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

NTCA 2007 BROADBAND/INTERNET AVAILABILITY SURVEY REPORT

September 2007

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

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EXECUTIVE SUMMARY

For the last nine 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 2007, NTCA sent an electronic survey form to each of the companies in NTCA's membership database; 175 members (31%) responded.

Ninety-nine percent of the 2007 survey respondents offer broadband to some part of their customer base, approximately equal to the 2006 rate and a dramatic increase from the 58% of the 2000 survey respondents who offered broadband. Respondents indicated that they use a variety of technologies to provide broadband to their customers: 99% of those who offer broadband utilize digital subscriber line (DSL), 32% fiber to the home (FTTH) or fiber to the curb (FTTC), 20% unlicensed wireless, 16% licensed wireless, 14% satellite and 12% cable modem. Only 29% of 1999 survey respondents offered DSL service, and none offered wireless broadband.

Dial-up connection to the Internet at 56 kilobits per second (kbps) is available to 91% of respondents' customers. Seventy percent can receive 200 to 500 kbps service, 80% 1 megabit per second (Mbps; down from 88% a year ago) and 48% 3 Mbps (up from 39%). On average, 15% of respondents' customers subscribe to 56 kbps service (down from 19% last year), 15% subscribe to 200 kbps to 500 kbps service (unchanged), 9% to 1 Mbps (up from 6%), 6% to 3 Mbps offerings (up from 4%), and 4% to greater than 3 Mbps service (up from 1%). Overall, dial-up take rates declined and broadband take rates rose slightly in the past year.

The typical respondent is 91 miles from their primary Internet connection. Seventy-three percent of those who recently changed backbone providers did so for price reasons. Eighty percent of respondents indicated they are generally satisfied with their current backbone access provider, while 6% are generally dissatisfied.

Eighty-seven percent of survey respondents indicated they face competition in the provision of advanced services from at least one other service provider, virtually unchanged from 86% a year ago. 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), satellite broadband providers, cable companies and wireless Internet service providers (WISPs).

[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.

Respondents are taking numerous marketing steps to increase broadband take rates, including free customer premise equipment installation, price promotions, bundling of services, free hardware and free software. Just over one-half of respondents find it difficult to compete with price promotions offered by competitors. Overall, 40% of survey respondents consider their company's marketing efforts to be "very successful."

Forty-seven percent of those respondents with a short-term fiber deployment strategy plan to offer fiber to the node to more than 75% of their customers by year-end 2007, while 12% plan to offer fiber to the home to at least 25% of their customers over the same time frame. Deployment cost remains the most significant barrier to wide deployment of fiber, followed by regulatory uncertainty, long loops, obtaining cost-effective equipment and low customer demand. Throughout the history of the survey, deployment cost has been respondents' most significant concern.

Seven percent of respondents currently offer voice over Internet protocol (VoIP) service, up from 3% last year. Fifty-four percent of respondents have plans to offer VoIP in the foreseeable future. Seven percent have providers offering, or planning to offer broadband over power lines (BPL) within their service area. Sixty-three percent of respondents offer video service to their customers, up from 58% last year. Seventy-two percent of those respondents offering video offer cable TV, 37% Internet protocol television (IPTV) and 4% direct broadcast satellite (DBS).

INTRODUCTION

In the late spring and early summer of 2007, 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 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 Telecommunications Act of 1996 ("Act"). While some offer local exchange service to as few as 44 lines and a small handful to 90,000 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 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, and also provided an opportunity for respondents to provide any specific comments they wished to share.

OVERVIEW OF SURVEY

The 2007 NTCA Broadband/Internet Availability Survey was conducted online. For the first time, the survey was broken up into three separate segments, each sent out about two 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.

