



Strategic Technology Plan



CONNECTED Carter County

February 22, 2010



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Connected Carter County 44H Executive Summary

Why Is This Important?

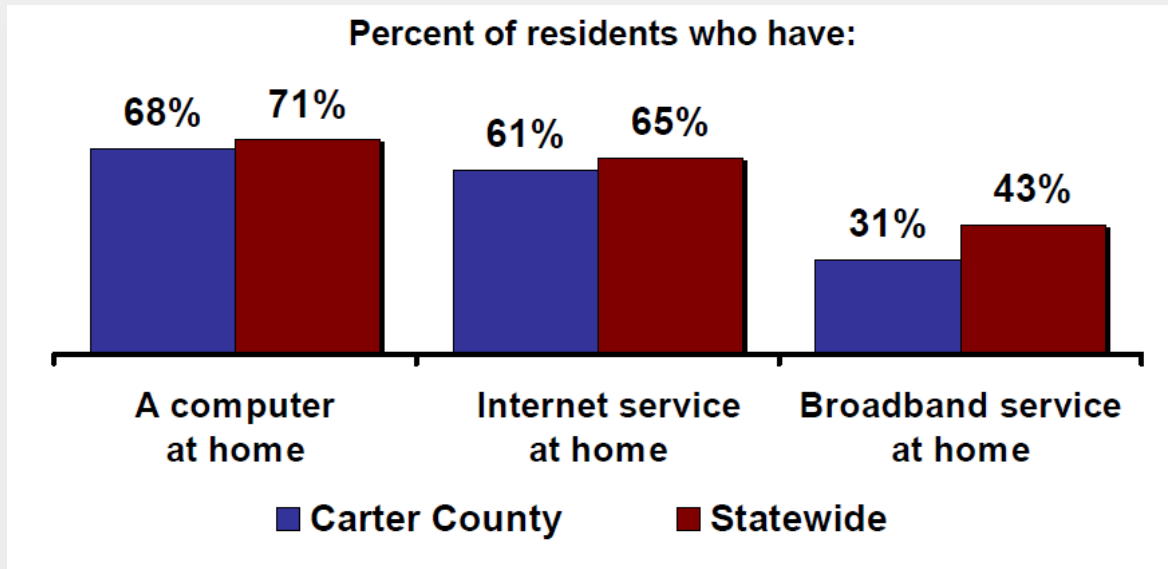
Too often in the past, communities have seen little need for broadband technology in the day-to-day activities of businesses and lives. However, broadband technology allows for innovation and opportunities. Broadband strips away barriers that have prevented growth in the past. Carter County understands the opportunities broadband provides and has prepared a vision to take advantage of these opportunities.

In a report released in February 2008 measuring the economic impact of broadband, Tennessee, including Carter County, stands to see a \$2.4 billion economic impact from a modest increase in broadband adoption. *The Economic Impact of Stimulating Broadband Nationally* released by Connected Nation details the potential state-by-state impact of accelerated broadband access and use. According to the report, broadband expansion and adoption in Tennessee can expect to:

- Create and retain over 49,000 jobs
- Create more than \$1.6 billion in direct income growth
- Save Tennesseans roughly \$13 million in average healthcare costs
- Save residents more than \$130 million in annual gas mileage costs (teleworking, shopping online, etc.)
- Cut more than 66 million pounds in average annual CO₂ emissions

Where Are We Today?

Today, Carter County is served with broadband via DSL by CentryLink, cable modem by Charter Communications and Comcast Corporation and via fixed wireless by Planet Connect Internet. A number of mobile wireless providers are also available in Carter County including AT&T, Sprint, US Wireless and Verizon Wireless who have several levels of coverage at a variety of speeds and prices. Satellite providers HughesNet and WildBlue are also available in Carter County, though these are not as affordable as the fixed broadband providers mentioned above.



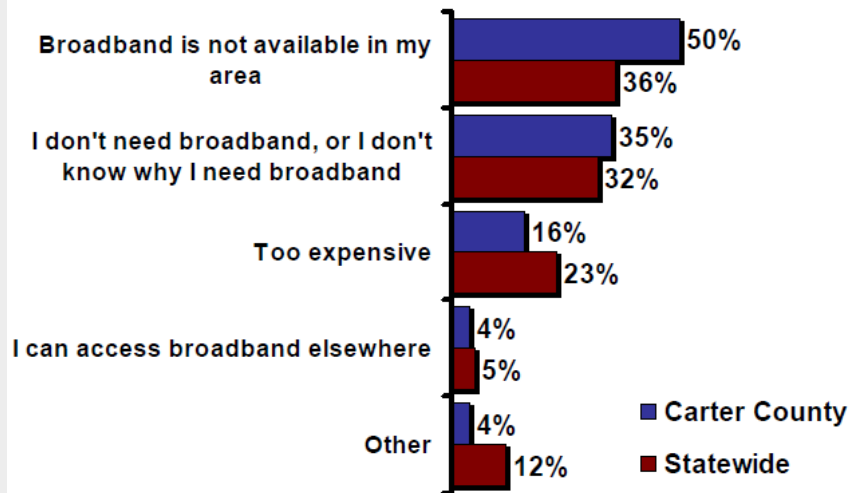
Broadband and technology are only starting to be utilized in Carter County. Computer ownership, Internet usage and broadband usage are all below the state averages. Home broadband adoption is at 31% in Carter County, while the state average is at 43%. According to Connected Tennessee’s *Tennessee Technology Trends 2007*, education, cost and availability are the leading barriers to technology adoption. The leading barriers to computer ownership in Carter County are “I don’t need a computer” at 57% and “Other” at 21%. Barriers to Internet adoption are “I don’t own a computer” at 63% and “I don’t need the Internet, or I don’t know why I need the Internet” at 22%. The leading barriers to broadband adoption among Internet users in Carter County are “Broadband is not available in my area” at 50% and “I don’t need broadband, or I don’t know why I need broadband” at 35%.¹

