NTCA 2001 INTERNET/BROADBAND AVAILABILITY SURVEY REPORT

December 2001

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

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NTCA
NATIONAL TELEPHONE COOPERATIVE ASSOCIATION
The Voice of Rural Telecommunications

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EXECUTIVE SUMMARY

In the summer of 2001, The National Telephone Cooperative Association (NTCA) surveyed its members on their activities in the areas of providing broadband services and Internet access to their customers. The survey was sent to NTCA's 542 cooperative and small commercial member companies; 259 members (48%) responded.

NTCA members are doing an impressive job of making broadband available to their customers. However, low take rates suggest that many cannot justify expanding the service to all their remaining customers.

Virtually all survey respondents recognize the importance of broadband to their future business development.

The average survey respondent transports data more than 100 miles to reach the Internet backbone. Nearly 4 in 5 companies recover the cost of transport to the backbone in their retail Internet rates. The remaining 20 percent must find additional methods to compensate for this revenue shortfall.

Broadband Service and Penetration

One third of survey respondents expect to offer broadband to all customers by the end of 2001. Currently, 60% of the customers of survey respondents have the option to order at least 200 kbps of downstream data; 69% will be able to do so by the end of 2002.

The average monthly price charged for broadband service (including Internet access) varied from $69.66 for bandwidth between 201 and 500 kbps to $256.65 for bandwidth in excess of 1 Mbps.

Seventy-four percent of survey respondents currently offer their customers bandwidth in excess of 200 kbps downstream; eighty-three percent intend to by the end of 2002.

Broadband take rates remain extremely low. Four percent of those customers with cable modem broadband availability subscribe to the service, 3% of those with DSL availability subscribe, 2% those with wireless broadband access subscribe, and 1% percent of responding companies' customers with access to T1 subscribe.

Respondents indicate that the major barriers to expanding broadband service are loop length, deployment cost, low demand, and the lack of cost effective equipment scaled for smaller companies.

Seventy-six percent of survey respondents are selectively deploying fiber in their loop plant.

Eighty-six percent of respondents consider broadband “extremely important” or “very important” for their future business development.

Internet

Survey respondents’ average distance to the Internet backbone is 112 miles; 82% of respondents’ retail rates cover the cost of transport to the backbone.

The average cost for additional bandwidth for transport to the backbone was $1307 when purchased by theT1 (1.544 MB), or $985 when purchased by the megabyte. Sixty-nine percent of respondents are able to obtain additional bandwidth in one month or less.

Conclusion

Broadband is considered a very important service and is being widely deployed despite low take rates. However, about 25 to 30 percent of rural telephone subscribers are not likely to have broadband available in the near future.

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INTRODUCTION

In the summer of 2001, The National Telephone Cooperative Association (NTCA) surveyed its members on their activities in the areas of providing broadband services and Internet access to their customers. NTCA is a national association of approximately 540 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 others to as many as 50,000, nearly 50% of NTCA members have 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 companion piece to a similar survey conducted by NTCA in 2000[1], and builds upon the results of that survey. The previous survey asked about the availability and subscription rates for dial-up Internet access, the types of broadband service offered, and broadband infrastructure. While there is some overlap between the coverage of the two surveys, the 2001 survey's scope extended beyond that of the 2000 survey, querying respondents about prices charged for various forms of broadband service, the deployment of fiber in the loop plant, and the respondent's distance from the Internet backbone.

OVERVIEW OF SURVEY

The survey was organized into three sections. The first section contained general questions about the respondent and their service area. The second section contained questions about the respondent's provision of broadband service, pricing and subscription rates. The third and final section contained questions about the respondents' proximity to the Internet backbone, the availability and cost of additional transport bandwidth, and overall satisfaction with the backbone provider.

SURVEY RESULTS

The survey was distributed in the late summer and early fall of 2001 to 542 of NTCA's cooperative and small commercial member companies. Of those, 259 companies responded—a 48% response rate.

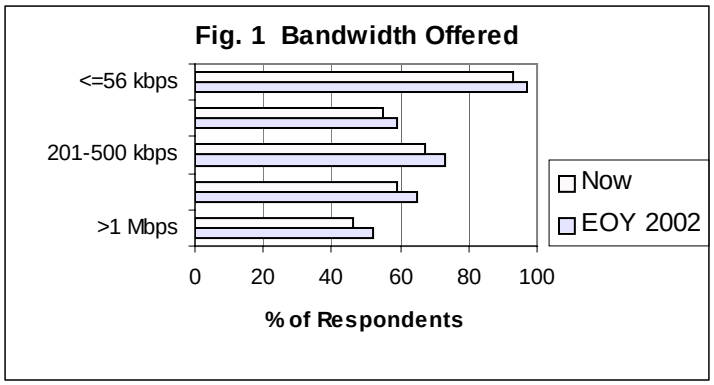
[1] The results of the 2000 survey are available online at www.ntca.org.