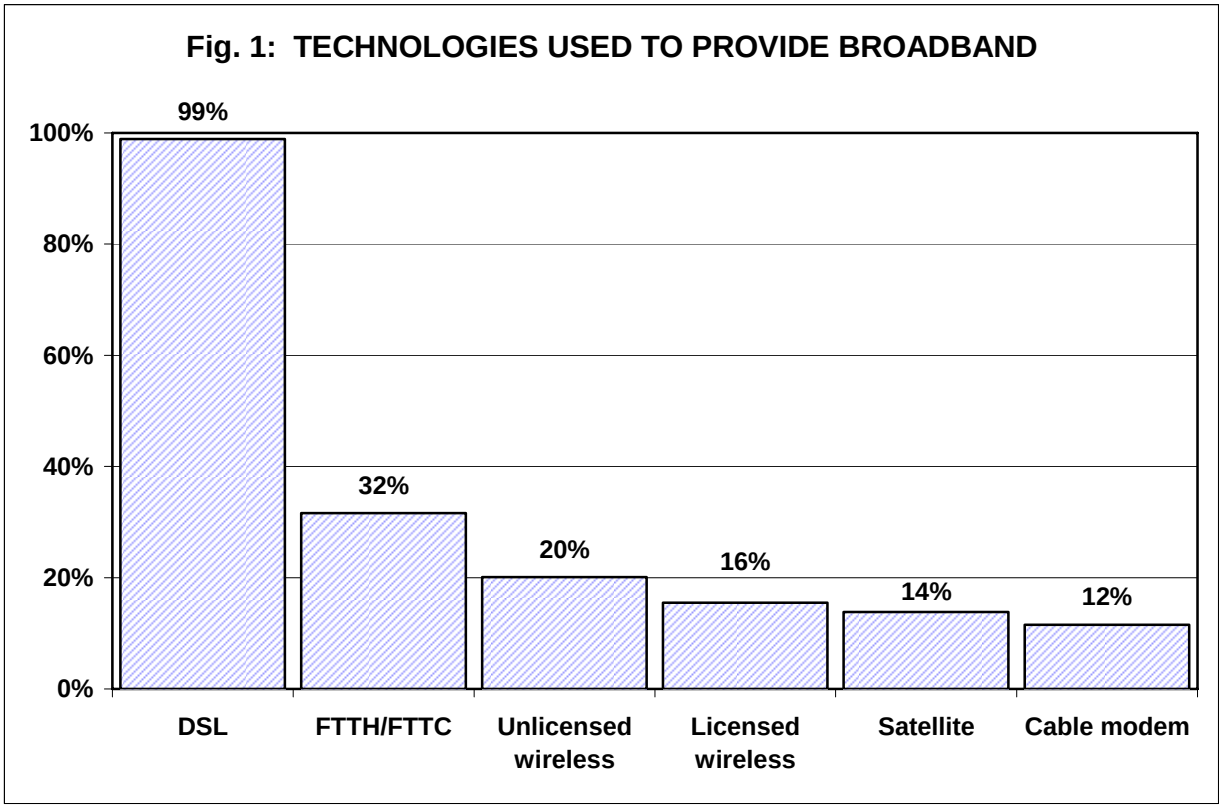
The first part of the survey was comprised of general questions about the respondent's current operations, competition/marketing and future plans. The second part dealt with the Internet backbone, voice over Internet protocol (VoIP), and broadband over power lines (BPL); the third, video and fiber deployment.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

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

SURVEY RESULTS

The survey URL for each part of the survey was distributed via e-mail and fax to all member companies in NTCA's database. The message contained instructions for online access to the survey. Responses were received from 175 member companies, a 31% response rate.[3]

The average survey respondent serves 5,326 residential and 1,691 business lines; a few large companies skew these numbers upward, hence the median respondent serves 2,859 residential and 633 business lines. Ninety-nine percent of survey respondents offer broadband[4] service to some part of their customer base. Respondents indicated that they use a variety of technologies to serve their customers: 99% utilize DSL, 32% FTTH or FTTC, 20% unlicensed wireless, 16% licensed wireless, 14% satellite, and 12% cable modem.[5] (See Figure 1.)

