



# CENTER *for* RURAL POLICY *and* DEVELOPMENT

January 2005

## *Business, the Internet and Broadband in Greater Minnesota*

*A survey of rural businesses and their utilization of  
Internet technology*

### *Introduction*

As broadband providers continue to deploy advanced telecommunications technology throughout Minnesota, concern regarding geographic access to broadband has quickly been replaced with concerns regarding demand and adoption rates by both small businesses and residential customers. To better understand the dynamics of Internet use and broadband adoption in rural Minnesota, the Center for Rural Policy and Development conducted a survey of business owners throughout Greater Minnesota to collect data on how they use computers, the Internet and high-speed, broadband access.

In 2002, the Center, along with Minnesota Technology Inc., released a survey of manufacturing and technology-based companies to ascertain their Internet and broadband adoption. This follow-up rural business survey is somewhat broader in scope. With the assistance of the Minnesota Department of Employment and Economic Development, the survey was expanded to all business and industry categories. Accordingly, the results are likely to provide a more comprehensive look at the utilization of digital technology from businesses in all industrial and size categories.

Initiated in 2001, the Rural Minnesota Internet Study is an annual survey designed to monitor Internet access, market penetration and technology utilization in rural Minnesota. As stated above, this report documents the findings from the 2003/2004 rural business survey. The survey was conducted via telephone interviews using phone numbers generated by business databases accessed through the Minnesota Department of Employment and Economic Development. All businesses contacted for this study were located outside of the Twin Cities seven-county metropolitan area.

The data were collected between December 2003 and January 2004. A total

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*The Center for Rural Policy and Development, based in St. Peter, Minn., is a private, not-for-profit policy research organization dedicated to benefiting Minnesota by providing its policy makers with an unbiased evaluation of issues from a rural perspective.*

A PDF of this report can be downloaded from the Center's web site at [www.ruralmn.org](http://www.ruralmn.org).

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of 275 businesses were interviewed for the study. In the majority of cases the respondent was the business owner or the general manager of the business. The data were analyzed using SPSS statistical software, and the estimates generated have a tolerated margin of error of  $\pm 6$  percent at the 95 percent confidence interval.

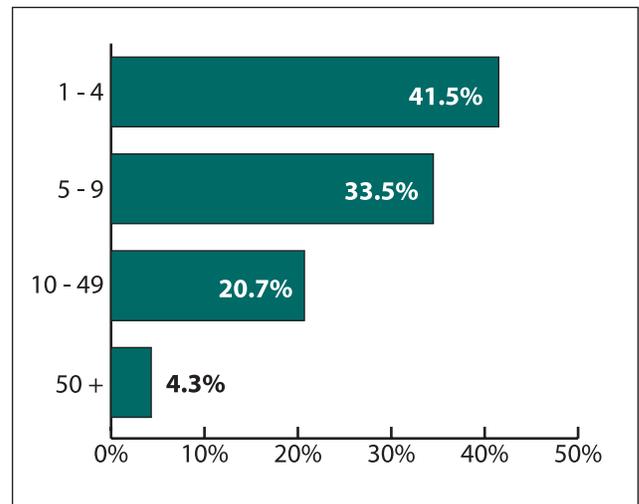
***A quick look at the major findings of the study conclude that:***

- 77 percent of rural companies in the study reported using computers in their business. The mean (average) number of computers per business was 11, while the median was three, suggesting that while some larger businesses were included in the survey, the vast majority of businesses were small.
- Approximately 85 percent of rural companies that reported using computers in their business also reported having their computers connected to the Internet. Of those connected to the Internet, 61 percent used a broadband connection, while 39 percent used a dial-up connection.
- While dial-up users provided multiple reasons for not yet acquiring broadband, the most common reason (46%) was that they felt they don't use the Internet in their business enough to justify the purchase of broadband.
- E-mail remains the most popular application among Internet users, although 52 percent of the rural businesses also reported that they now have a company website.
- Businesses reported that the primary impact of broadband services on their business was in worker productivity. However, 12 percent of the companies in the study reported that if they were unable to acquire the bandwidth they needed, it would also highly impact their decision to relocate.