Internet applications and services are used less than the state average on most accounts. The leading applications among Carter County Internet users are:¹

- Sending e-mail
- Using a search engine
- Reading news online
- Researching a product online
- Sending or receiving photos
- Purchasing a product online

¹ Connected Tennessee, *Find Your County*
www.connectedtennessee.org/ecommunity_strategies/find_your_county, accessed on September 4, 2009.

Why Carter County residents with dial-up do not subscribe to broadband:



Many organizations from each of the nine sectors within Carter County have websites. Some include:

- Carter County, www.cartercountyttn.com
- Carter County Chamber of Commerce, www.elizabethtonchamber.com
- Carter County Tourism, www.tourelizabethton.com
- Carter County School District, <http://carter.k12.tn.us>
- Elizabethton/Carter County Technology Consortium, www.ecctc.com
- Elizabethton Carter County Public Library, www.eccpl.org

Carter County has only started to realize the value of technology and the Internet as a method of marketing the community and its various sectors. One method is sharing links with other organizations and websites. Through the sharing of links, search result rankings rise and the community's name becomes more recognizable. As a point of reference, www.tnecd.gov is referenced on 3,700 websites and www.tnvacation.com is referenced on 341,000 websites. Below is a listing of key Carter County websites including the number of websites linked as reported on AltaVista, www.altavista.com:

- www.cartercountyttn.com – 200 sites
- www.elizabethtonchamber.com – 40 sites
- www.tourelizabethton.com – 453 sites
- <http://carter.k12.tn.us> – 52 sites
- www.ecctc.com – 3 sites
- www.eccpl.org – 98 sites

Carter County has also only begun to consider search ratings as a result of their Internet marketing. It is optimal for the county website to return on the first page (top 10) of search results when general searches are conducted. The list below shows general terms being used to search and where Carter County local



websites appear on the rankings. If the website did not appear in the top 10, then it only says “Not in Top 10.” As an example, when searching for “Tennessee Economic Development,” the State of Tennessee appears in the results 1st, 2nd, 6th and 8th. Using Google searches (www.google.com), the rankings for Carter County are:

- Search results for “Carter County” – 3rd, 5th and 9th results
- Search results for “Carter County Government” – 2nd and 7th result
- Search results for “Carter County Chamber” – 1st, 2nd, 3rd and 5th results
- Search results for “Carter County Business” – Not in Top 10
- Search results for “Carter County Economic Development” – 1st, 2nd, 6th and 10th results
- Search results for “Carter County Tourism” – 1st, 2nd, 6th, 7th and 8th results

A complete listing can be found at Carter County's profile on Connected Tennessee's website at www.connectedtennessee.org/ecomunity_strategies/find_your_county/carter.

The Carter County Government is one of 69 counties with a website, located at www.cartercountyttn.com. Of the 16 counties with a population of 50,000 to 100,000, 14 have websites. Based on Connected Tennessee's *2008 Local Government Website Study*, Carter County's website ranks 8th among counties in their population category, while ranking 26th overall. Based on the study, Carter County scored 50 points as follows:

- General Criteria – 4
- Information Dissemination – 28
- Interactive Functions – 14
- Transactional Functions – 3
- Transformational Functions – 1

Technology service providers in Carter County are vital to the growth and expansion of technology programs and applications in the community. Technology providers can offer website design, computer sales and repair, network integration, software programming and much more. In addition to the many technology providers in the region, providers based in Carter County include:

- Crashbox Creative, LLC, www.crashboxcreative.com
- Port 80 Designs, www.port80designs.com
- Star Technology Group, www.startechnologygroup.com
- Wal-Mart, www.walmart.com

A complete directory of technology providers by type in Carter County is provided later in the report.



Where Do We Need To Be?

Through the assessment and vision process, the Carter County eCommunity Leadership Team identified the current status of each of the nine sectors evaluated and outlined their vision for each. The assessment and vision is summarized in the following table and explored in more detail in the sector reports that follow.