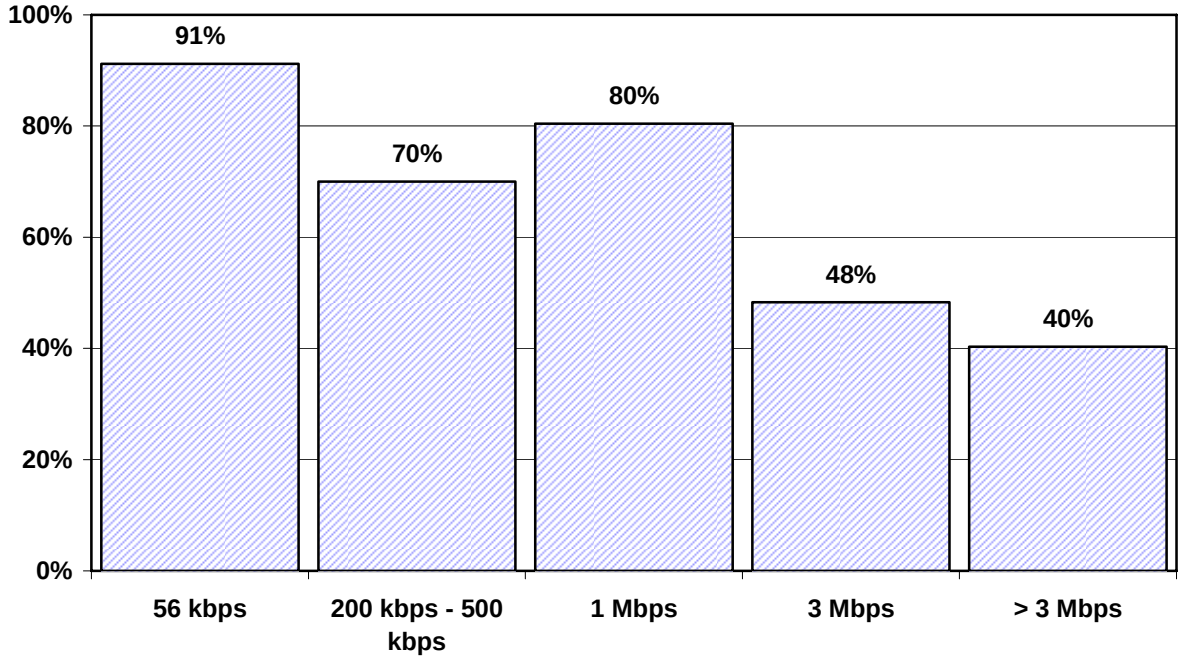


[3] Based on the sample size, results of this survey can be assumed to be accurate to within ± 6% at the 95% confidence level.
[4] For the purpose of this survey, broadband is defined as throughput of 200 kbps in one direction.
[5] Percentages sum to greater than 100% as some respondents utilize more than one technology to serve their customers.

A vast majority (84%) of survey respondents are utilizing fiber fed nodes to extend the reach of DSL. Thirty-two percent indicated that the average distance from the digital loop carrier (DLC) to the end user was between 15 and 18 thousand feet (kft), 29% between 9 and 15 kft, 20% greater than 18 kft and 20% 9 kft or less.

Dial-up connection to the Internet at fifty-six kbps is available to 91% of respondents' customers. Seventy percent can subscribe to 200 kbps to 500 kbps service, 80% to 1 megabit per second (Mbps), 48% to 3 Mbps and 40% to greater than 3 Mbps service. (See Figure 2.)

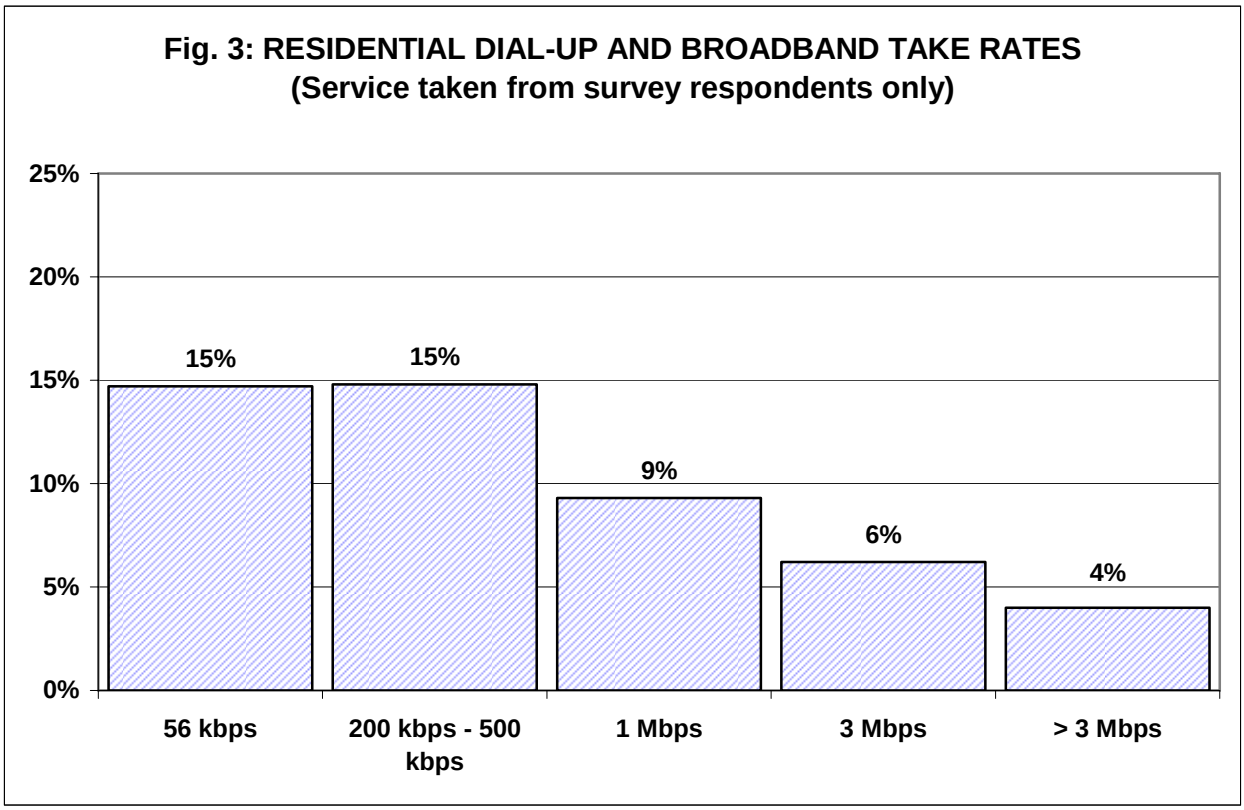
Fig. 2: AVAILABILITY OF DIAL-UP AND BROADBAND SERVICE



