



Connected Tennessee®

Technology Assessment of Tennessee Consumers

Executive Summary

July 2009



Key Findings: July 2009

Key Technology Benchmarks, July 2009:

- Households with a computer: 76% (up from 71% in July 2007)
- Households with broadband service: 55% (up from 43% in July 2007)
- Businesses that use a computer: 84% (up from 81% in July 2007)
- Businesses that use broadband: 65% (up from 55% in July 2007)

Other Key Findings:

- In 2009, more than three out of four Tennessee adults (76%) reported that they have a computer at home. This translates into more than 3.5 million Tennessee adults with home computers, a 7% growth since July 2007.
- More than one-half (55%) of all Tennessee adults have broadband service at home, which translates into more than 2.5 million Tennessee adults. Over the past two years, broadband adoption in Tennessee has grown by 28%, with significant growth among minorities, rural residents, older adults, and other groups who often have lower-than-average broadband adoption rates. Statewide, home broadband subscribers are more likely to report that they have excellent access to a variety of resources.
- The average download speed among Tennessee residents is 4.4 Mbps. Only 5% of broadband subscribers report being dissatisfied with their current broadband speeds, and only one in five (20%) broadband subscribers report that they would pay an extra \$10 per month to double their current download speeds.



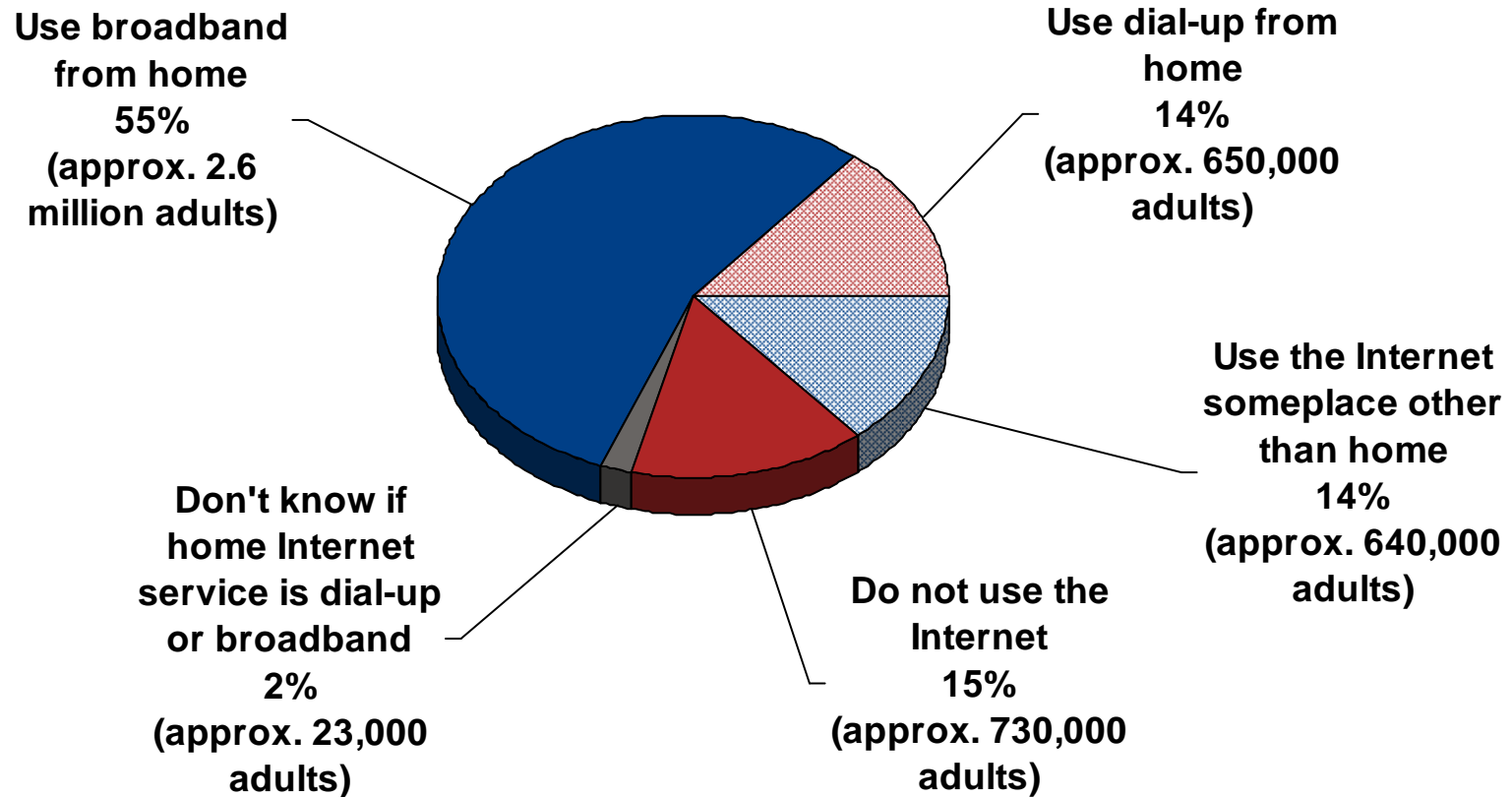
Key Findings: July 2009 *(Continued)*

- Nearly one-half (48%) of laptop computer owners access the Internet via wireless hot spots. Since July 2008, Tennessee has experienced a 21% increase in mobile Internet use (through a cell phone/mobile device, or through a mobile wireless connection). Overall, more than 850,000 Tennessee residents report accessing the Internet using their cell phone or mobile device.
- While 13% of employed Tennessee adults currently telework, 31% say they would telework if given the opportunity. In addition, nearly one-sixth of retirees, one-third of adults with disabilities, and over one-quarter of homemakers say they would likely join the workforce if empowered to do so by teleworking.
- Among adults who do not subscribe to broadband, the top barrier is also the belief that they do not need it, followed by the lack of a computer. Slightly fewer than one in ten residents who do not currently subscribe to broadband (9%) say that they previously did so, but they dropped their service.
- Nearly two-thirds of Tennessee businesses (65%, or approximately 87,000 Tennessee businesses) now subscribe to broadband, compared to just 55% in 2007. The biggest increase has been among small business in Tennessee.
- The average download speed among Tennessee businesses is 4.1 Mbps. Across the state, 11% of broadband-connected businesses say that they could use more bandwidth, though more than eight out of ten of those businesses have chosen not to invest in broadband yet or have not researched whether faster service is available.



Residential Technology Adoption Summary

Percent of all Tennessee residents



Q: Do you have an Internet connection at home?
(n=1,200 TN residents)
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Source: July 2009 Connected Tennessee®
Residential Technology Assessment
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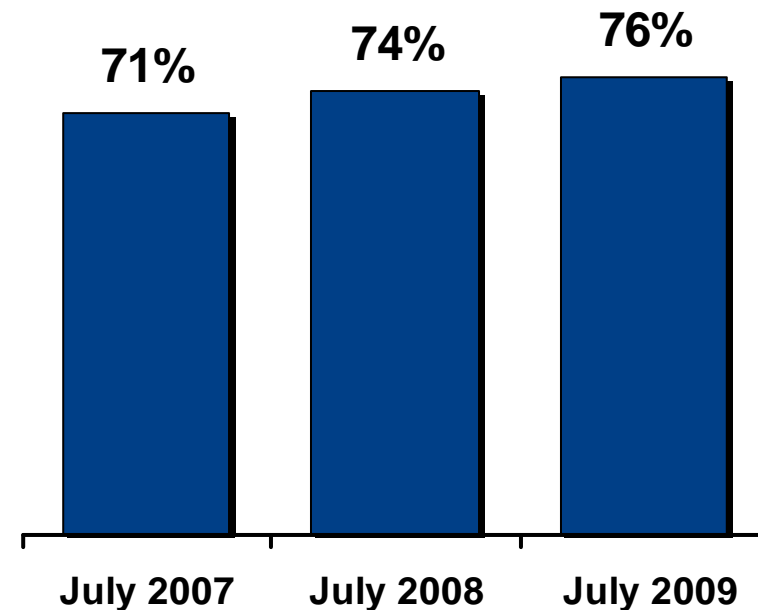


Trends in Residential Computer Ownership

In 2009, more than three out of four Tennessee adults (76%) reported that they have a computer at home, which translates into more than 3.5 million Tennessee adults.

This number is a 7% increase since the inception of Connected Tennessee®.

Percent of all Tennessee residents who own a computer



Q: Does your household have a computer?
(n=9,513 TN residents in 2007, n=1,200 TN residents in 2008 and n=1,200 TN residents in 2009)
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Source: July 2007, July 2008, and July 2009 Connected Tennessee® Residential Technology Assessments
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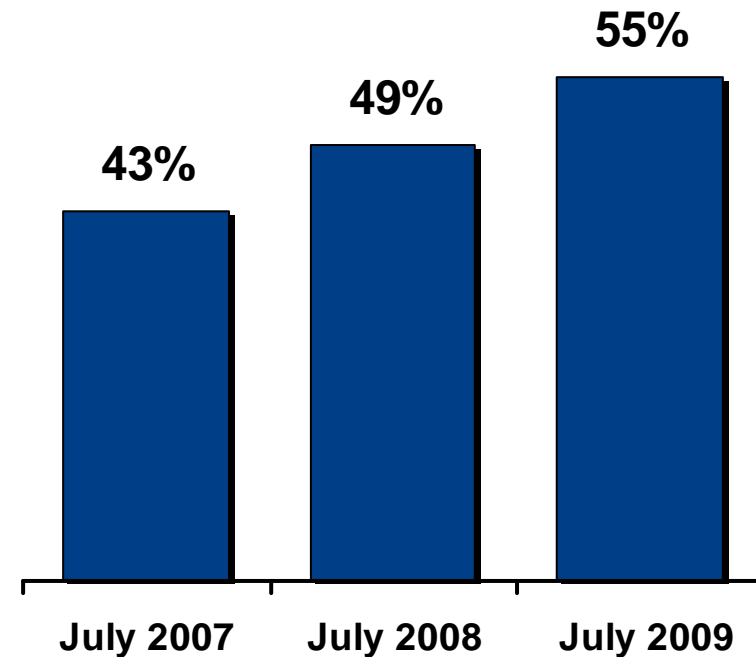


Trends in Residential Broadband Adoption

Percent of all Tennessee residents with broadband service at home

More than one-half (55%) of all Tennessee adults have broadband service at home, which translates into more than 2.5 million Tennessee adults.