Carter County Assessment Overview						
Sector	Networked Places		Applications & Services		Leadership	
	Current	Goal	Current	Goal	Current	Goal
Agriculture	2	3	2	3	1	2
Business & Industry	2	3	2	3	2	3
Community-Based Organizations	3	5	3	5	4	5
Government	3	4+	2+	5	2+	4
Healthcare	4	5	3	4	4	5
Higher Education	4	5	3	4	2	3
K-12 Education	3	4+	3	4	4	5
Libraries	3	4	3	4	4	5
Tourism, Recreation & Parks	3	5	4	5	4	5

How Do We Get There?

Priority projects as defined by the Carter County eCommunity Leadership Team are listed below with details describing each plan. Other project ideas can be found in each sector-specific report.

Priority Project 1 – Enhanced Broadband Awareness & Access

Vision


The vision of Carter County is to cultivate a community where broadband access, adoption and incorporation is highly prioritized and viewed as important to personal, professional and community life.

Mission

The mission of the Carter County eCommunity Leadership Team will be to realize heightened awareness and greater access to broadband service with increased adoption rates throughout the community.

Goals

1. Identify areas of Carter County currently lacking sufficient access to high-speed Internet.
2. Generate demand data demonstrating service gaps.

- 
3. Catalogue providers positioned for build-out in target areas and match with demand data.
 4. Implement community broadband/technology awareness campaign.

Objectives

1. Identify and prioritize specific areas of Carter County currently with no broadband availability.
2. Identify and prioritize specific areas of Carter County currently underserved by broadband availability.
3. Produce useful broadband inquiries across Carter County that will demonstrate existing demand data.
4. Identify service providers/platforms that are best suited for targeted areas.
5. Form meaningful partnerships with appropriate providers and engage in service build-out partnerships.
6. Develop a working group to devise a community broadband/technology awareness program.

Actions

1. Prioritize specific areas of Carter County most in need of broadband expansion by April 30, 2010
2. Generate broadband inquiries from across Carter County in either hard copy format or through Connected Tennessee's interactive web form available at: www.connectedtn.org/forms/broadband_inquiries.php by partnering with (a) water and electric utilities to include broadband inquiry forms in utility bills, (b) public libraries to target library patrons lacking broadband availability and (c) Carter County Public Schools by having teachers and administrators generate demand data from students without home broadband service by June 1, 2010.
3. Approach appropriate providers and present demand data, generated through above action, to discuss possibilities of future build out in priority demand areas by July 31, 2010.
4. Devise and deploy community awareness campaign emphasizing broadband/technology integration by November 30, 2010.

Implementation Team

Carter County eCommunity Leadership Team.

Priority Project 2 – Enhanced Access to Computing Facilities & Technology Training

Vision

The vision of Carter County is to promote technology integration by removing barriers between citizens and available technology training opportunities.



Mission

The Carter County eCommunity Leadership Team will ensure an advanced familiarity level with and adoption of technology throughout the community by removing existing barriers to the availability of technology training.

Goals

1. List public access computing facilities.
2. List public access technology training classes/resources.
3. Coordinate availability of comprehensive technology training opportunities.
4. Plan and undertake marketing campaign to promote public access technology centers and training opportunities.

Objectives

1. Identify and catalogue all public access computing facilities in Carter County.
2. Identify and list all resources in Carter County that promote and/or deliver technology training/education.
3. Identify any service gaps currently present in technology training/education availability in Carter County.
4. Identify the most effective means for disseminating information on availability of technology training and educational opportunities.
5. Develop a marketing campaign to educate general public on available computing centers and training opportunities.

Actions

1. Identify all public access computing centers by May 31, 2010.
2. Identify all organizations and related courses within Carter County currently offering community education, training and awareness by May 31, 2010.
3. Enumerate any service gaps in technology training/education currently available in Carter County by July 31, 2010.
4. Develop a comprehensive technology training resource plan by August 31, 2010.
5. Create and initiate marketing campaign promoting available facilities and education resources in community by October 31, 2010.

Implementation Team

Carter County eCommunity Leadership Team.



Priority Project 3 – Downtown Wireless Internet Access

Vision

The vision of Carter County and Elizabethton is to create a downtown area where individuals will be able to connect with the world for personal, business and recreational purposes.

Mission

The mission of the Carter County eCommunity Leadership Team will be to enable visitors and residents alike to be able to fully access today's globally connected world in the Elizabethton downtown business district.

Goals

1. Increase citizen usage of computers and the Internet.
2. Enhance the downtown business and civic environment.
3. Increase the number and length of stay of tourists and recreational visitors.
4. Establish a point of pride for the community as a marketable tourism asset.

Objectives

1. Identify desired area to be covered.
2. Assess current state of downtown Wi-Fi availability.
3. Determine system design, needs and requirements.
4. Engage local business owners to develop Downtown Wi-Fi Partnership.