On average, 15% of respondents' residential customers subscribe to their 56 kbps service, 15% subscribes to 200 kbps to 500 kbps service, 9% subscribes to 1 Mbps service, 6% to 3 Mbps service and approximately 4% to greater than 3 Mbps service.[6] (See Figure 3.) Typical prices charged range from $17.95 to $19.95 per month for unlimited dial-up

[6] Actual rural broadband subscription rates are likely significantly higher than the numbers shown here, as survey respondents are joined by a wide variety of competitors in the provision of broadband services within their service area.

service, to $34.95 to $49.95 for cable modem service, $34.95 to $44.95 per month for DSL service, and $39.95 to $54.95 for wireless broadband service.



Forty-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 service are extremely low.

Survey respondents have come to view the provision of broadband as a crucial part of their operations. Eighty-nine percent consider broadband deployment very important for their company's bottom line, while 6% consider it somewhat important. With respect to respondents' standing in the community as the telecommunications provider of choice, 97% consider broadband deployment very important.

Internet Backbone

The typical respondent is 91 miles from their primary Internet connection. Seventy-three percent of those respondents who have recently switched Internet backbone access providers did so for price reasons, 37% due to quality of service concerns and 27%

switched for other reasons, such as avoiding transport costs or obtaining diverse routing.[7] Eighty percent of respondents indicated they are generally satisfied with their current backbone access provider, while 6% are generally dissatisfied.