Over the past two years, Tennessee has experienced a 28% rate of growth in broadband adoption.



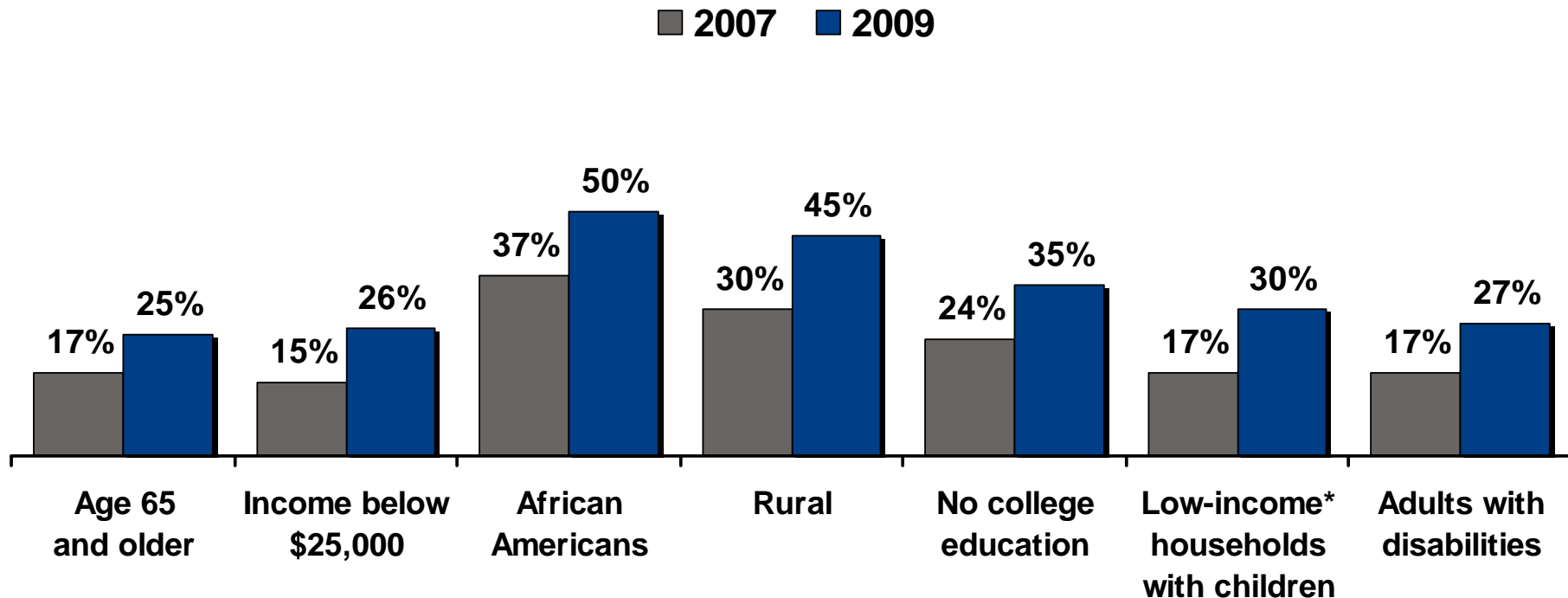
Q: Which of the following describe the type of Internet service you have at home?
(n= 9,513 residents in 2007, n=1,2000 TN residents in 2008 and n=1,200 TN residents in 2009)
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Source: July 2007, July 2008, and July 2009 Connected Tennessee® Residential Technology Assessments
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Tennessee Residents With Home Broadband Service

Trends in broadband adoption since the inception of Connected Tennessee®



Q: Which of the following describe the type of Internet service you have at home?
 (n=9,513 TN residents in 2007 and n=1,200 residents in 2009)
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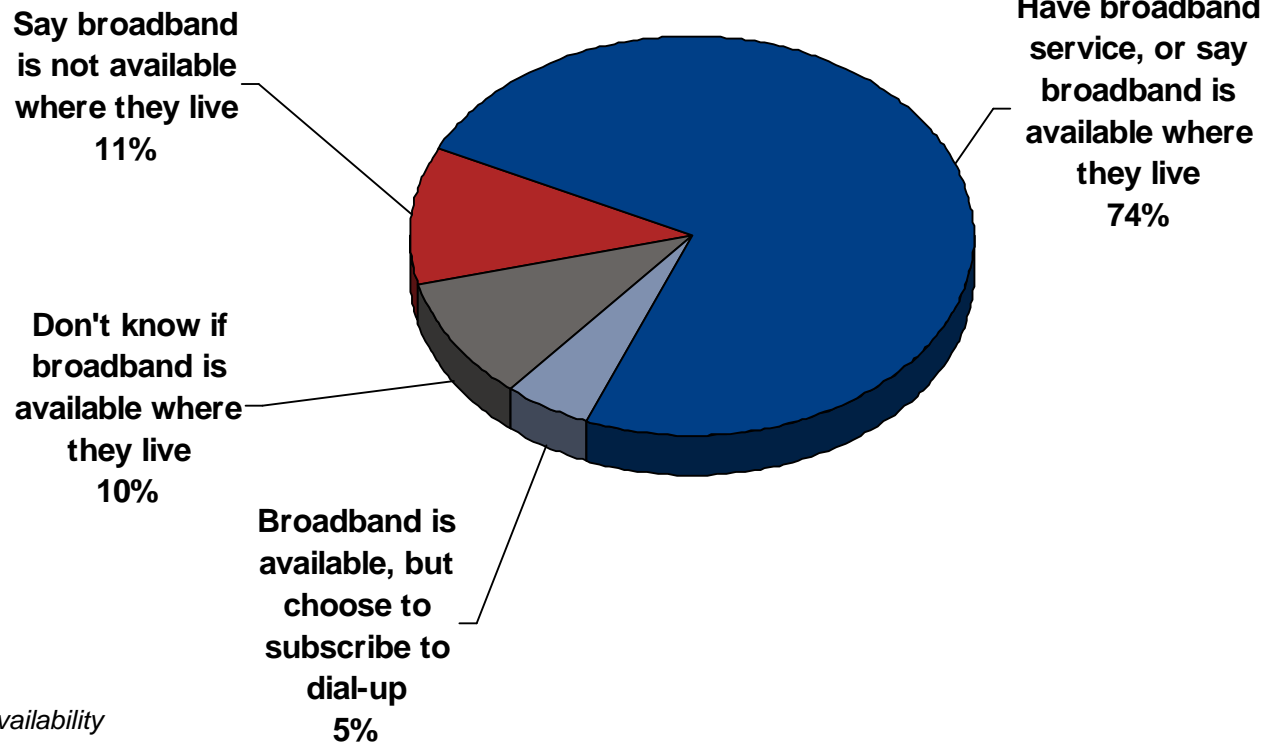
*Low-income=annual household incomes below \$25,000
 Source: July 2007 and July 2009 Connected Tennessee®
 Residential Technology Assessments
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Residential Perceptions of Broadband Availability in Tennessee

Awareness of broadband availability among Tennessee residents

Although 91% of Tennesseans have broadband service available,* only 74% are aware that broadband service is available.



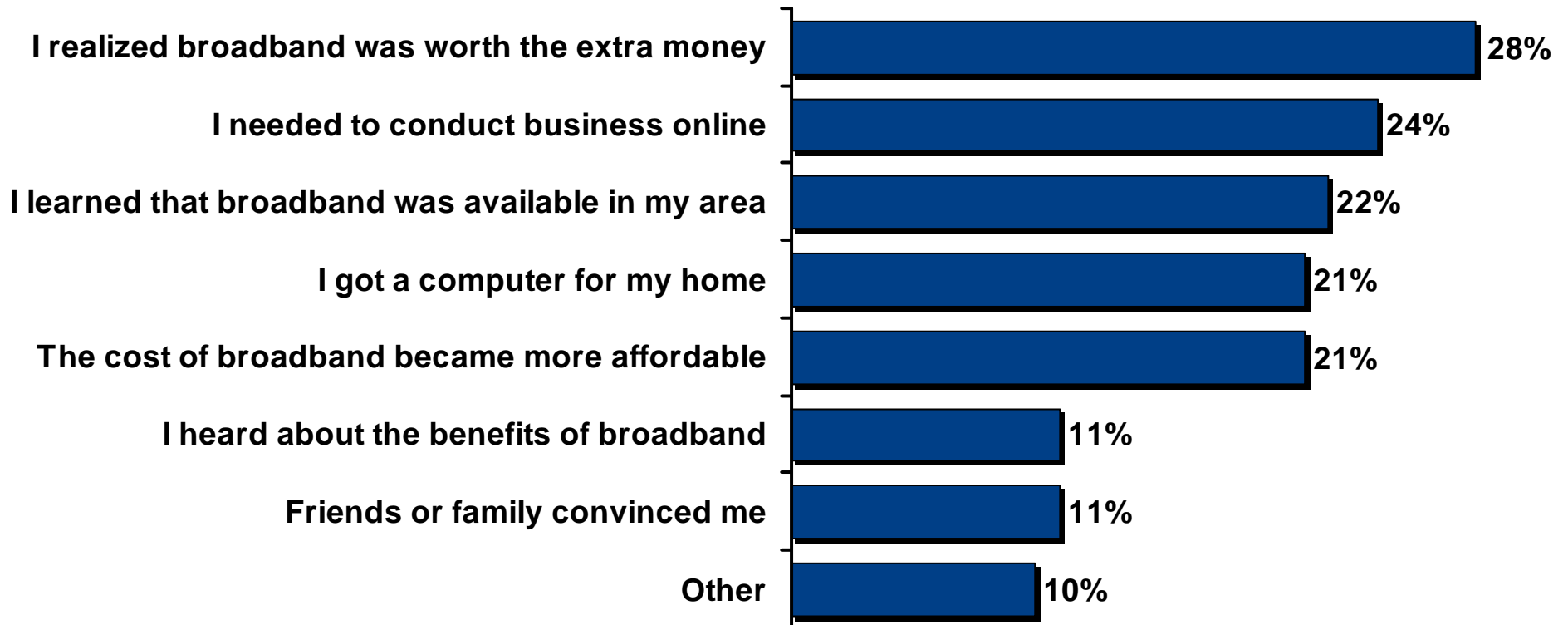
**Source: Connected Tennessee Broadband Availability Map as of June 30, 2009*
Q: To the best of your knowledge, is broadband or high-speed Internet service available in the area where you live?
(n=1,200 TN residents)
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Source: July 2009 Connected Tennessee® Residential Technology Assessment
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Why Tennessee Residents Subscribe to Broadband

Percent of Tennessee residents with a broadband connection at home*



Q: Which of the following contributed to your decision to subscribe to broadband service?
(n=650 TN residents with broadband service at home)

*Percentages do not add up to 100% because individuals could give multiple responses.