Actions

1. Outline and map proposed service area by April 30, 2010.
2. Conduct inventory of Wi-Fi currently available in the downtown area by May 31, 2010.
3. Determine which services are free and which are fee-for-services by June 30, 2010.
4. Catalogue collective costs (to providers and customers) of public access Wi-Fi services currently available by July 31, 2010.
5. Assess estimated bandwidth needed to service desired area by September 30, 2010.
6. Determine systems configuration needed to deliver service by September 30, 2010.
7. Hold a community meeting for local businesses to share findings and solicit feedback by October 2010.
8. Develop a business model for system design, implementation, quality assurance and sustainability by November 30, 2010.
9. Present to downtown business community for approval/buy-in by December 31, 2010.
10. Form partnerships (if needed) and implement by March 31, 2011.
11. Educate community and promote to visitors - Ongoing.



Implementation Team

Business leaders, local government leaders and Chamber and tourism officials.

Priority Projects by Sector

Agriculture

- Increase awareness among growers/producers about benefits of broadband technology.
- Provide greater access to technology education and training tools.
- Emphasize and assist in website development.
- Create a heightened understanding of marketing ideas and ways to promote their business.

Business & Industry

- Cultivate increased opportunities for training and education among the business community.
- Identify resources for technology enhancements/upgrades.
- Create Wi-Fi availability through the downtown business district.
- Conduct county-wide fiber optic inventory.

Community-Based Organizations

- Purchase new computers.
- Provide training to office staff.
- Encourage broadband providers to offer their services to volunteer organizations at a customized rate.

Government

- Enhance available technology within local government operations.
- Implement a citywide Wi-Fi system to assist with fire and emergency management.
- Improve the ability to conduct business with government over the Internet, e.g. permitting, purchasing and payments, by developing more e-government applications that provide value to the consumer.
- Develop more thorough employee technology training programs.

Healthcare

- Educate area physician offices on the importance and convenience of switching to electronic documentation.

Higher Education

- Continue faculty workshops and online instruction.
- Expand wireless options across campus.



K-12 Education

- Apply for distance learning grants.

Libraries

- Explore possibilities for broadband access separate from shared connection via WAN.

Tourism, Recreation & Parks

- Educate employees about what is available to them when the proper tools are utilized.



Connected Carter County

45H Agriculture Sector

Why Is This Important?

Too often in the past, the agricultural community saw little need for broadband technology in the day-to-day activities of maintaining farms and livestock. However, broadband technology allows for growing innovation in agriculture, simplifying and mainstreaming important daily tasks and developing marketing and sales. Farmers are beginning to see and understand the value of broadband and are demanding access for their farms. With high-speed Internet, farmers can remain up-to-date with everything from the weather to the conditions of chicken coops equipped with temperature-sensitive monitors. Livestock farmers can access market prices and gain access to the latest in livestock management techniques.

Farmers can advertise and even sell goods on the Internet, generating customers from all over the world. The Internet can also help Tennessee farmers diversify their operations and develop cutting edge revenue streams, thus alleviating losses due to political or environmental change. Internet resources can give Tennessee farmers an edge on production and results. The possibilities are virtually endless. The marriage of agriculture and high-speed Internet can produce abundant success for farmers across Tennessee by creating a wealth of opportunities.

In Carter County, there are 573 farms averaging 65 acres per farm.² This is smaller than the state average of 133 acres. The average estimated market value of the land and buildings per farm in Carter County is \$236,611, while the state average is higher at \$325,783. In Carter County, 301 of the farmers list farming as their primary occupation while 272 list farming as their secondary occupation. The leading agriculture products in Carter County are:

- Tobacco
- Corn
- Forage

Where Are We Today?

In the agricultural community of Carter County, many things are needed to increase technology adoption

² USDA National Agricultural Statistics Service, *2002 Census of Agriculture Quick Stats*
www.nass.usda.gov/Census/Create_Census_US_CNTY.jsp, 2002.

Carter County Agriculture

- Carter County Extension, <http://Carter.tennessee.edu>
- Center for Profitable Agriculture, <http://cpa.utk.edu>
- eXtension, www.extension.org
- Horticultural Business Information Network, <http://hbin.tamu.edu>
- Pick Tennessee Products, www.picktnproducts.org
- Tennessee Agricultural Extension Service, www.utextension.utk.edu
- Tennessee Farm Bureau, www.tnfarmbureau.org
- Tennessee Department of Agriculture, www.tennessee.gov/agriculture
- BurnSafeTn, www.burnsafetn.org



and usage. Although many individuals understand the value of technology, some are still reluctant to change. Education will allow the agricultural community to understand the benefits of technology and should alleviate much of the fear that prevents individuals from using it.

In Carter County, the agriculture sector is served by Carter County's University of Tennessee Extension office, located on the web at <http://carter.tennessee.edu>. The Extension offers a wide variety of services and provides a great deal of information. Understanding the value of technology, the Extension uses a high-speed Internet connection in their office. Online applications and programs minimize the amount of time and effort it takes the agriculture sector to gain access to information and reports needed to sustain a more efficient and effective operation.

From the homepage of the Department of Agriculture, www.tennessee.gov/agriculture, a farmer can find information regarding regulatory issues, market development and grants. Visitors can access information about a number of programs on the website including animal health, pesticides, disaster animal response and the Boll Weevil Program. Other items available online through the Tennessee Department of Agriculture include news information, statistics, student resources and annual reports.