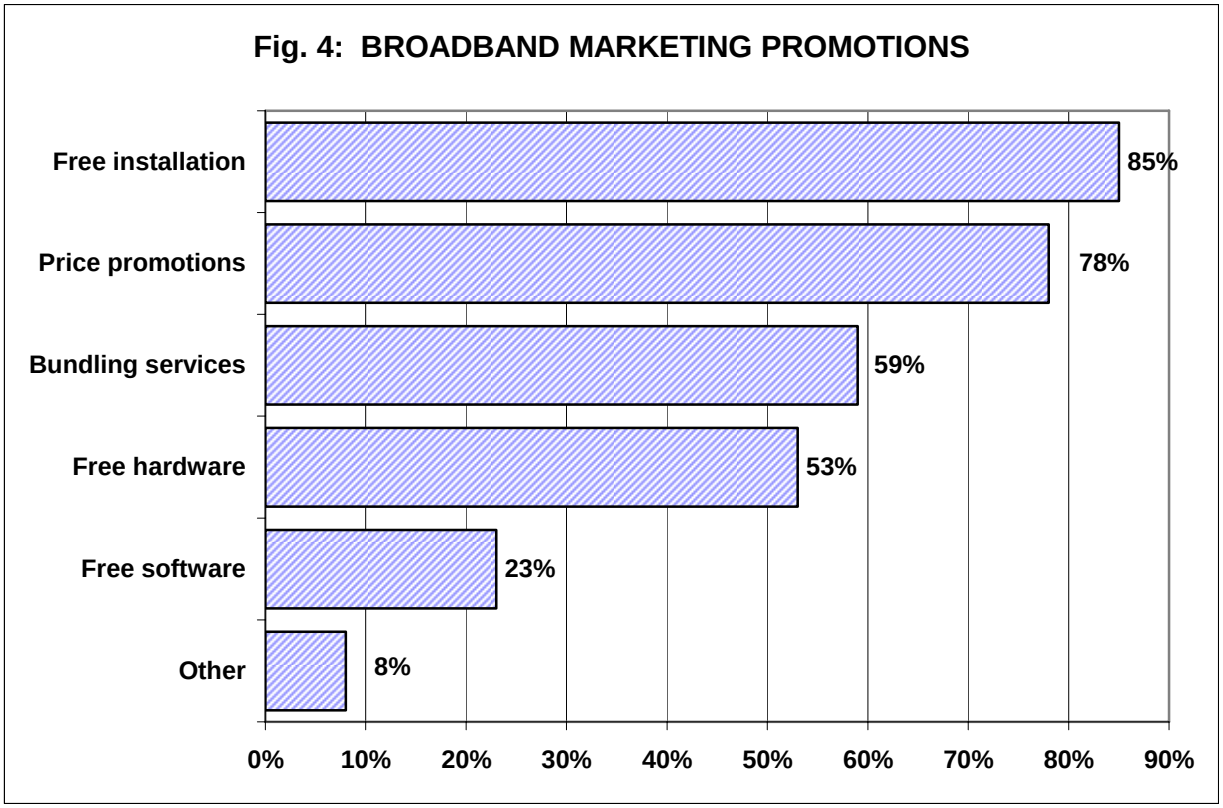
Competition/Marketing

Competition in broadband is becoming more prevalent and more varied: 87% of survey respondents indicated that they face competition from at least one other service provider for at least some of their customers. The typical respondent competes with one national ISPs, two satellite broadband providers, 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.

The prospect of cable companies developing the capability to offer voice service is causing respondents some discomfort. Forty-five percent of respondents are very concerned, while 9% are somewhat concerned.

Rural ILECs are taking numerous steps in the marketing arena to increase broadband take rates. Eighty-five percent are offering free customer premises equipment (CPE) installation, 78% of survey respondents' companies are offering price promotions, 59% are bundling services, 53% are offering free hardware, 23% offer free software and 8% are offering other promotions, such as a free month of service.[8] (See Figure 4.) Fifty-two percent of respondents find it difficult to compete with price promotions offered by competitors, while 36% struggle to match competitors' service bundling. Overall, 40% rate their company's marketing efforts as very successful, while 39% rate them as moderately successful.

[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.