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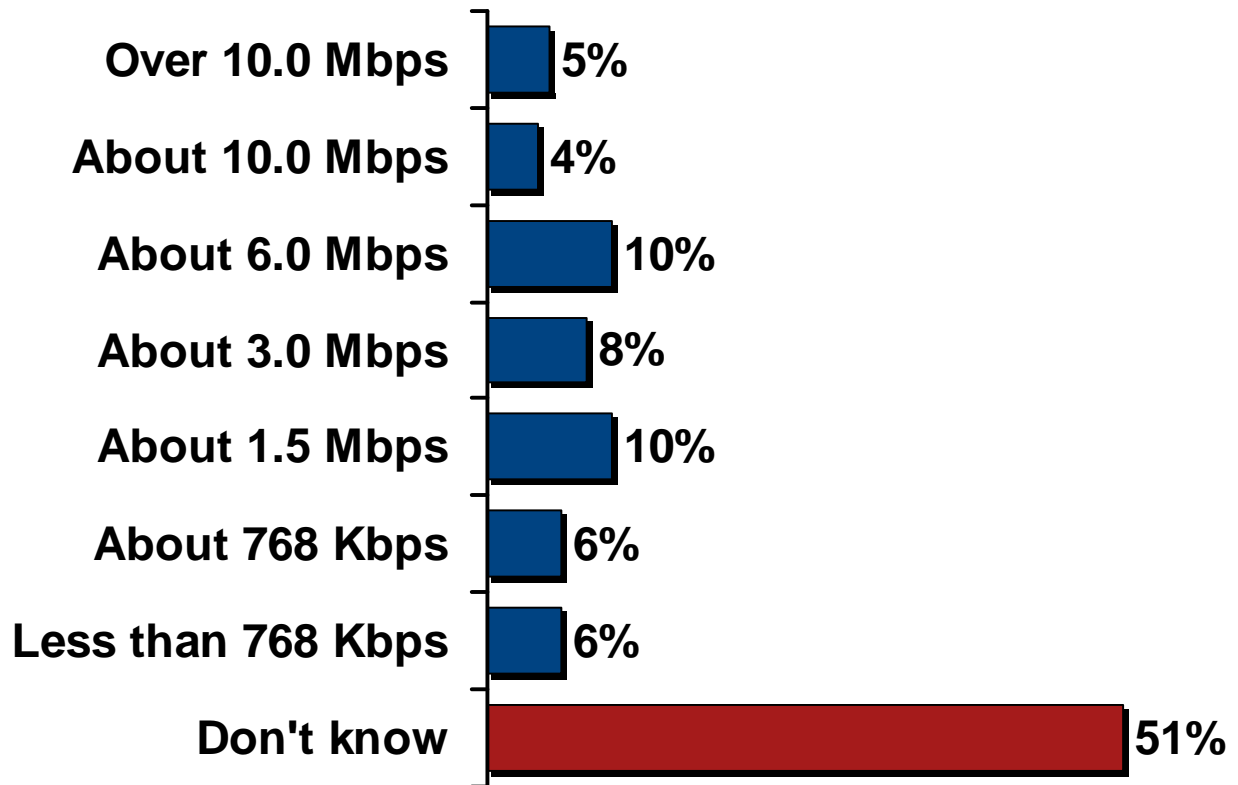


Residential Broadband Download Speeds

Download speeds among residential Tennessee broadband subscribers

Broadband subscribers who know their download speeds reported an average speed of 4.4 Mbps.

Over one-half of Tennessee residents who subscribe to broadband do not know their current bandwidth.



Q: To the best of your knowledge, what is the approximate download speed or bandwidth provided by your Internet service provider?
 (n=650 TN residents with home broadband service)
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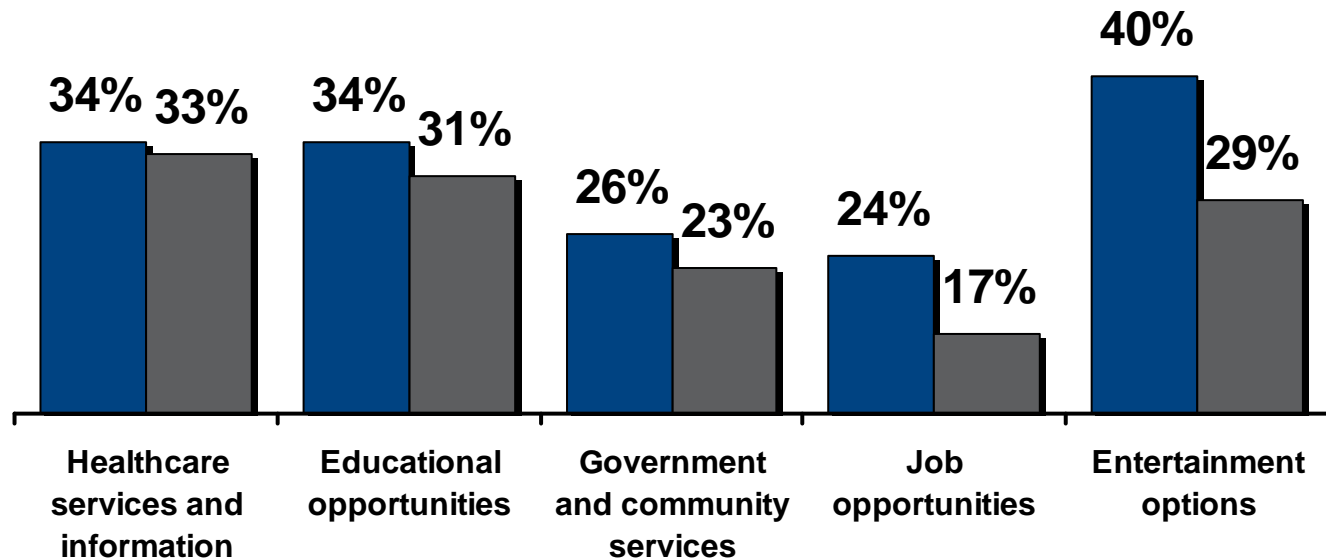


Broadband's Impact on Tennessee Residents' Quality of Life

Tennessee residents who report they have “excellent” access to the following resources

- Home broadband subscribers
- Residents without home broadband service

Home broadband subscribers are more likely to report that they have excellent access to a variety of resources.



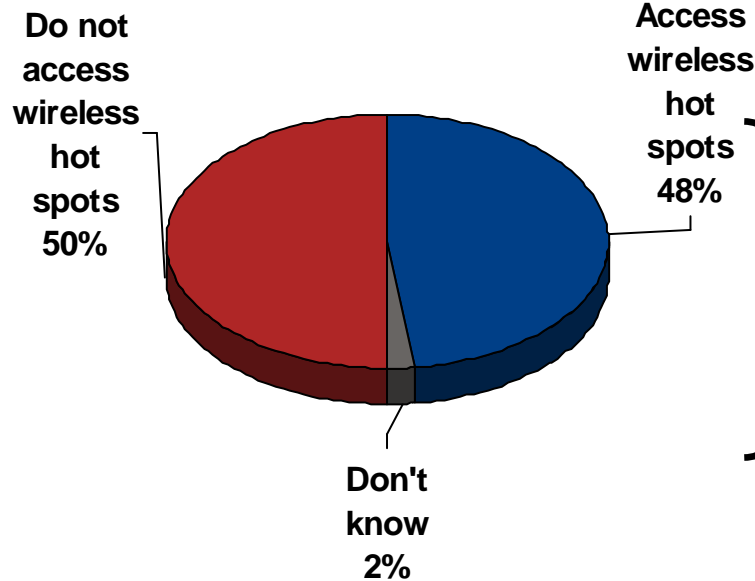
Q: How would you rate your current access to... ?
 (n=1,200 TN residents)
 Based on a five-point scale, where 5=excellent and 1=poor
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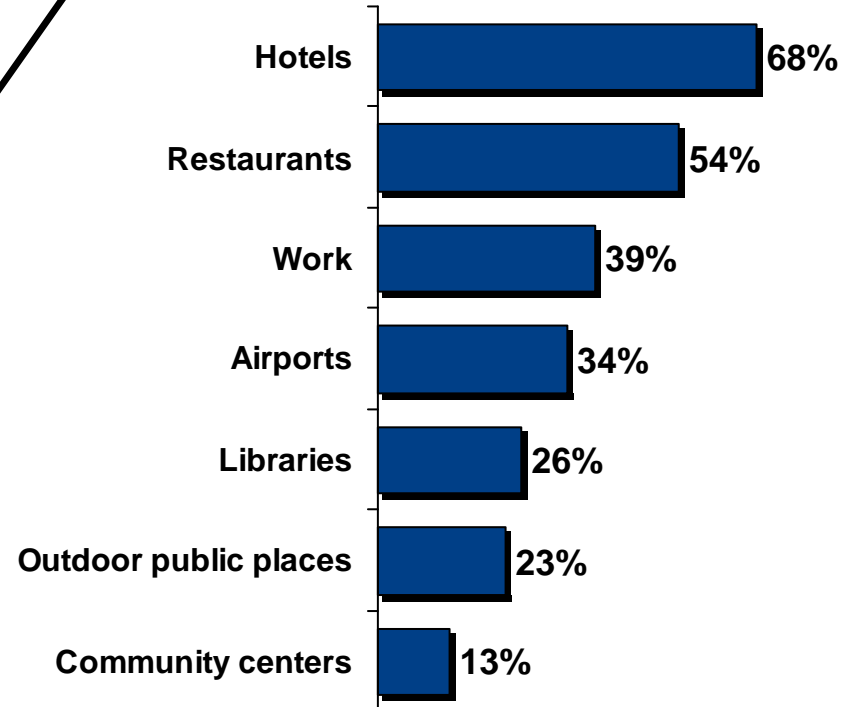