The average respondent serves just over 5900 residential and 1500 business access lines. A handful of larger companies skew those figures upward, however--the median respondent serves just 2943 residential and 726 business lines. On average, survey respondents have 19 public centers—schools, libraries, hospitals, government office building complexes, etc.—in their service area. Survey respondents offer broadband to an average of 88% of these public centers, and 39% of the centers actually take broadband service.

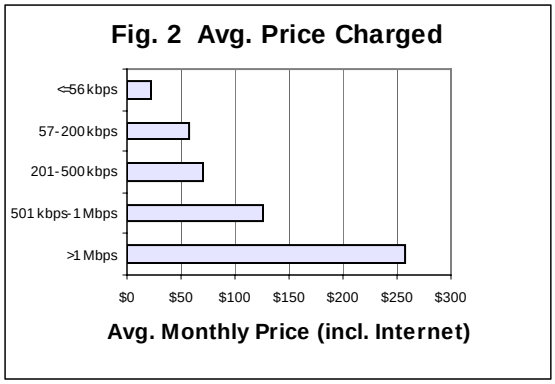
Broadband Service and Penetration

When asked to describe their immediate broadband objective, 33% of respondents indicated they intend to offer the service to all of their customers by the end of the year. Sixty-two percent hope to offer broadband to all customers within 18,000 feet of a central office by year-end. Currently, 60% of respondents' residential customers have the option to order at least 200 kbps downstream data from the company; respondents anticipate 69% will be able to do so by year-end 2002.

Seventy-four percent of survey respondents are currently offering bandwidth in excess of 200 kbps to some portion of their customer base; 83% expect to be doing so by year-end 2002. Sixty-seven percent currently offer bandwidth between 201 and 500 kbps (73% by year-end 2002); 59% currently offer between 501 kbps and 1 Mbps (65% by year-end 2002); and 46% currently offer bandwidth in excess of 1Mbps (52% by year-end 2002.) (See Figure 1.)

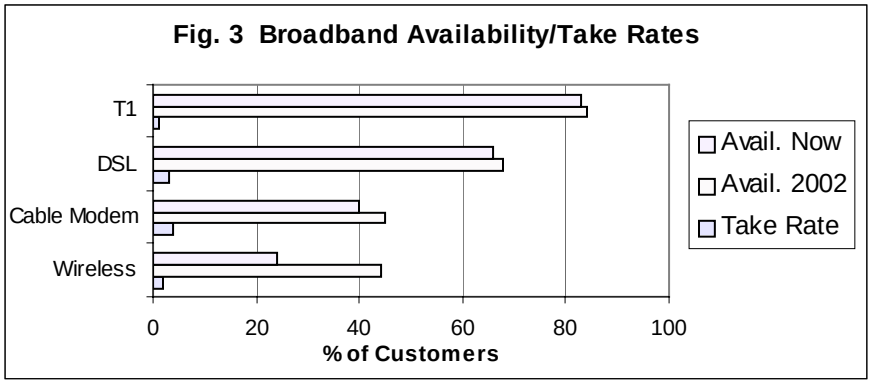


Prices charged vary from an average of $22.93 per month for dial-up service (less than or equal to 56 kbps), $56.76 per month between 57 and 200 kbps, $69.66 between 201 and 500 kbps, $125.68 monthly for bandwidth between 501 kbps to 1 Mbps, and $256.65 for bandwidth in excess of 1 Mbps. (All prices include Internet access.) (See Figure 2.)



Eighty-nine percent of survey respondents providing broadband offer DSL, 8% offer wireless, 7% T1, and 5% cable modem[2].

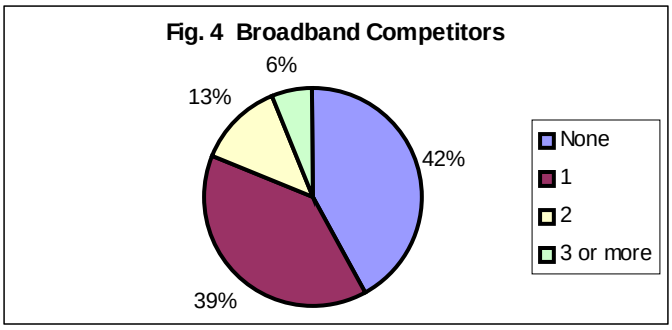
Survey respondents are making a wide variety of broadband technologies available to their customers, yet take rates remain extremely low. While 83% of the customers of those survey respondents providing T1 have access to the service, 1% of those customers subscribe. Similarly, 66% of the customers of those responding companies offering DSL may receive the service; 3% subscribes. Forty percent have access to cable modem service with a 4% take rate, and 24% can receive wireless broadband with a 2% take rate. (See Figure 3.)



