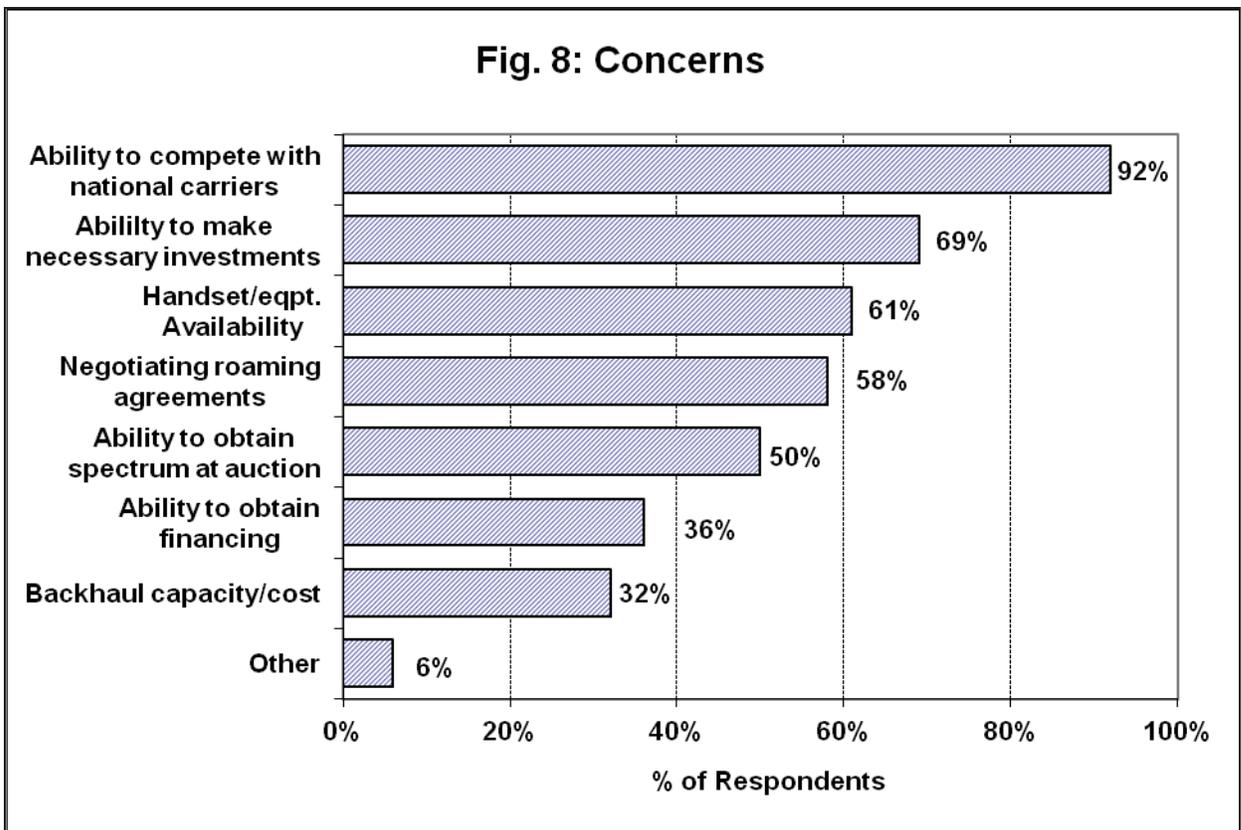
Ninety percent of those survey respondents currently offering wireless indicated that they had plans to deploy next generation technology. Of those, 70% plan to deploy in the next 1-2 years, 22% within three years, and 9% within five years.

Sixty-seven percent of those survey respondents who have plans to deploy next generation technology said that they would be deploying LTE. Nineteen percent indicated their next deployment would be HSPA+, 11% WiMax802.16e and WiMax 802.16n, and 7% UMTS/WCDMA. (See Fig. 7.)



Note: Totals exceed 100% as respondents were allowed to select more than one technology.

Respondents intend to offer their customers a wide variety of new services over the next 12 to 18 month period: fixed and mobile data, VoIP, WiMax, and 700 MHz service were all noted. A number of concerns, however, threaten survey respondents' future plans. Ninety-two percent indicated that they were concerned about their ability to compete with national carriers, up significantly from 75% a year ago. Sixty-nine percent cited their ability to make necessary investments to be able to offer the latest services, 61% handset/equipment availability, 58% their ability to negotiate roaming agreements with national carriers, 50% the ability to obtain spectrum at auction, 36% their ability to obtain financing for wireless projects, and 32% backhaul capacity/cost. (See Fig. 8.)



Note: Totals exceed 100% as respondents were allowed to select more than one concern.