***Composition of rural Minnesota businesses in the study***

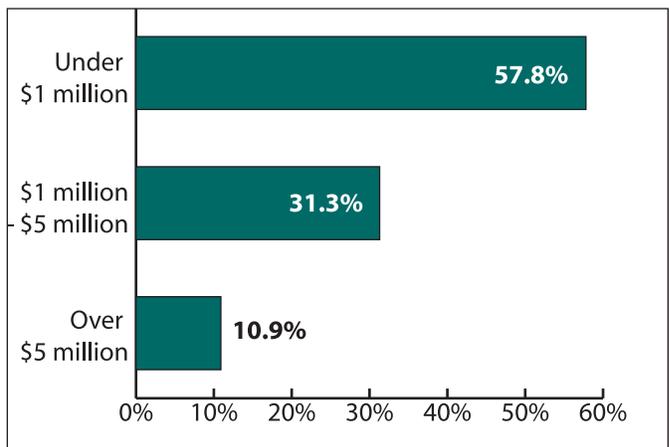
Similar to previous reports on the general composition of rural businesses, the results of this study once again confirm that the majority of businesses in rural Minnesota are small, with 10 or fewer employees, as is the case throughout rural America. As Figure 1 shows, three out of four businesses surveyed reported having fewer than 10 employees, and slightly over 40 percent reported having fewer than five employees. Approximately 20 percent of the businesses reported having between 10 and 50 employees, while only 4 percent reported having more than 50 employees.

A similar distribution can be found when



***Figure 1: Businesses, by number of employees.***

***Figure 2: Businesses, by annual gross sales.***



we examine the amount of gross sales of these businesses (Figure 2). Approximately 58 percent of these rural business reported having gross annual sales of less than \$1 million. Another 31 percent reported annual sales between \$1 million and \$5 million, while the remaining 11 percent reported annual sales in excess of \$5 million.

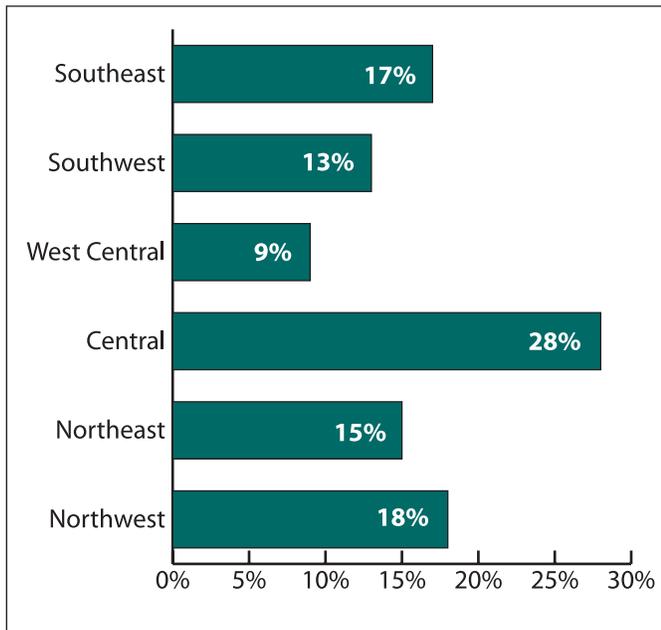


Figure 3: Location of businesses by region.

Figure 4: Businesses by industry sector (NAICS).