Hot Spot Usage Among Residential Laptop Computer Owners

Among Tennessee laptop computer owners



Most popular places to access hot spots (among wireless hot spot users)



Q: Do you regularly use Wi-Fi zones, sometimes called "hot spots," to access the Internet with your laptop? (n=376 Tennessee laptop owners) and
 Q: Do you regularly use hot spots at any of the following locations? (n=172 Tennessee wireless hot spot users)
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Source: July 2009 Connected Tennessee® Residential Technology Assessment
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Mobile Internet Users Among Tennessee Residents

Since July 2008, Tennessee has experienced a 21% increase in mobile Internet use.

Use of a “mobile service” includes accessing the Internet through a cellular phone, or using a laptop computer either to access the Internet via Wi-Fi hot spots or through a cellular network.

Q: Do you regularly use Wi-Fi zones, sometimes called “hot spots,” to access the Internet with your laptop?

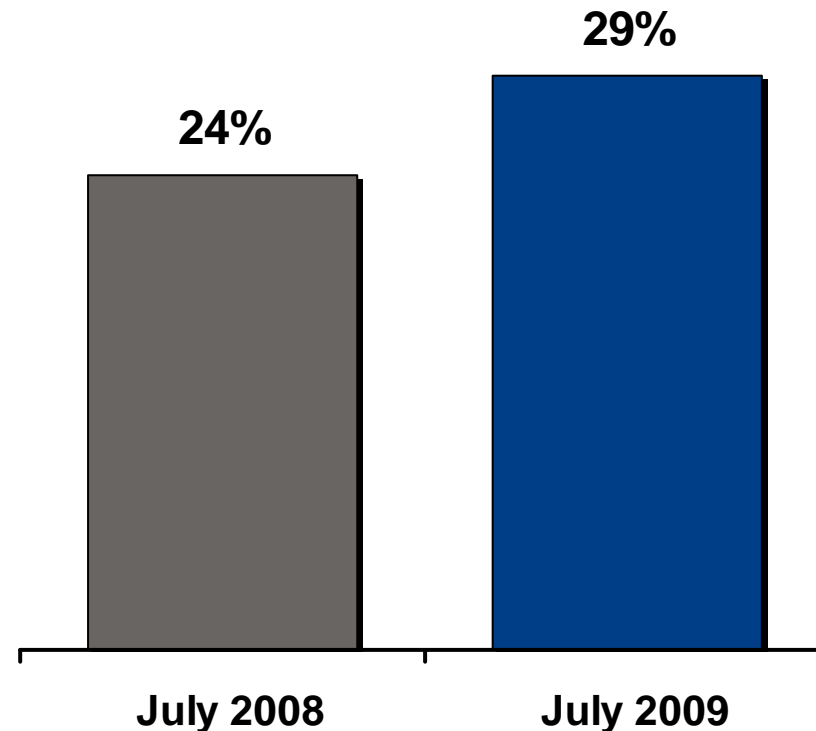
Q: Do you access the Internet through a cellular phone or other mobile device?

Q: On your laptop computer, do you subscribe to a mobile wireless service that allows you to access the Internet through a cellular network? (Question not asked in 2007)

(n=1,200 TN residents)

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Percent of Tennessee residents who are mobile Internet users



Source: July 2009 Connected Tennessee® Residential Technology Assessment
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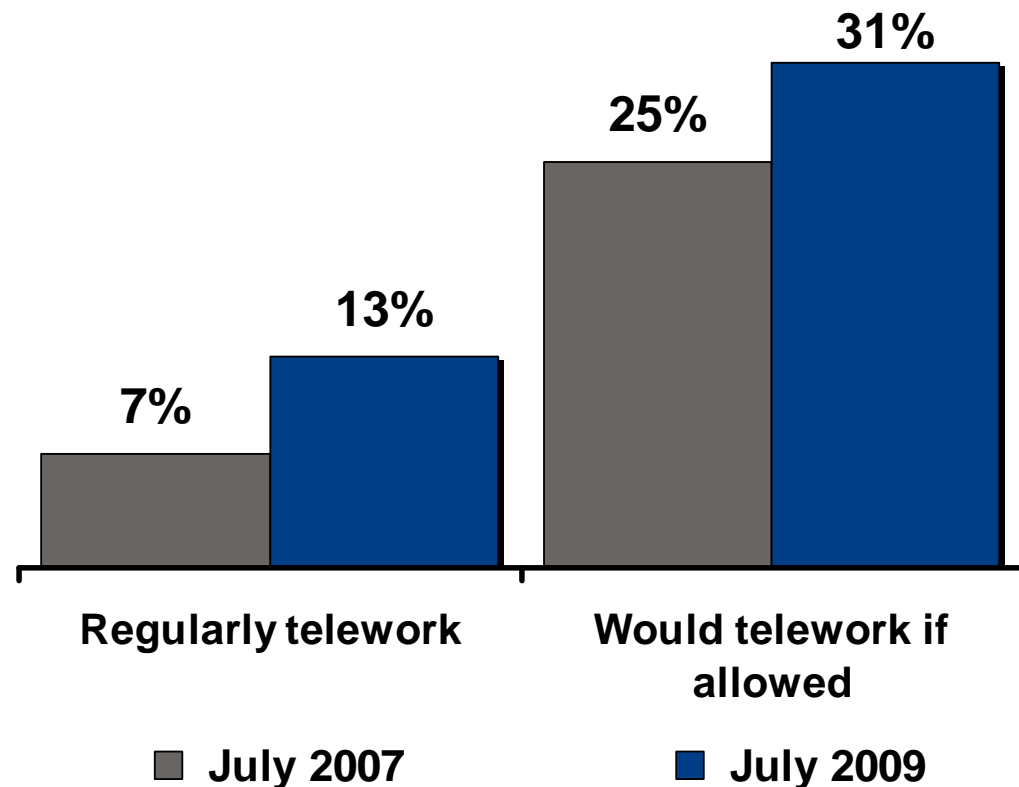
Teleworking Trends Among Tennessee Residents

The percentage of Tennessee employees who telework has nearly doubled since July 2007.

This suggests that as more people have learned about the economic and environmental benefits of teleworking, the number of people who want to telework has grown.

Q: Do you regularly work from home through a broadband connection, commonly known as teleworking (2007)?, Q: Which of the following describe the way you work from home (2009)? And Q: Would you be interested in teleworking if your employer allowed it (2007 and 2009)? (n=5,101 TN residents in 2007 and n=652 TN residents employed full-time or part-time in 2009).
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Among Tennessee residents employed full-time or part-time



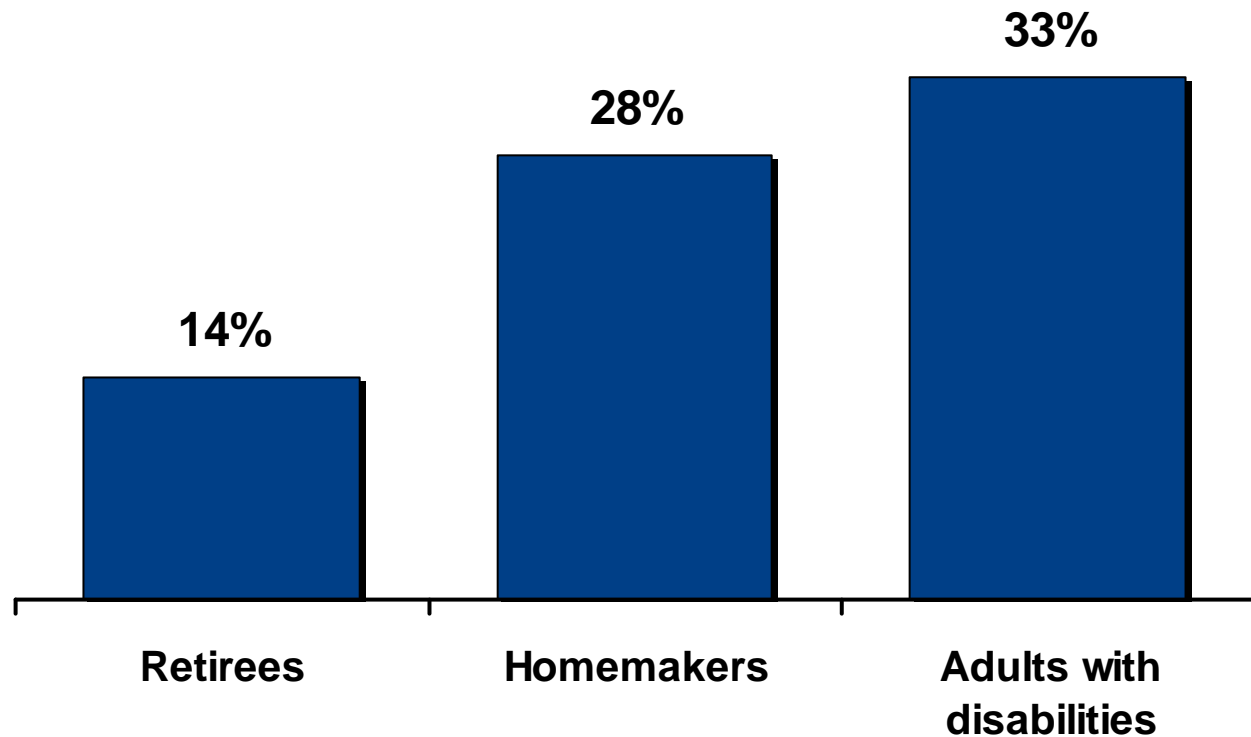
Source: July 2007 and July 2009 Connected Tennessee® Residential Technology Assessments
www.connectedtennessee.org



The Potential Impact of Telework on the Labor Force

Teleworking could also provide an additional boost to the state's workforce, as nearly one-sixth of retirees, one-third of adults with disabilities, and over one-quarter of homemakers say they would likely join the workforce if empowered to do so by teleworking.