The Pick Tennessee Products website, www.picktnproducts.org, helps individuals find information for agriculture-related tourism activities and facilities, farm activities and events, animals and livestock, fresh and manufactured foods, flowers, trees, plants, tobacco and much more. Along with Pick Tennessee Products, the Tennessee Department of Agriculture's Market Development Division (MDD) is the agricultural industry development and marketing arm. It is the Department of Agriculture's primary means to work with farmers, agribusinesses, commodity organizations and consumers. The current needs and priorities of clients served directly influences tasks and programs.

Broadband and technology are currently underutilized in the agriculture sector of Carter County. Many farmers and growers lack the awareness and understanding of how available technology can save time, make operations more efficient and help promote their products. Heightened awareness, increased opportunities for training and education and a greater capacity for using the Internet to market their products would greatly benefit the agriculture sector of Carter County as it moves into the 21st century.



Agriculture Sector Assessment Overview			
Category	Current Assessment	Future Vision	Additional Comments
Networked Places	2	3	
Applications & Services	2	3	
Leadership	1	2	


The Carter County eCommunity Leadership Team found that the agriculture sector is hesitant to become more technologically invested. Producers are not developing technology plans and do not often feel they have time for technology maintenance, updates and new technology. Benefits would result from enhancements to the Applications & Services available, as well as to education programs for farmers in the area.

- **Networked Places** – In the category of Networked Places, Carter County’s agriculture sector is currently at stage 2 on a 0 to 5 scale. Some growers, suppliers and processors have always-on connections to the Internet at their desks.
- **Applications & Services** – In the category of technology Applications & Services, the agriculture sector is currently at stage 2 on a 0 to 5 scale. Some growers, suppliers and processors have an informational website. Some growers, suppliers and processors transmit or receive some orders electronically.
- **Leadership** – In terms of technology Leadership within the agricultural community, Carter County is currently at stage 1 on a 0 to 5 scale. The Internet is seen as a possible enhancement to the way daily business is conducted.

Where Do We Need To Be?

The Carter County eCommunity Leadership Team sees great potential for the use of technology in the agriculture sector but understands the industry is limited in its resources and ability to implement changes within a brief period. They have set goals to improve Networked Places and Applications & Services to a stage 3, while also improving Leadership to a 2. The team’s vision includes:

- Most growers, suppliers and processors have always-on connections to the Internet.
- Some mobile workers have laptop computers and can access the network remotely.
- Affordable videoconferencing facilities are available in the community.
- Most growers, suppliers and processors have informational websites.
- Some websites can accept credit card purchases.
- Some growers, suppliers and processors participate in the electronic supply chain.

- 
- The Internet is seen as essential to business operations.
 - Employees are trained on basic applications.

How Do We Get There?

Priority Projects

- Increase awareness among growers/producers about benefits of broadband technology.
- Provide greater access to technology education and training tools.
- Emphasize and assist in website development.
- Create a heightened understanding of marketing ideas and ways to promote their business.

Other Potential Projects

- Evaluate the feasibility of creating a local agricultural portal to connect the agriculture community for advanced information sharing, news and market distribution, etc.
- Stay informed about new technology in the farming industry, from equipment to chemicals, using the Internet.
- Emphasize technology education to producers.
- Promote e-commerce for those agriculture enterprises that already use e-mail and websites.
- Increase Internet access awareness among the agriculture community.
- Create a listing of providers in the community to allow the agriculture sector to better understand what service is available and from whom.



Connected Carter County

46H Business & Industry Sector

Why Is This Important?

Today, a number of factors are forcing businesses to change time-honored models of operation, including global competition, partnering/outsourcing and demand for more personalized services. Each of these trends can save businesses time and money, but they require a sound technological infrastructure. The good news is that while these trends are becoming more prevalent, the costs of technology are falling. Businesses cannot be sheltered from competitors. The reality is that Carter County businesses must adapt to the changing world in which they operate. Businesses have to learn the tools of the networked economy and innovate in order to survive.

The business & industry sector often experiences the most direct benefit of high-speed Internet with increased sales, profit and growth. However, many businesses and industries are utilizing high-speed Internet to simplify processes, increase efficiency and develop new marketing methods. While a company's employees benefit immediately from broadband implementation, the consumer also ultimately sees lower prices and better quality.


Increased benefits from the implementation of high-speed Internet are not just for large corporations. For smaller businesses, technology creates an even playing field with much larger companies. E-commerce (the buying and selling of goods over the Internet) allows small or even home-based businesses to operate and sell their goods on a national and sometimes international scale. Where small businesses were once limited to only local customers they could attract through local advertising and word of mouth, the Internet now allows them to attract customers across the globe.