“Other” concerns include the ability to offer higher speeds in the future, rising costs per subscriber, and uncertainty surrounding the future of universal service support.

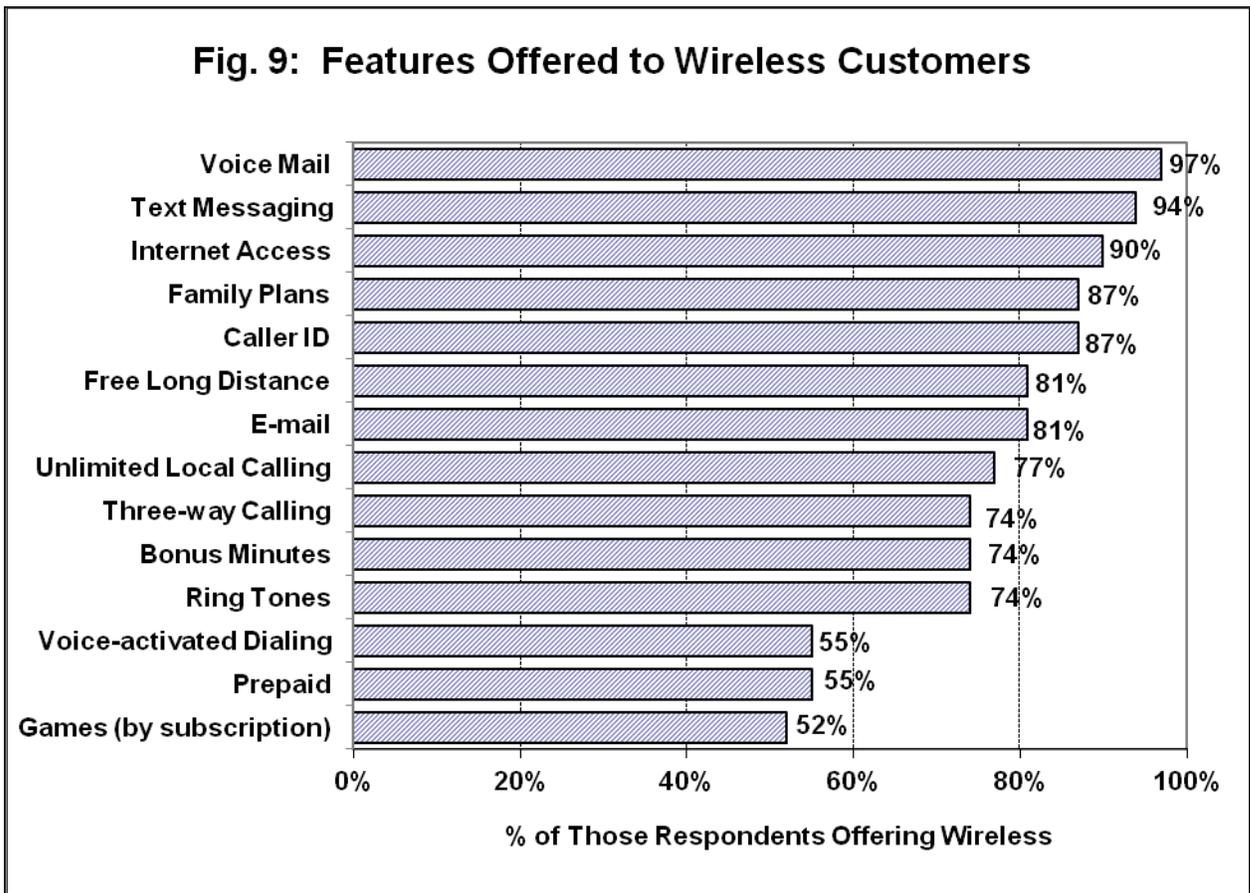
Asked to categorize their experience in negotiating data roaming and in-market roaming agreements with other carriers, 69% categorized it as moderately to extremely difficult. Twenty-seven percent categorized the experience as moderately to relatively easy, and 4% as extremely easy.

Of those respondents who have a reciprocal roaming agreement with another carrier, 52% indicated that they pay about as much on a per minute basis as they themselves are paid. Thirty-three percent pay more on a per minute basis, while 14% pay less.

Survey respondents are facing competition from other carriers—the average respondent indicated that their company competes with between two and four other carriers. However, many of these competitors serve only a small portion of the respondent's service area.

Thirty-one percent resell another carrier's service under their own brand, while 5% do so under a national brand. Fifty-eight percent sell service for which they own spectrum under their own brand, and 5% do so under a national brand. Fifty-one percent have at one time been hindered in their efforts to provide wireless service due to the actions of a national wireless carrier. Forty-seven percent have at one time entered into a joint venture with another wireless carrier.