Tennessee residents who do not currently work and are “very likely” or “somewhat likely” to work outside the home if allowed to telework



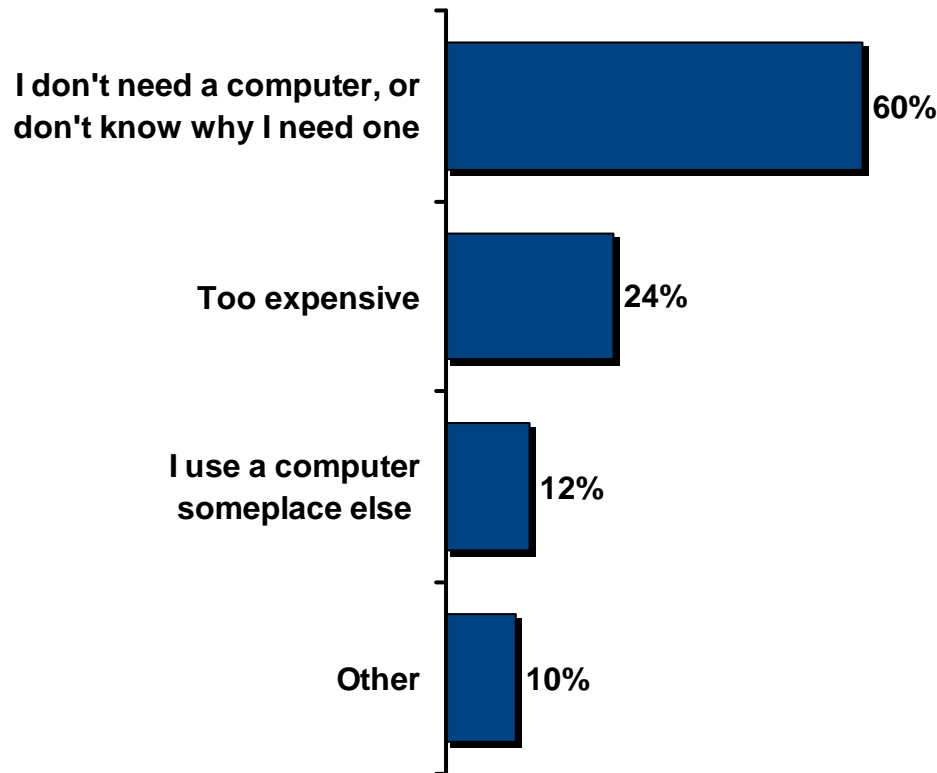
Q: If you were able to work from home through a broadband connection - commonly known as teleworking - how likely is it that you would work outside the home?
(n=548 TN residents not employed full-time or part-time)
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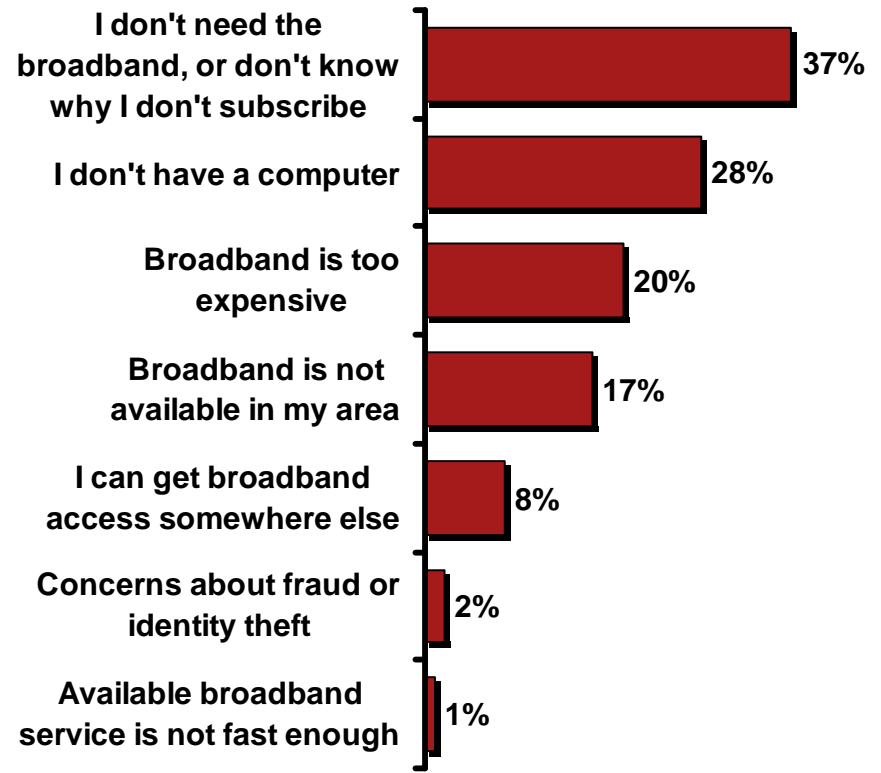


Residential Barriers to Technology Adoption

Barriers to computer ownership*



Barriers to broadband adoption*



Q: Why don't you have a computer at home?

(n=294 TN residents with no home computer) and

Q: Why don't you subscribe to broadband at home?

(n=550 TN residents that do not have home broadband service)

*Percentages do not add up to 100% because individuals could give multiple responses.

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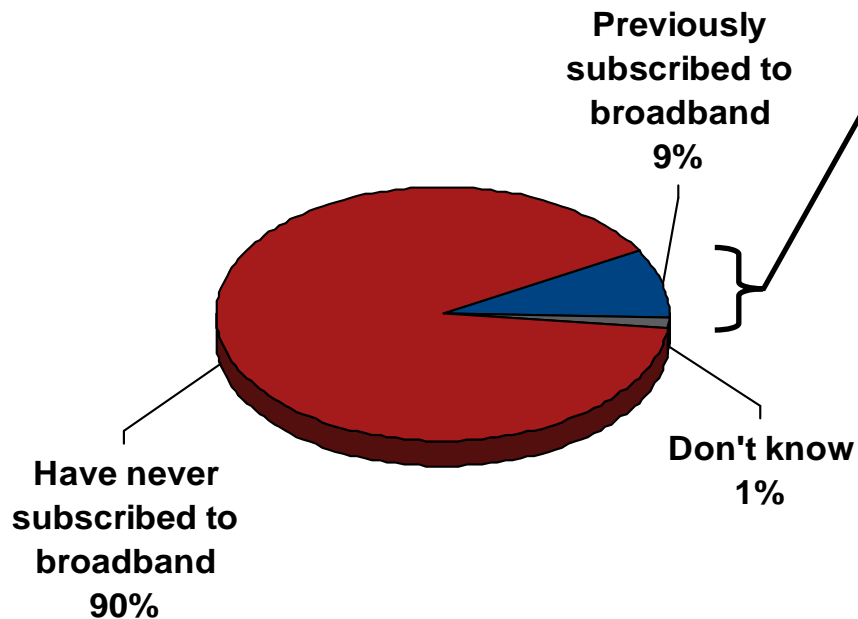
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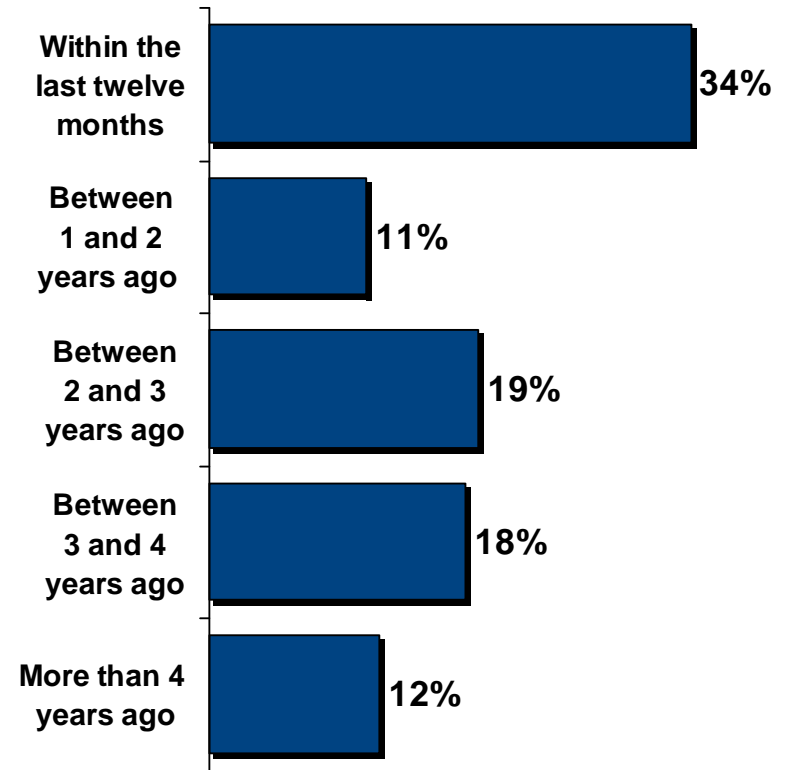
Residents Who No Longer Subscribe to Broadband