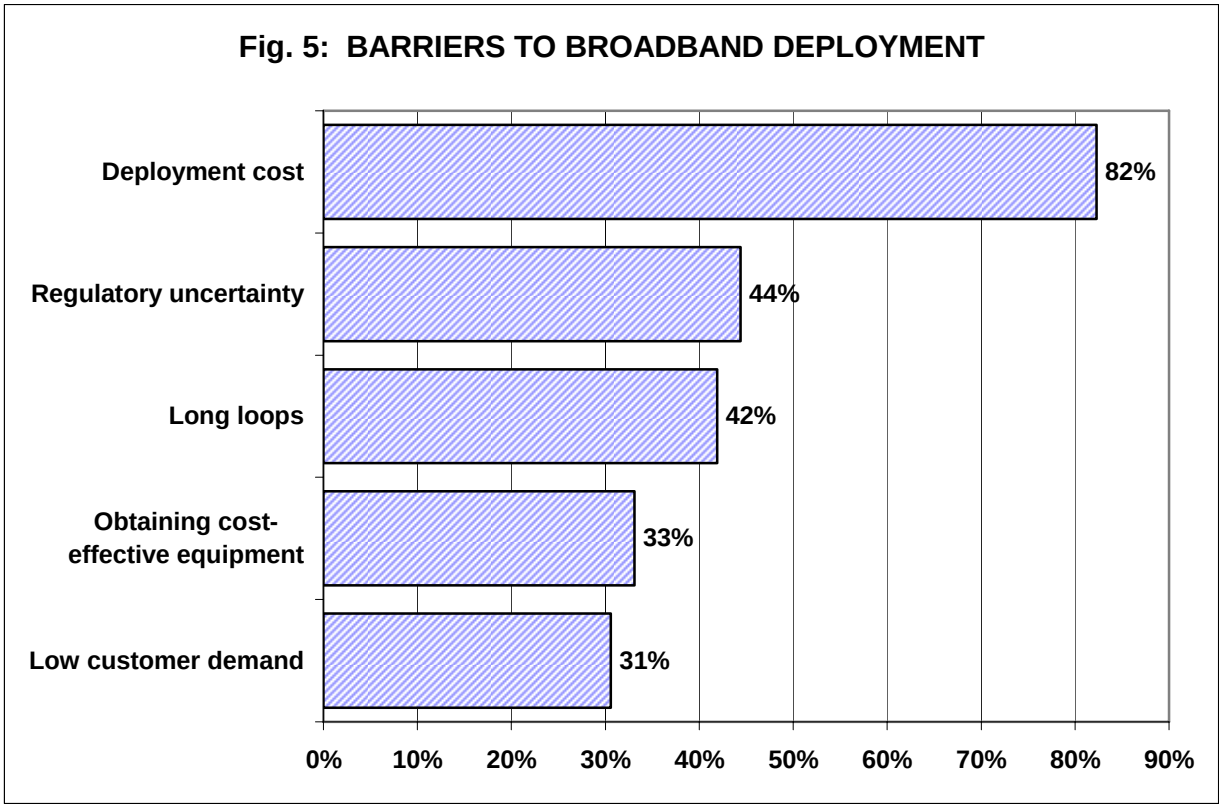


Fiber Deployment

Survey respondents indicated that their companies have some plans to deploy fiber to the curb (FTTC) and fiber to the home (FTTH) to their customers. Forty-seven percent of survey respondents with a short-term fiber deployment strategy expect to offer fiber to the node to more than 75% of their customers by the end of 2007, 9% plan to provide FTTC and 12% plan to offer FTTH to at least 25% of their customers. Fifty-two percent of respondents plan to offer fiber to the node to more than 75% of their customers by year-end 2009; 6% and 9%, respectively; plan to offer FTTC and FTTH to that same percentage of their customers.

Eighty-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 (44%), followed by long loops (42%); obtaining cost-effective equipment (33%) and low customer demand (31%).[9] (See Figure 5.)

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



Seventy-seven percent of survey respondents see modest to significant benefits to fiber deployment versus the current cost of deployment; 90% expect to see modest to significant benefits versus the cost of deployment three years from now.

VoIP

Seven percent of survey respondents currently offer voice over Internet protocol (VoIP) service to their customers, up from 3% one year ago. Fifty-four percent of respondents have plans to offer VoIP service in the foreseeable future, down from 71%. Twenty-eight percent of respondents perceive VoIP to pose a significant threat to their current operations, while 27% perceive VoIP as a moderate threat, down substantially from 37% and 50% last year, respectively.

BPL

Seven percent of survey respondents have providers offering, or planning to offer, BPL service within their service area, up from 5% last year. Four percent perceive BPL to

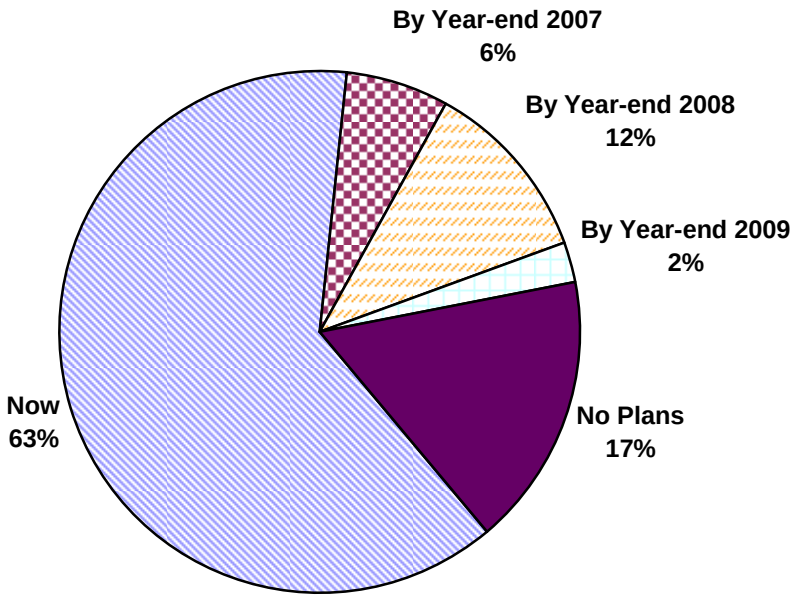
pose a serious threat to their operations (down from 5% last year and 10% two years ago), while 10% perceive BPL as a moderate threat (down from 38% last year).