Survey respondents offer myriad features to their wireless customers. Ninety-seven percent of survey respondents offer their wireless customers voice mail, 94% text messaging, 90% Internet access, 87% family plans and caller ID, and 81% free long distance and e-mail. (See Fig. 9.)



Note: Totals exceed 100% as respondents may provide more than one wireless feature.

Respondents indicated considerable customer loyalty. Sixty-four percent of survey respondents experience annual customer churn of less than 10%, while 27% reported annual churn of between 10% and 25%. Six percent of respondents reported no customer churn. This compares favorably to the FCC's most recent estimate of industry-wide churn rate monthly averages of 1.5% to 3.3%, or from 18% to 40% annually.⁷

Forty-two percent of survey respondents indicated that wireless customers left due to issues concerning handset availability. Eighteen percent said that it was due to non-payment, customers moving out of area or dying, 15% due to lower prices from another provider, 12% due to additional services available from another provider and 6% the ability to bundle services offered by another provider.

⁷ Federal Communications Commission, *Fifteenth Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, WT Docket No. 10-133 (Terminated), rel. June 27, 2011, p. 154.

CONCLUSIONS

Survey respondents continue to make significant investment in their wireless service. Survey responses indicate that carriers have cumulatively invested, on average, more than \$11 million in wireless facilities, with an additional \$1.4 million, on average, invested in spectrum. The scope of these investments provides compelling evidence that wireless services are considered a critical offering, without which these small rural carriers would not be able to successfully compete for customers.

Competition from other wireless providers is a significantly greater concern than it was a year ago. Ninety-two percent of responders to the 2012 survey selected competition from nationwide carriers as a significant concern, compared to 75% a year ago. Given that all other concerns held at about the same level as last year, this would indicate that this truly is a greater challenge for carriers, rather than just the result of other concerns diminishing.

Negotiating roaming agreements remains challenging. Sixty-nine percent of survey respondents categorized their experience in negotiating data roaming and in-market roaming agreements with other carriers as moderately to extremely difficult, approximately the same level as last year. Nearly two-thirds of all respondents selected their ability to negotiate roaming agreements with national carriers as a significant impediment to their ability to do business. If these carriers are to survive, they will need assurances that larger carriers will negotiate roaming agreements with them in a reasonable manner.

Low churn rates would tend to indicate significant levels of customer satisfaction. Particularly in light of the number of competing carriers challenging small rural carriers, churn levels well below the national average are an indication that customers are satisfied with the overall quality of service provided by the small providers. The competitive threat will not diminish, however--rural carriers will need to continue to provide excellent quality service if they wish to retain their customers into the future.



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Survey: FCC USF/ICC Impacts Summary of Results

In January 2013, a very brief survey was sent via email to NTCA member company managers asking whether the FCC's ongoing USF/ICC reform efforts have caused their company to postpone or cancel any fixed network upgrades, and further asking respondents to quantify the aggregate cost of those postponements/cancellations. One hundred-eighty-five (185) NTCA member companies responded to the survey, representing 34% of the unique email addresses in NTCA's membership email database. Based on this sample size, results of this survey can be estimated to be accurate to within +/- 6% at the 95% confidence level. The results of the survey follow.

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Question 1. Has your company postponed or cancelled any fixed network upgrades as a result of the uncertainty surrounding the Commission's ongoing universal service fund (USF)/intercarrier compensation (ICC) reform efforts?

- Postponed or cancelled projects: 69%
- Neither postponed nor cancelled projects: 31%

Breaking down the responses of impacted companies further:

- Postponed projects: 62%
- Cancelled projects: 18%
- Both postponed and cancelled projects: 11%

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Question 2. [Optional] If you answered "Yes" to any part of Question 1 above, please provide the approximate total dollar amount of investment that has been subject to postponement or cancellation.

101 respondents (78% of those who indicated that they had postponed or cancelled projects) responded to this question. The results are as follows:

- Total aggregate value of postponed or cancelled projects: \$492.7 million
 - o Average: \$4.9 million
 - o Median: \$2.0 million
 - o High: \$145 million
 - o Low: \$80,000

NTCA—The Rural Broadband Association is the premier association representing nearly 900 independent, community-based telecommunications companies that are leading innovation in rural and small-town America. NTCA advocates on behalf of its members in the legislative and regulatory arenas, and it provides training and development; publications and industry events; and an array of employee benefit programs. In an era of exploding technology, deregulation and marketplace competition, NTCA's members are leading the IP evolution for rural consumers, delivering technologies that make rural communities vibrant places in which to live and do business. Because of their efforts, rural America is fertile ground for innovation in economic development and commerce, education, health care, government services, security and smart energy use. Visit us at www.ntca.org.