Among Tennessee residents with no home broadband connection



Q: Have you ever subscribed to broadband Internet service?
 (n=550 TN residents without broadband service at home) and
 Q: When did you stop subscribing to broadband service?
 (n=47 TN residents who subscribed to broadband service in the past)
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When ex-subscribers dropped their home broadband service

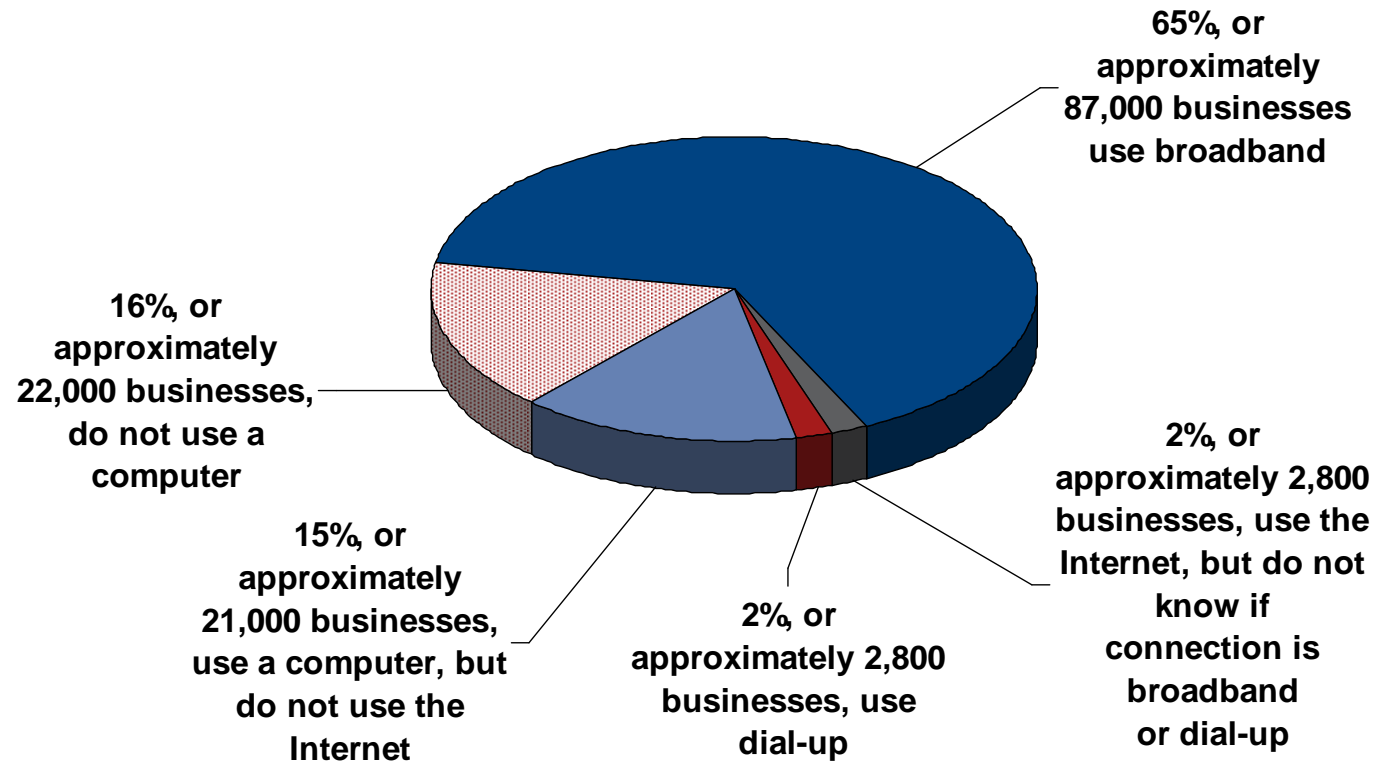


Source: July 2009 Connected Tennessee® Residential Technology Assessment
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Technology Adoption Among Tennessee Businesses

Percent of all Tennessee businesses



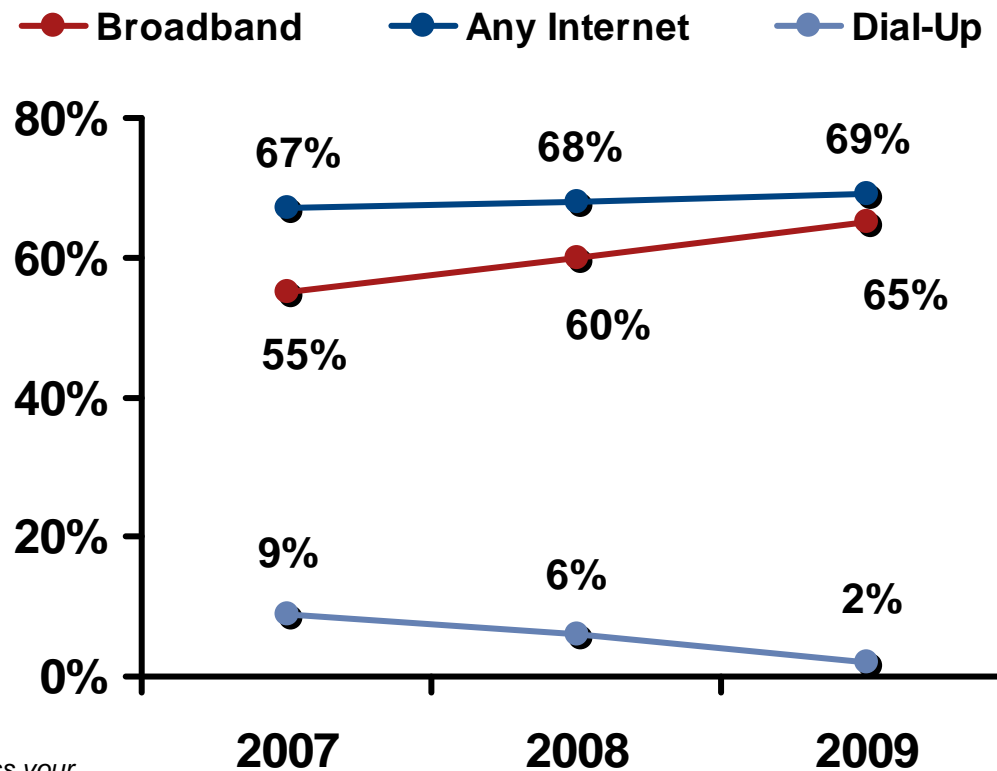
Source: July 2009 Connected Tennessee® Survey of Businesses



Internet Adoption Among Tennessee Businesses (Dial-Up and Broadband)

About two-thirds (65%) of Tennessee businesses subscribe to broadband Internet service; this is an 18% increase since July 2007.

Percent of all Tennessee businesses



Q: Which of the following describes the type of Internet access your company has?

(n=812 TN businesses in 2007, n=808 TN businesses in 2008, and n=807 TN businesses in 2009)

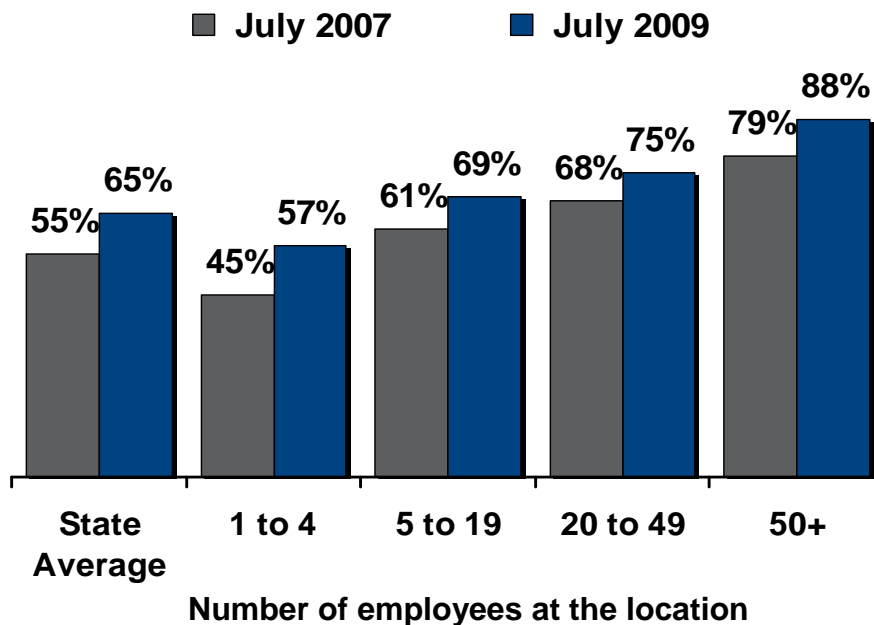
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Source: July 2007, July 2008, and July 2009
 Connected Tennessee® Surveys of Businesses
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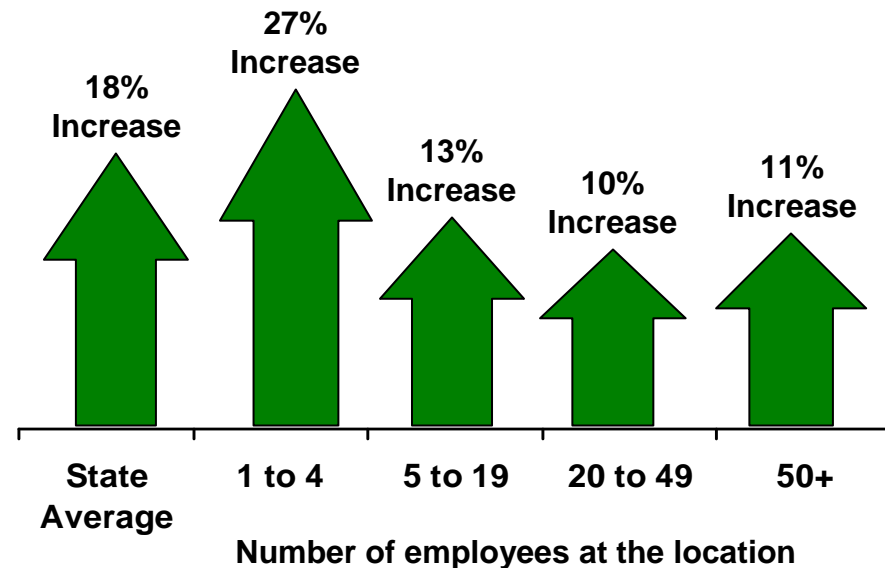