Carter County Business & Industry

- Elizabethton/Carter County Chamber of Commerce, www.elizabethtonchamber.com
- Tennessee Economic & Community Development, www.tnecd.gov
- Tennessee Department of Commerce and Insurance, www.tennessee.gov/commerce
- Tennessee Department of Revenue, www.tennessee.gov/revenue
- Tennessee Chamber of Commerce & Industry, www.tnchamber.org

Utilizing broadband and technology, businesses with multiple locations can save money by implementing Voice over Internet Protocol (VoIP). VoIP allows businesses to call between those locations with little or no costs. It allows users to travel anywhere in the world and still make and receive phone calls. Additionally, VoIP allows for collaboration not available when using traditional telephone methods.

Technology has allowed larger businesses to maximize efficiency in order to better serve customers. E-mail, intranets, paperless operations and automated logistics processes are just a few examples of how the Internet is allowing large companies to work with much greater efficiency and at lower costs. These



practices allow those businesses to expand into other markets and grow their companies, and even pass the savings on to their customers.

Carter County has 1,512 business establishments employing 14,388 employees. Most businesses in Carter County have 1-4 employees while only 32 have over 100 employees. The sectors with the most employees by Major SIC are:³

- Services (SIC 70-89) – 4,926 employees
- Retail Trade (SIC 52-59) – 3,110 employees
- Manufacturing (SIC 20-39) – 1,788 employees
- Public Administration (SIC 90-98) – 1,555 employees

The largest employers by type are:³

- Government (10.81%)
- Hospitals (8.99%)
- Heavy Construction (7.99%)
- Primary and Secondary Education (7.16%)

Consumers in Carter County spend their income in a variety ways. The leading expenditures in Carter County by category are listed below (per household):³

- Transportation, \$7,710
- Shelter, \$7,357
- Food and Beverages, \$6,048
- Utilities, \$2,841
- Healthcare, \$2,519
- Entertainment, \$2,107

Where Are We Today?

Carter County residents utilize the Internet to conduct business through a variety of methods but at a rate less than the state average. Uses of the Internet by Carter County residents are as follows:

- 40% of residents research products online (53% statewide)
- 31% of residents purchase products online (49% statewide)
- 24% of residents use online banking (38% statewide)
- 14% of residents search for jobs online (22% statewide)
- 10% of residents buy, sell or trade investments online (13% statewide)

³ Tennessee Department of Economic & Community Development, *Tennessee Prospector: County Profiles* www.tennesseeprospector.com, accessed on February 2, 2010.



Within the business & industry sector, technology and broadband are increasingly being viewed as vital to the economy and Carter County's growing success. Many of the areas of higher business concentration are currently served with broadband availability, but some portions of the county with reasonably high population density still lack access. This serves as a barrier for economic growth in the community as it inhibits home-based business growth, telecommuting opportunities and tourism/recreation efforts, particularly in the unserved areas around the lake. However, local officials and business leaders alike are interested in working with available providers to further increase broadband access.

The Elizabethton/Carter County Chamber of Commerce, www.elizabethtonchamber.com, is designed to meet community/county needs. Among other things, it is a civic clearinghouse, a public relations counselor, a legislative representative, an information bureau and a research and promotion medium. It is often the first place tourists, business people and those seeking residential/business relocation turn to for information about the county. The Chamber website features demographic information about the county, links to local governmental sites and a community events calendar, among other things.

Media services in Carter County are beginning to utilize the Internet and broadband services to expand their offerings to readers, listeners and viewers. Carter County media services with online presences currently include:

- Elizabethton Star, www.starhq.com
- WBEJ 1240 AM, www.wbej.com
- Johnson City Press, www.johnsoncitypress.com
- WJHL-TV, www.tricitie.com

Carter County stands to benefit greatly from advances in available technology infrastructure, awareness and incorporation. While access remains an issue in some areas, the greatest needs among business & industry in Carter County are an increased awareness of the opportunities created through technology adoption and increased education and training resources.

Business & Industry Sector Assessment Overview			
Category	Current Assessment	Future Vision	Additional Comments
Networked Places	2	3	
Applications & Services	2	3	
Leadership	2	3	



The Carter County eCommunity Leadership Team found that the business & industry sector is limited by the current infrastructure. The majority of the sector is not utilizing programs and applications because of knowledge, affordability and training class limitations. Benefits would be gained from training availability as well as enhancements to the current infrastructure.

- **Networked Places** – In the category of Networked Places, Carter County’s business & industry sector is currently at stage 2 on a 0 to 5 scale. Some office employees have always-on connections to the Internet at their desks.
- **Applications & Services** – In the category of technology Applications & Services, the business & industry sector is currently at stage 2 on a 0 to 5 scale. Some businesses have an informational website. Some businesses transmit or receive some orders electronically.
- **Leadership** – In terms of technology Leadership within the business and industry community, Carter County is currently at stage 2 on a 0 to 5 scale. Some view the Internet as essential to business operations. Employees are trained on basic applications.

Where Do We Need To Be?