Video

Sixty-three percent of survey respondents offer video service to their customers. Ninety-five percent of those offer video under a cable franchise, while 2% offer video as an Open Video System (OVS) pursuant to Part 76, Subpart S of the Telecommunications Act of 1996. Seventy-two percent of those respondents offering video offer cable TV, 37% IPTV and 4% direct broadcast satellite (DBS).[10]

Of those respondents not currently offering video, 17% (6% of all respondents) plan to do so by year-end 2007, 31% (12% of all respondents) expect to do so by year-end 2008, and 6% (2% of all respondents) expect to do so by year-end 2009. The remaining 45% (17% of all respondents) currently have no plans to offer video service. (See Figure 6.)

Fig. 6: OFFERING VIDEO SERVICE?



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

Miscellaneous

Survey respondents were asked what specific actions—on the part of the FCC, state regulators, etc.—would enable an accelerated pace of broadband deployment in the respondents service area. Their responses are presented in Appendix A of this report.

CONCLUSIONS

While DSL remains the most commonly-used technology for providing Internet access, fiber continues to show impressive gains. However, the past several years has shown steady growth in fiber deployment. Two years ago, 12% of broadband survey respondents were utilizing fiber to the home/fiber to the curb to offer broadband to customers. Last year, that number had grown to 28%; it now stands at 32%. As long as consumers continue to demand higher-speed offerings, fiber deployment seems likely to grow in the future.

Survey respondents are bypassing lower speed broadband service in order to make higher speed service available. In the current survey, the availability of 200 – 500 kbps broadband service (70%) and 1 Mbps service (80%) are down slightly from last year (88% each). However, availability of 3 Mbps service (48%) and even faster service (40%) remains relatively unchanged (50% and 39%, respectively.) It seems likely that respondents are taking a break from new deployment in order to allow subscriptions to catch up, and are retiring some older, lower-speed service offerings.

Customer take rates at higher speed tiers are showing dramatic growth. Providers that had deployed high speed services are now seeing their efforts rewarded as take rates continue to grow. Take rates for 1 Mbps service are now 9% (an increase of 50% over a year ago); for 3 Mbps, 6% (also up 50%); and for service in excess of 3 Mbps, 4% (a one year gain of 300%).

VoIP continues to be a receding threat. In the 2006 Broadband Survey, 87% of respondents perceived VoIP as a moderate to significant threat to their current operations. This year, that number fell to 55%. At the same time, while 71% of last year's survey respondents indicated they intended to offer VoIP service "in the near future," only an additional 4% had actually done so by the time of the 2007 survey. Look for small providers to continue to proceed with caution and to carefully evaluate any possible moves into the VoIP arena.

The ability to provide a video offering is critical to long term competitiveness. As more and more cable companies are able to offer voice services, it becomes increasingly important that telcos are able to respond with a video offering of their own. Sixty-three percent of survey respondents currently offer video; an additional 20% plan to by year-

end 2009. The 17% of respondents currently without plans for a video offering may be compelled to reevaluate that strategy between now and then.

APPENDIX A

Q: What specific action(s) on the part of the FCC or state regulators would enable you to accelerate the pace of broadband deployment in your service area?

Stabilize USF

Regulatory stability to insure cost recovery

Allowing video investments to be used in settlements

Guaranteed rate of recovery. Take the uncertainty out of it.

Firming up USF. Equal access to video content.

Stable USF

Stable return on investment

Being free from burdensome regulations

Quit helping the wireless companies so much. Density and distance does not affect their deployment like a wireline company.

Embrace the concept and make the USF funding predictable and sufficient over the life of the fiber

Passage of continued HCL USF support

Include broadband in USF

Keep USF funding predictable.

Revised depreciation rate for fiber distribution

Regulatory Stability

To know we can continue to get USF.

Regulatory Stability

Regulatory Stability

Can they cut the red tape that makes getting permission to cross federal lands take so long?

I think there is no real answer to this.

Continuation of existing USF and settlement rules

Bureau of Land Management massive rules from mandates to consider environmental and cultural studies of all lands including dirt roads, etc.

Indiana has done everything that AT&T wanted. That has made the broadcasters madder than wet hens. That spells trouble for the rest of us.

Assured USF

Include broadband in universal service.

Remove USF restrictions on acquired exchanges so all of our customers are supported in the same manner.