Broadband Adoption Trends by Business Size

Trends in broadband adoption by business size



Percent change in broadband adoption from July 2007 to July 2009



Q: Which of the following describes the type of Internet access your company has?
 (n=812 TN businesses in 2007 and n=807 TN businesses in 2009)
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Source: July 2007 and July 2009 Connected Tennessee®
 Surveys of Businesses
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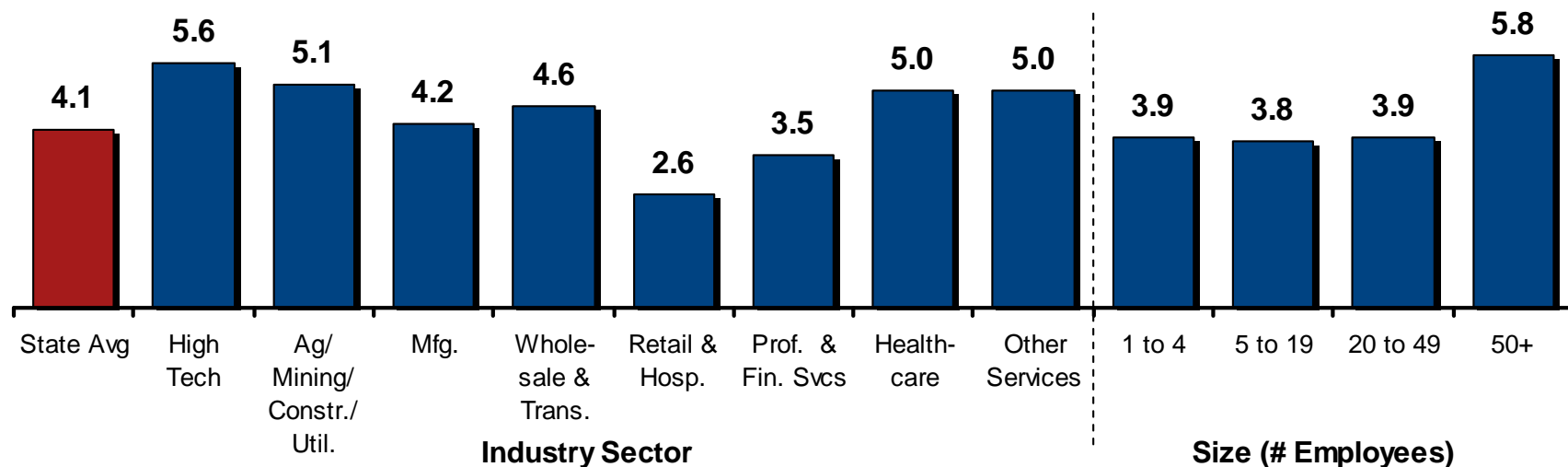
Average Broadband Download Speeds by Size and Industry Sector

(among businesses that know their approximate bandwidth)

Broadband-connected businesses in the High Tech sector report the highest average broadband speed, followed by the Professional/Finance sector.

On average, small and medium sized businesses have broadband speeds below the state average.

Average download speed (Mbps), by sector and size
(among businesses that know their approximate bandwidth)



Q: To the best of your knowledge, what is the approximate bandwidth provided by your Internet service provider?

(n=291 broadband-connected TN businesses that know their approximate download speed)

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Source: July 2009 Connected Tennessee® Survey of Businesses
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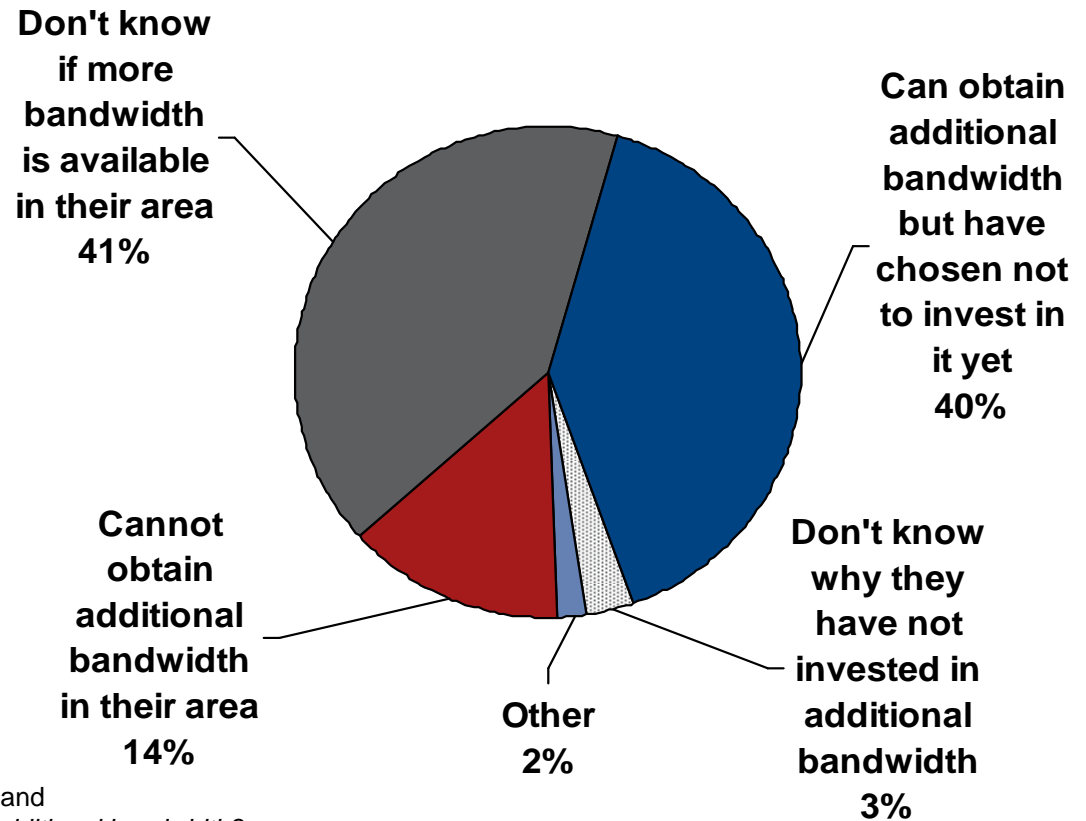


Demand for Greater Bandwidth Among Tennessee Businesses

In Tennessee, 11% of broadband-connected businesses say that they could use more bandwidth.

Among those businesses that say they need more bandwidth, more than eight out of ten Tennessee businesses have chosen not to invest in broadband yet or have not researched whether faster service is available.

Among businesses that say they need more bandwidth



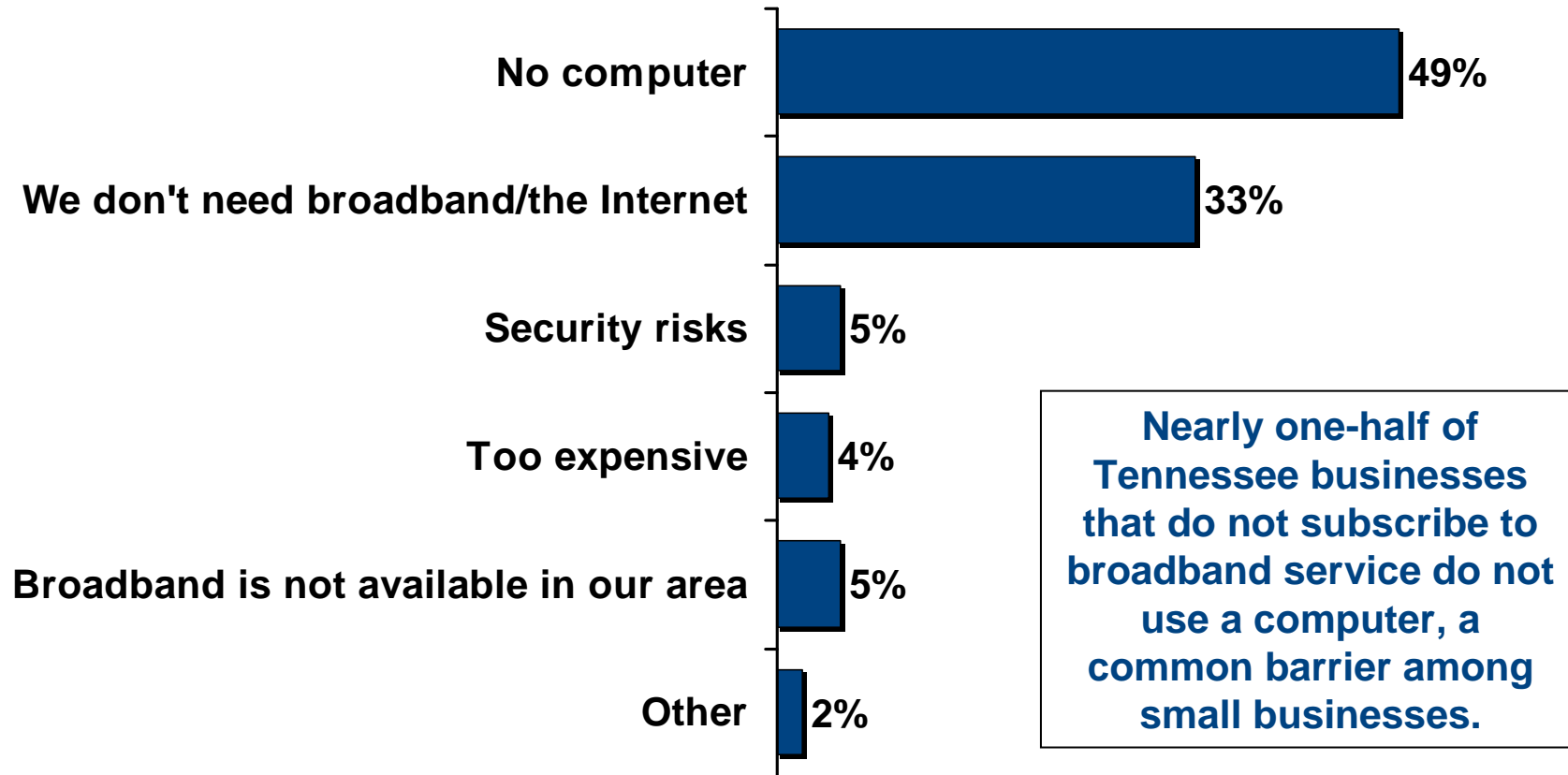
Q: How well does your current bandwidth meet your needs? and
 Q: Which of the following apply to your company's need for additional bandwidth?
 (n=561 TN businesses with a broadband connection and
 n=76 TN businesses that say they could use more bandwidth)
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Source: July 2009 Connected Tennessee® Survey of Businesses
www.connectedtennessee.org