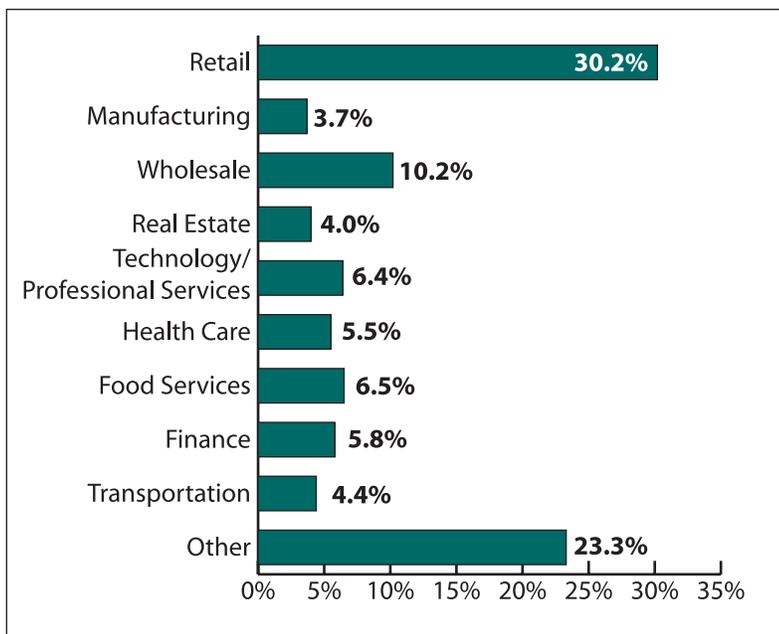


Figure 3 documents the geographic dispersion of the businesses where the data were collected. Using the regional boundaries as defined by the six Minnesota Initiative Foundations, one can see that businesses from all across the state participated in the study, with only one region (Central Minnesota) comprising more than 20 percent of the overall sample.

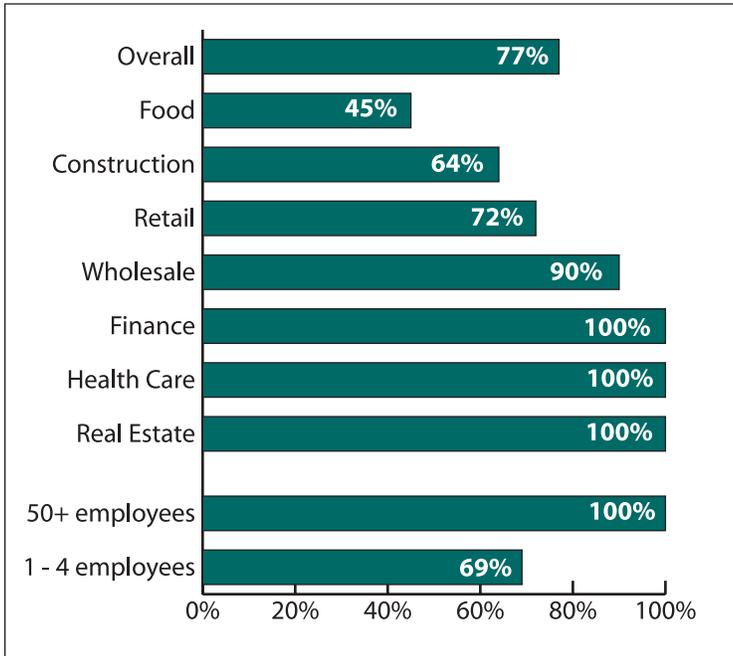
Lastly, using NAICS codes to identify industry categories, it is clear that the retail sector, comprising 30 percent of the businesses, was the dominant sector (Figure 4). However, other significant sectors in the sample included wholesale; finance; real estate; technical, professional & scientific; healthcare; and the food industry.

### Computer use and Internet connectivity

Overall the study found that 77 percent of rural respondents reported using computers every day in their business. The variety of responses among different industry categories ranged from a high of 100 percent in health care institutions and finance, information, and real estate, to a low of 45 percent in the food industry. Not surprisingly, while all the respondents representing businesses with 50 or more employees reported using

computers every day, only 69 percent of businesses with four or fewer employees reported likewise (Figure 5). The median number of computers used in the business was three (mean was 11), but it is clear that for a significant number of very small rural businesses, using a computer, and consequently having access to Internet services and other digital tools, is still not part of their daily practice.