While the Carter County eCommunity Leadership Team found that business and industry’s current use of technology is somewhat limited, the team has an aggressive vision for how the sector should be using technology in two years. They have set goals to improve all three categories to a 3. The team’s vision includes:

- Most office employees have always-on connections to the Internet at their desks.
- Some mobile workers have laptop computers and can access the office network remotely.
- Affordable videoconferencing facilities are available in the community.
- Most businesses have an informational website.
- Some retail websites can accept credit card purchases.
- Some businesses participate in the electronic supply chain.
- Some businesses permit some employees periodically to telework.
- Some businesses encourage employees to take work-related classes offline.
- Employee training on new technology is a priority.

How Do We Get There?

Priority Projects

- Cultivate increased opportunities for training and education among the business community.
- Identify resources for technology enhancements/upgrades.
- Create Wi-Fi availability through the downtown business district.
- Conduct county-wide fiber optic inventory.



Other Potential Projects

- Promote Voice over Internet Protocol (VoIP) and encourage its use among businesses as a way to save money.
- Create a high-tech center to display technology infrastructure and technology tools for employees.
- Develop a directory for local information technology services in the county including business-to-business opportunities.
- Create a media campaign to help consumers and businesses understand the benefits of high-speed services and the Internet.





Connected Carter County

47HCommunity-Based Organizations Sector

Why Is This Important?

Non-profit agencies provide a wide variety of services to citizens including health services, religious services, community sports and athletic facilities and public entertainment. Like any organization, community-based organizations need technology to manage operations, apply for grants, reduce costs, improve client services and better serve the community. Unfortunately, their budgets are typically limited and they often depend on outdated technologies and donated services. As a result, community-based organizations must be creative in order to serve their constituents in the best manner possible.

Fortunately, there is no shortage of creativity among community-based organizations and many are using innovative solutions to offer important local services. As with other sectors, the Internet is an enabling factor for these creative solutions.

When it comes to community-based organizations, the best technology practice is for the organization to present a clear vision of the organization's mission, goals and activities through a well developed website. Applications like online donations, volunteer forms and continuing education allow the visitor to get involved without ever leaving home. Features such as photo galleries, virtual tours and streaming videos allow the visitor to become engaged in the online experience and invested in the organization with the click of a mouse.

Carter County Community-Based Organizations

- Boys and Girls Clubs of America, www.bgca.org
- United Way, www.liveunited.org
- American Legion, www.legion.org
- Habitat for Humanity, www.habitat.org
- Lion's Club International, www.lionsclub.org
- Woodmen of the World, www.woodmen.org
- Tennessee Farm Bureau, www.tnfarmbureau.org

Where Are We Today?

There are approximately 131 community-based organizations in Carter County which include religious, educational, charitable, scientific and literary organizations.⁴ The following are some examples:

- Carter County Genealogy, www.tngennet.org/carter
- Carter County Technology Consortium, www.ecctc.com
- Johnson City Development Authority, www.jcdevelopment.org

Community-based organizations are committed to reaching out to citizens around the area to provide arts, services and even entertainment. These organizations use technology to simplify activities, reach more citizens and better serve the community.

⁴ Melissa Data Corp. www.melissadata.com, *Non-Profit Database* (CD-ROM), 2007.



Some community-based organizations see the Internet as a way of increasing giving and promotion. Since community-based organizations are charged with being the best possible stewards of donations, technology is viewed as a great way to save money. However, access to current technology and expertise in using that technology are ever-present challenges confronted by community-based organizations. Carter County is no exception. Resources for technology upgrades, access to training for staff/volunteers and affordability of broadband access are continual barriers. Community-based organizations in Carter County would be better able to serve the public with enhanced technology assets, more readily available training and education opportunities for staff members and the opportunity to acquire broadband access at customized rates.

Community-Based Organizations Sector Assessment Overview			
Category	Current Assessment	Future Vision	Additional Comments
Networked Places	3	5	Currently own two computers with dial-up access.
Applications & Services	3	5	Need software upgrades.
Leadership	4	5	Need additional technology training.

The Carter County eCommunity Leadership Team found that the community-based organizations sector is limited by funding and the current infrastructure available. Enhancements to the infrastructure would result in benefits for the sector and its stakeholders.

- **Networked Places** – In the category of Networked Places, Carter County’s community-based organizations sector is currently at stage 3 on a 0 to 5 scale. Most organizations with at least five paid staff have at least one computer for every three employees. Many organizations have e-mail.
- **Applications & Services** – In the category of technology Applications & Services, the community-based organizations sector is currently at stage 3 on a 0 to 5 scale. Many organizations have an informational website. Many local chapters are able to share data electronically with the national parent organization. Some organizations accept online donations.
- **Leadership** – In terms of technology Leadership within community-based organizations in the community, Carter County is currently at stage 4 on a 0 to 5 scale. Some organization leaders are actively involved in community economic development issues and there are visible leaders taking a significant role in economic development. Many organizations plan to use telecommunications services and technologies within the next year. Most organizations provide technology training to their staff at least once a year.



Where Do We Need To Be?