Barriers to Broadband Adoption Among Tennessee Businesses

Among Tennessee businesses with no broadband service*



Q: Why doesn't your organization subscribe to broadband service?
(n=246 TN businesses with no Internet or broadband service)

*Percentages do not add up to 100% because businesses could give multiple responses.

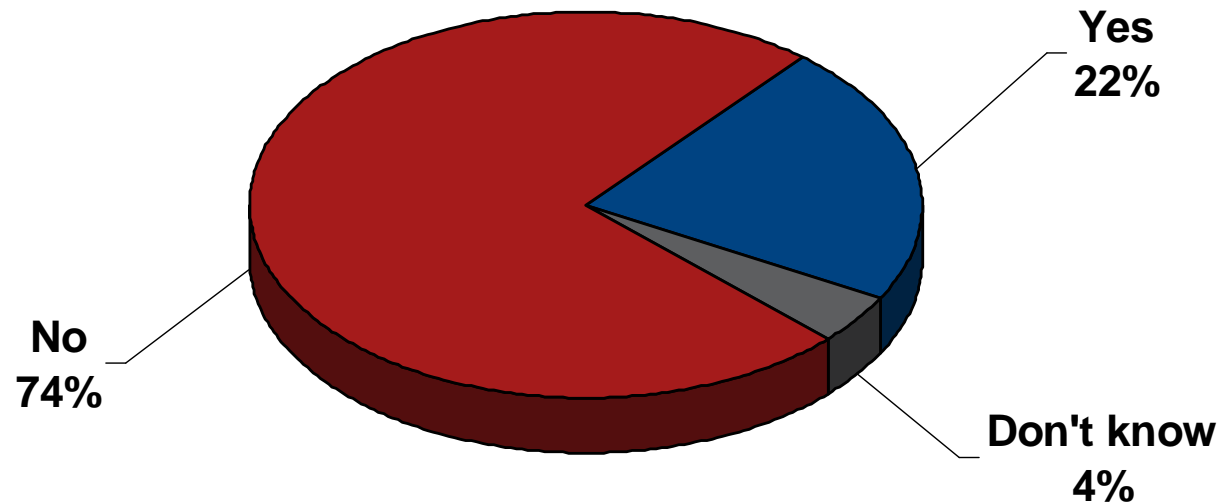
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Teleworking Among Tennessee Businesses

Tennessee businesses that allow employees to telework

Nearly one-quarter of Tennessee businesses (22%, or approximately 30,000 businesses) allow their employees to telework.



Q: Do any employees within your organization work from home during normal business hours on a regular basis?
(n=807 TN businesses)
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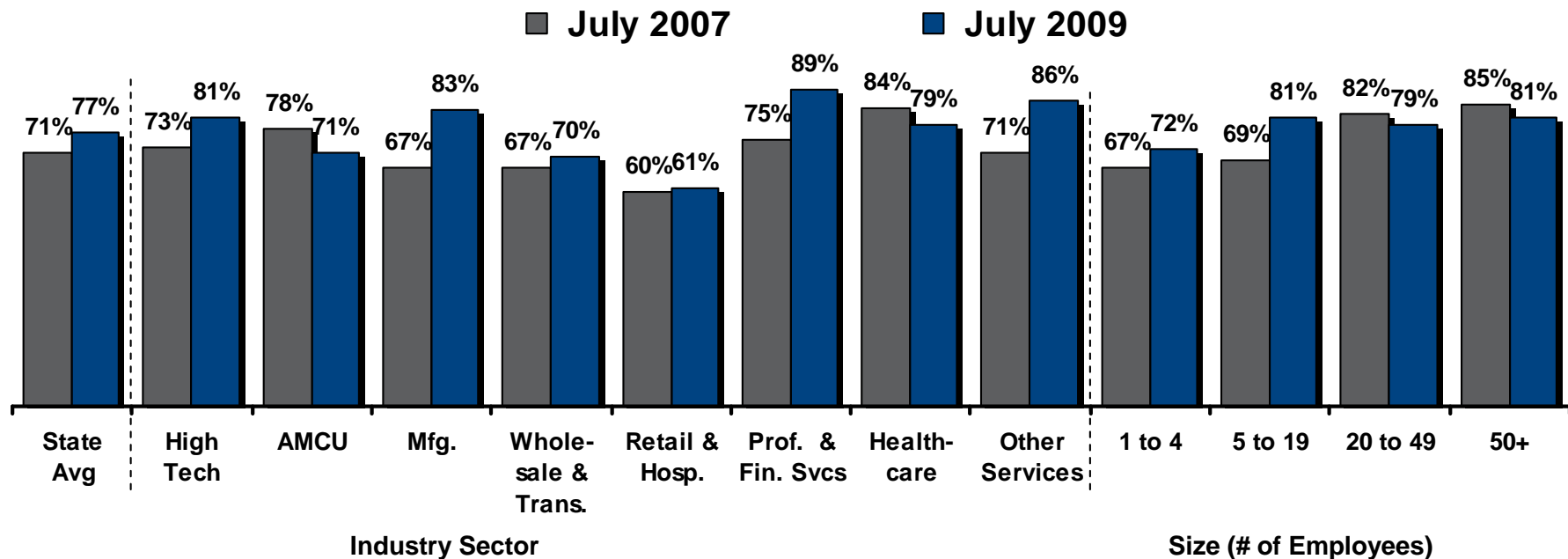
Source: July 2009 Connected Tennessee® Survey of Businesses
www.connectedtennessee.org



Trends in Tennessee Government Website Use

Use of Tennessee state government websites has increased by 8% since July 2007.

Internet-connected Tennessee businesses that visit state government websites at least once per year



Q: How often, if ever, do employees of your company visit Tennessee state government websites for business purposes?
 (n=615 TN businesses in 2007 that use the Internet and n=598 TN businesses in 2009 that use the Internet)
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Source: July 2007 and July 2009 Connected Tennessee®
 Surveys of Businesses
www.connectedtennessee.org



Residential Assessment Methodology

- **Data were collected by telephone through live computer-assisted interviews from a statewide random digit dial (RDD) sample of 1,200 households contacted between June 30 and July 12, 2009. On average, each survey took approximately 10 minutes to complete. Data were collected by Thoroughbred Research Group of Louisville, Kentucky.**
 - This research was designed to update the state-level benchmarks that were established by the benchmark survey completed in July 2007.
- **The questionnaire screened to include only adults age 18 or older with quotas set by gender and age to ensure adequate representation of all adults in the state.**
- **Weights were applied to correct for minor variations and ensure that the sample matches the most recent U.S. Census estimates of the state's population by age and gender. Weighting and research consultation were provided by Lucidity Research LLC, www.lucidityresearch.com.**
- **In the past, Connected Tennessee® has compared its statewide results to national trends reported by the Pew Internet and the American Life Project. Due to changes in sampling methodology used for the national survey (namely the inclusion of surveys conducted via cellular phone), those comparisons were not included in July 2009.**
- **Sampling margin of error:**
 - Statewide, full sample (n=1,200): $\pm 2.9\%$ at the 95% level of confidence. This sample error accounts for sample weighting, using the effective sample size.



Business Assessment Methodology

- Eight hundred and seven (807) Tennessee businesses were contacted by telephone between June 30 and July 9, 2009. Data were collected by Thoroughbred Research Group in Louisville, Kentucky, www.torinc.net.
- The error interval or sample tolerance for the survey is $\pm 4.4\%$ at the 95% confidence level. This sample error accounts for sample weighting, using the effective sample size.
- Similar surveys, using an identical methodology and sample design, were conducted with Tennessee businesses by Connected Tennessee® in July 2007 (n=812) and July 2008 (n=808). The July 2009 survey is designed to update those July 2007 benchmarks.
- Sample quotas were established by company size (5 brackets) and industry sector (8 sectors). Within these 40 cells, a randomly drawn sample of businesses listed with Dun & Bradstreet were contacted for the survey.
- This approach gathers enough interviews within size and industry subsectors to analyze with confidence.
- Weighting of the survey data enables the total sample to also be representative of all employer business establishments in Tennessee, according to the U.S. Census Bureau *County Business Patterns* (CBP) data. Weighting and research consultation were provided by Lucidity Research LLC, www.lucidityresearch.com.



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