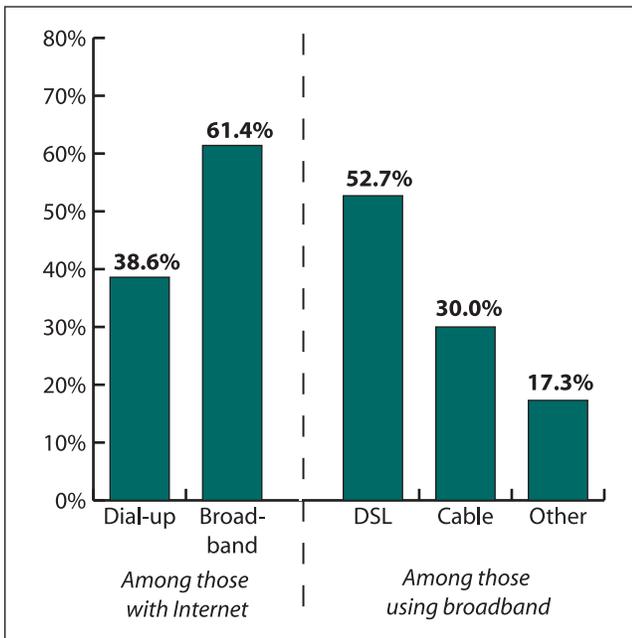
Among those respondents reporting that they use computers in their business, 85 percent reported that they currently purchase an Internet connection. Further, this relatively high percentage of Internet connectivity among businesses that use computers



**Figure 5:** Percentage of businesses with computers, by industry and number of employees.

appears to be relatively stable regardless of the size of the business. In general, it is reasonable to say that if a business in rural Minnesota uses a computer, then there is a high probability that the

**Figure 6:** Adoption rate of Internet technologies among businesses with Internet, plus a breakdown of broadband technologies among those using broadband.



computer is connected to the Internet.

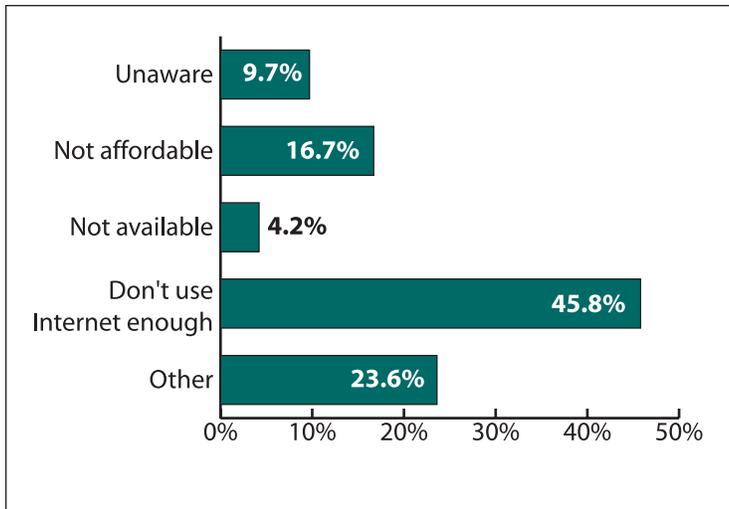
When asked about the type of Internet connection they purchase, 61.4 percent reported purchasing a broadband connection, with the remaining 38.6 percent reporting that they still use a dial-up connection. Of those businesses reporting that they use a broadband connection, 52.7 percent reported purchasing a DSL connection; 30.0 percent a cable modem connection; and the remainder reported purchasing a variety of wireless, fiber, or T-1 connections to their business.

But while 61 percent reported having a broadband connection, the adoption rate seemed to be influenced by the size of the firm: only 51 percent of businesses with fewer than 10 employees reported having a broadband connection, compared to 70 percent of businesses with 10 or more employees.

### Internet applications

Not surprisingly, e-mail was the most commonly used application: 82 percent of businesses online reported that they had an e-mail address where customers could contact them. Over half (52%) reported having a website.

Those businesses that currently use a dial-up connection were asked why they had not yet switched over to broadband. Responses to this question were mixed, with 10 percent reporting that they were unaware that broadband services were available and 17 percent reporting that broadband was still not affordable in their area. However, the largest group (46%) responded that they just don't use the Internet enough in their business to justify the purchase of a broadband connection.



*Figure 7: Reasons for not purchasing broadband, among businesses using dial-up.*

### **Utilization of telecommunication applications**

Businesses in the study were also asked to report what types of telecommunications applications they used. Not surprisingly, e-mail was the most commonly used application, with 82 percent of the businesses online reporting that they had an e-mail address where customers could contact them. Further, over half of the businesses (52%) reported that their company had a website at the time.