Not surprisingly, these miniscule subscription rates result in a tenuous business case for providing broadband service. Survey respondents indicated that they would not be offering T1, DSL, or cable modem service to significantly more of their customers over the coming 18 months. Only wireless broadband shows indications of significant growth—the percent of respondents' customers with access to the service will nearly double, to 44% by year-end 2002.

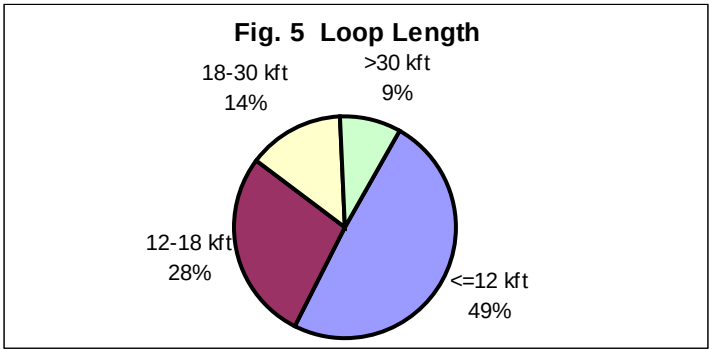
[2] Totals exceed 100% as respondents may offer more than one type of broadband service.

Forty-two percent of survey respondents report no competitors offering broadband in their service area; 39% have one competitor; 13% have two; and 6% have three or more. (See Figure 4.)



When asked to identify the major barriers to offering broadband in their telephone service area, 67% of survey respondents mentioned long loops, 63% the cost of deployment, 51% low demand, and 43% the lack of cost effective equipment scaled for smaller companies.

Seventy-seven percent of respondent company loops are 18,000 feet or less in length. Forty-nine percent are less than or equal to 12,000 feet; 28% are between 12,001 and 18,000 feet; 14% between 18,001 and 30,000 feet; and 9% exceed 30,000 feet. (See Figure 5.)



The majority of survey respondents—65%—utilize 24-gauge wire in their loop plant. Thirty-three percent utilize 22-gauge wire, 1% use 26-gauge, and 1% some other gauge.

Seventy-six percent of survey respondents are currently deploying fiber in their loop plant. Of those, 75% are deploying fiber to the DSLAM, 14% fiber to the curb and 3% fiber to the home. Thirty-two percent of respondent companies' lines have fiber in the loop, and 29% of respondents deploy fiber in new subdivisions. Fifty-eight percent of respondents deploy fiber when replacing existing outside plant cable.

Thirty percent of survey respondents have an ATM switch. Of those who do not, an additional 5% plan to by the end of 2001, and 7% plan to by year-end 2002. Forty-four percent of those respondents without an ATM switch are currently exploring ATM, while another 44% have no current plans to introduce ATM. Eighty-one percent of respondents who will be implementing ATM expect to add a separate switch, while 19% plan to modify an existing switch.

Survey respondents were asked how important they considered broadband in their future business development. Forty-seven percent responded "extremely important," 39% "very important," and 14% "somewhat important." Predictably, not a single respondent considered broadband "unimportant."

Internet

Two percent of survey respondents are not served by any Internet backbone providers; 57% by one backbone provider; 22% by two, and 19% by three or more. Respondents' average distance to the Internet backbone is 112 miles. Eighty-two percent of respondents' retail rates cover the cost of transport to the backbone.

Respondents reported on their cost of adding additional bandwidth for transport to the backbone. Those who purchased bandwidth in T1 units (1.544 MB) paid an average of $1307/T1, while those who purchased bandwidth by the megabyte paid an average of $985/MB. Twenty-two percent of respondents are able to obtain additional backbone capacity in one week; 47% within one month; 17 within two months; and 15% in more than two months. Eighty-eight percent of respondents claim to be satisfied with their backbone provider.

CONCLUSIONS

NTCA member companies have done an impressive job of beginning to make broadband available to their customers.

Seventy-four percent of survey respondents indicate that they are currently offering bandwidth in excess of 200 kbps to some portion of their customer base; 83% expect to be doing so by year-end 2002. Despite the fact that providing service to rural customers poses numerous challenges (population density, terrain, etc.), survey respondents indicate that they have made impressive progress toward the FCC's call for ubiquitous advanced services in all regions of the country.

As a result of the tenuous business case for broadband resulting from meager take rates, very few additional customers will gain access to these technologies over the next year-and-a-half.

Survey respondents indicated that they expect very little growth in the number of customers with access to the above-noted broadband technologies. Given the slight take rates for these technologies, providers simply cannot justify the necessary investment. Under the current conditions, customers in the most remote locations will not be able to access broadband, contrary to the provisions of the Telecommunications Act of 1996. (The sole exception was the provision of wireless broadband, a nascent technology that can, in certain instances, alleviate some of the difficulties rural service providers encounter in serving certain customers.)