Establish a firm policy regarding USF funding for broadband fiber.

We can offer 256 [kbps] or more to all customers. Tax credits?

Broadband as eligible USF service. Intercarrier Compensation reform that encouraged and facilitated migration to IP networks.

Help us get more video content for an IP based network and get reasonably priced content for VOD.

1) Eliminate non-capital based USF leeches; 2) Keep rural defined as capital based broadband providers; 3) No free ride for VoIP carriers.

Lower cost

Finish the intercarrier compensation & USF proceedings so we have some stability.

Cost recovery issues including the ability to earn a reasonable rate of return.

A widespread commitment to USF and access. Stop forcing competition in the small rural areas. It is hard enough to provide updated services when we are the only provider.

How can we keep upgrading if there are multiple providers in a small area? Now neither provider has enough customer base to offer new services.

We have been and will continue to deploy broadband.

Continued USF support is essential.

Tax credit or subsidy

Provide certainty with regard to USF and NECA settlements with regard to fiber deployments that include bundled services. Also implement restrictions on the ability of programmers to demand excessive fees and unreasonable terms.

We are already 100% without the help of the government.

Assured USF funding

They need to take a positive approach and support FTTH.

More certainty regarding USF

FCC needs to remove uncertainty and finalize intercarrier compensation issues and USF issues

Enhanced cost recovery

Additional funding, help with financing, etc.

USF applied to broadband deployment

Stable USF & regulatory certainty

Already able to reach every subscriber in our exchanges with broadband.

We need to have a reasonable return for the investment we are making

Support for broadband, resolve USF issues

Low interest broadband loans

Cost upgrade as we go

Increase USF support in high cost areas to deploy FTTH.

Allowing a power collar to be installed on the customers meter base to power the UPS.

Certain cost recovery through access rates or USF

We already have reached 100% of our customers with plant capable of broadband. Currently 67% of our customers subscribe.

Regulatory certainty of cost recovery methodology

[Our state] has initiated a statewide franchise and we have appropriate franchises with most local municipalities.

Leveling the playing field between VoIP providers and traditional voice providers would provide the most benefit.

Analog video rules change at NECA and FCC

Definitive policies from Federal USF. Stability of the USF plans from FCC and Congress

Less regulation

Am already providing to all of my exchange

Stabilize USF funding. Make broadband available for USF funding.

Continue subsidy support for high cost areas

Grants or low cost loans.

Stabilty in our industry from less regulation

We have deployed broadband to 100% of our service area, utilizing a combination of our own facilities and WildBlue Satellite service. The more pertinent issue currently is a limitation on the take rate of these services due to the economics and demographics of our extremely rural service area. The high average age and relatively low income level of our service area, combined with other demographic and social factors, create a situation where many customers deem broadband as too expensive or unnecessary. However, we recognize that those customers that are subscribing to broadband or are considering doing so are always looking for faster speeds at a lower cost, and that WildBlue and our current landline and wireless facilities may not meet customers' speed requirements in the near future. Stabilizing and insuring continuation of the Universal

Service Fund for basic network infrastructure in rural areas, and then possibly making USF available for broadband deployment, would be the actions most likely to further enable deployments of our own facilities capable of providing the broadband services of the future. Without USF assistance for bringing basic services and infrastructure upgrades to our most rural customers, the chances of those customers ever being able to receive broadband speeds above 1.5 Mbps are very slim. It is also clear that in order to expand broadband access in rural areas there may need to be a provision to help rural customers purchase the equipment needed to access and make use of broadband services, such as a credit on eligible customers' bills similar to the Lifeline and Schools and Libraries programs.

Incentives from the federal and state agencies.

Broadband loop support

USF & access reform. No net neutrality rules

Give us some assurance that USF funds will be stable at some level

Include broadband in the USF equation. Broadband has become the voice service needed by every American household in order to exist and compete in this global economy.

Cost support or broadband loans to ILECs for IPTV.

We need assurance that we will continue to receive universal service funds. It is also very difficult to compete with larger carriers who have the ability to increase their rates in other areas where they have no competition so they can provide very low rates where they compete with us. We consider this to be anticompetitive, but state and federal regulators consider it healthy competition.

Without USF support it will not happen.

Regulatory certainty and stability

New financial support

Guaranteed recovery--USF, KUSF, etc.

Would encourage the Commission to actively support and encourage the board to add broadband deployment as a component of support in the Universal Service Fund.

Regulatory certainty and/or applying USF to support the network.