Businesses were also asked what business

*Table 1: Among respondents with Internet.*

Use the Internet to:	Percent
Transfer text files	50.5
Transfer data files	48.4
Transfer graphics files	34.2
Maintain inventory	31.5
Sell products/services online	34.8
Maintain contact with suppliers/customers	75.5
Maintain contact with business colleagues	68.5
Video conferencing	5.4
Tracking industry trends	70.1
Learn new skills for you or employees	51.1
Bank online	35.3
Allow employees to work from home	28.3
Interact with government	60.3

functions they conduct online (Table 1). Maintaining contact with suppliers, customers and business colleagues, as well as tracking industry trends, were reported as the most common functions conducted online. Other common activities included transferring text files, learning new skills, and interacting with the government. Slightly over one third of the businesses (34.8%) reported that they actually sell products and services online.

### **The impact of broadband on rural businesses**

Lastly, businesses in the survey were asked what the impact to their business might be if they were unable to acquire the bandwidth they need (Table 2). The most prominent impact of broadband reported by rural businesses was its effect on productivity. Almost one quarter (24%) of the businesses reported that the impact of broadband on worker productivity was high. This is quite consistent with other studies. It also supports the adage that “time is money” and that these business owners believe that the speed of access to the Internet using a broadband connection has the ability to increase worker productivity.

Almost one in five (19%) of the businesses reported that broadband had a high impact on their ability to “do business,” and 15 percent reported that not having adequate access to broadband would highly inhibit their ability to capitalize on some potential business opportunities. A more distressing finding was the 12 percent who reported that not having access to their needed bandwidth would highly affect their company’s decision to relocate.

### **Summary and conclusions**

As stated earlier, concerns with demand and adoption rates of both businesses and residential customers is replacing concern regarding geographic access. Our rural Internet surveys

	<b>None</b>	<b>Little</b>	<b>Some</b>	<b>Moderate</b>	<b>High</b>
<b>Doing business</b>	36.8%	12.1%	19.2%	6.6%	18.7%
<b>Impact on productivity</b>	33.0%	12.6%	17.0%	8.2%	23.6%
<b>Inhibit potential business opportunities</b>	29.7%	16.5%	20.3%	12.6%	15.4%
<b>Affect expansion plans</b>	45.6%	12.6%	14.8%	7.7%	12.6%
<b>Affect training of employees</b>	45.1%	12.1%	17.6%	5.5%	14.3%
<b>Your company would consider moving</b>	57.1%	11.0%	11.0%	2.2%	12.1%

*Table 2: Reported impact of broadband.*

continue to show that such concerns appear to be warranted.

The purpose of this study was to examine the adoption and utilization of Internet technologies by businesses in rural Minnesota. However, it must again be noted that the sampling frame for this study was so dissimilar to the study conducted in 2002 that comparisons would be inappropriate. Recall that in the 2002 sample, only manufacturing and technology-based companies were surveyed. In that study, over 90 percent of the firms surveyed subscribed to an Internet service, compared to 65.5 percent in the current study. The current study, however, surveyed a much wider and representative array of companies, ranging from restaurants and Main Street retailers to health care facilities and professional service providers. Some of these types of businesses are less dependent on information technology than those in the 2002 survey, and consequently, the reported percentage of businesses that are using these technologies is considerably lower.

As documented in both 2002 and the current

study, use of broadband services was strongly correlated with the size of the firm. Simply put, most large firms have it while many small firms don't. Since nearly 95 percent of Minnesota's businesses have fewer than 50 employees, business size is a factor that cannot be easily ignored when it comes to broadband adoption. On the other hand, 61 percent of those businesses connected to the Internet have adopted broadband, well ahead of the residential rate of 27 percent.

And lastly, when companies were asked what might be the impact on their business if they were unable to acquire the bandwidth they needed, the largest reported impact was on worker productivity, most likely due to the increase in speed at which businesses are able connect with their suppliers, customers, the government, etc., by using broadband. Twelve percent rated broadband high enough to say its access would be an important factor in relocation. For these businesses, being able to transact business quickly and efficiently simply allows them to transact more business. And transacting more business is what economic development is all about.



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