Virtually all survey respondents recognize the importance of broadband to their future business development.

Forty-seven percent of survey respondents consider broadband "extremely important" to the future business development; 39% "very important"; and 14% "somewhat important." Not a single respondent classified broadband "unimportant." This recognition of the important future role of broadband makes the difficult economic case for broadband not only frustrating, but also a potential threat to the rural providers' future viability.

While the average survey respondent must transport data more than 100 miles to reach the Internet backbone, nearly 4 in 5 cover the cost of transport to the backbone in their retail Internet rates.

Internet access is no longer an optional service; it is *de rigueur* for today's technology savvy customers in rural America just as much as for their big city counterparts. The twenty percent of survey respondents who do not cover backbone transport costs in their retail Internet rates will need to make up the shortfall elsewhere.

APPENDIX

The survey's final question asked respondents to make any comments they wished regarding their company's implementation of broadband. The responses offer an important overview of the crucial issues and concerns facing service providers in rural America. The responses, unedited and loosely sorted by topic, follow.

# # # # # #

Low Demand

Available with limited number of takers.
Customers unwilling to pay for monthly DSL.
Hype for high speed is greater than demand.
Member demand has been very low.
Low demand for broadband.
Have fiber backbone, lack of subscriber interest.
Low demand undermines plan to offer high speed service. In other service areas, dial up. is successful more than wireless high speed.
Demand has not justified investment or allowed cost recovery.
In process of deploying DSL despite low demand.
Demand for DSL low when 56k is adequate for the money.
Not much demand…yet.
cost effectiveness; little demand in rural area.

High Demand

High demand area, unreliable service can be worse than no service.
Difficult to meet demand fast enough.
Demand exceeds expectations, successfully offering broadband.

Cost/Price

Small companies cannot compete with end users' price.
Transport to backbone costly due to NECA tariff.
Most do not want to pay for broadband.
Little profit, uncertainty about Internet's effect in future.
Market limited by price, customers without discretionary income.
Offer DSL, can offer broadband but too costly for most customers.
The last 30% not covered by broadband represents most costly customers.
Seems impossible to ever recover our investment. Must deploy to compete.
Customers demand high speed, but unlikely to pay price for it.
CDE equipment cost have slightly hindered service penetrations.
Customer demand for high speed, but costs make service almost unaffordable, so investment in bandwidth is not utilized.
Rural deployment presents first cost issue. Fiber to home should be researched for efficiency, economy in providing services.

Technology

Use pairgain with doublers to reach long loop customers.
We are installing ADSL capability with 12 KFT serving cell as multi-year project.
Switching backbone provider in network modernization.
Recently implemented broadband in all ILEC, CLEC exchanges. Also deploying satellite broadband service to >18kft.
We use special access circuits to offer broadband, offer services to customers of DSL/MVL technology.
Company has begun deploying digital equipment to rural area to offer broadband in near future.
Deploy fiber to hub technology for the economics as wells as availability to provide broadband.
When vendor world has viable product, will consider.
The future is video over copper for us, we are watching new technologies.
We are testing several different broadband products now.
Broadband implementation delayed by engineering, vendor availability.
Currently in test with ADSL, available by 10/31/01, will add DSLAMs in DLCs on demand.

Loans/Assistance

We are one of first to deploy DSL, but loans needed to reach last mile customers.
We have deployed DSL, but need affordable loans to provide service to last mile customers.
Federal Universal Service key to rural service.
Need affordable loans to provide DSL to last mile customers.

Miscellaneous

Recommend telcos implement DSL as soon as possible.
We have only offered DSL for 1 month.
Desire resources, but impractical for 80 customers spread over 850 sq. miles.
Vendor stability, rapid technology development, no standards.
Cooperating with neighbor LECs.
We're ahead of our time, and way ahead.
Currently have revenue agreement with a provider.
DSL successfully implemented here comparatively.
We are using both wireline and wireless.
Customer satisfaction with universal delivery.
Need broadband to stay in business.
We are small, one-exchange LEC, 45% of customers on Internet, 40% of those on DSL.
Broadband essential to economic development in rural areas.
It takes time.
State gov't is largest competitor.

Our cable and ISP go beyond telco footprint.
Need deregulation to achieve competitive prices.
Looking to deploy DSL by year end.
We have provided a well-received service to our community.
We have aggressively deployed broadband.
An affiliate offers broadband thru interconnection agreements.
Difficulty competing, need to CLEC.
We have placed a high priority on introducing these services to our members.
We are building as requested, not deploying then expecting demand.
We plan to provide, but not at this time.
DSLAM in larger towns, broadband to areas of at least 5 customers, MMDS to rural subs.
Broadband is the future.