The Carter County eCommunity Leadership Team sees great potential for the use of technology in the community-based organization sector but understands the sector is limited in its resources and ability to implement changes within a brief period. They have set goals to improve all three categories to a 5. The team's vision includes:

- Many organizations use VoIP.
- Every organization is connected to the Internet.
- Every computer can access the Internet via a local area network.
- Many computers have video cameras.
- Most organizations use affordable video conferencing.
- Most organizations accept online donations.
- Some organizations use an interactive service to further engage the community and make their services more broadly available.
- Electronic data sharing is common practice between organizations locally and with national parent organizations.
- Organizations collaborate with one another regularly to share resources and provide up-to-date training to their employees and volunteers.
- Organizations have a defined role in support local economic development initiatives.
- Most organizations plan to use telecommunications within the next year.

How Do We Get There?

Priority Projects

- Purchase new computers.
- Provide training to office staff.
- Encourage broadband providers to offer their services to volunteer organizations at a customized rate.

Other Potential Projects

- Offer training programs and workshops at night and on weekends to make them more accessible to community-based organizations.
- Develop a networking event to share information, ideas and innovations in technology deployment.
- Facilitate collaboration and cooperation among community-based organizations to help them share the costs of technology and expertise.





Connected Carter County 48H Government Sector



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Why Is This Important?

Government serves citizens in numerous ways, from offering services like vehicle registration to providing information such as election results. While it is common for people to feel disengaged from the everyday actions of state and local government, technology has allowed governments to begin closing that gap. On the state level, Tennessee has developed www.Tennessee.gov, a comprehensive website that provides government services and information to all citizens. On this site, residents can purchase and update hunting licenses, car dealers can access title searches on cars and citizens can monitor the progress of legislation when the General Assembly is in session. By bringing the services of the state government to the convenience of residents' homes, the Tennessee.gov site provides participants a greater sense of relevance in the actions of state government.

Local governments have also seen the importance of an online presence. They provide communities with many services that offer a great deal of local information and encourage public involvement and awareness. With a web presence, local governments can distribute information to more citizens, provide increased opportunities for interaction with the agencies that affect them and make transactions that previously required a drive to the courthouse accessible online.

Carter County Government

- Carter County, www.cartercountyttn.com
- City of Elizabethton, www.elizabethton.org
- Elizabethton Electric, www.eesonline.org
- State of Tennessee, www.tennessee.gov
- Tennessee General Assembly, www.legislature.state.tn.us

According to the U.S. Census Bureau, Carter County had a population of 56,742 in 2000.⁵ City and town government entities in Carter County as defined by The University of Tennessee County Technical Assistance Service (www.ctas.utk.edu/ipf/CTAU-7KER93.PDF) are as follows:⁵


- Elizabethton, pop. 13,372
- Johnson City (which straddles the Carter, Sullivan and Washington County lines), pop. 59,866
- Watauga, pop. 403

Where Are We Today?

Carter County residents utilize the Internet to access government services at a rate that is less than the state average. Uses of the Internet by Carter County residents are as follows:¹

- 17% of residents perform online transactions with government (33% statewide)
- 25% of residents search for government information online (29% statewide)

⁵ US Census Bureau, *State & County QuickFacts* <http://quickfacts.census.gov>, accessed on September 4, 2009.

- 
- 12% of residents interact with state government online (15% statewide)
 - 8% of residents interact with local government online (14% statewide)

The Carter County Government website serves citizens in numerous ways and is available at www.cartercountyttn.com. This site provides information about the community and the area's natural assets as well as valuable links to other local governments, area schools, tourism and media outlets.

The Carter County Government is one of 69 counties with a website, located at www.cartercountyttn.com. Of the 16 counties with a population of 50,000 to 100,000, 14 have websites. Based on Connected Tennessee's *2008 Local Government Website Study*, Carter County's website ranks 8th among counties in their population category, while ranking 26th overall. Based on the study, Carter County scored 50 points. The report card for the Carter County website can be found in the appendix of this report.

The city of Elizabethton supports a professional website available at www.elizabethton.org. The site contains information about the city's location, history, laws and contact information for local officials. At this time, no downloadable forms or online registration/payment systems are available.

Johnson City, which spills into Carter County, is available online at www.johnsoncitytn.org. This site contains information for city officials, codes, events and job openings. Some online documents and interactive services are currently available, such as the ability to pay utility bills and taxes online.

The State of Tennessee has taken a leadership role in the development of online government services through its portal at www.tennessee.gov. Many of the services available are targeted at local residents. Visiting Tennessee's website allows users to access state laws and regulations, locate the nearest hospital, renew driver's licenses, perform TBI background checks, apply for unemployment services and access hundreds of other services. Information about business, education, travel, employment and government is also available to residents.

All entities within the government sector understand that technology is important to conduct the government's business more effectively. Broadband is viewed as a way to better communicate with the residents of the cities and county. With the use of broadband, the government sector wants to utilize applications that take advantage of that infrastructure. The opportunity exists for enhanced interactive services on local government websites that will deliver greater convenience to citizens. Additionally, technology upgrades within local governments would enhance internal and external communications and improve efficiency across all governments and departments.

Other government entities in Carter County with websites include:

- Elizabethton Electric System, www.eesonline.org
- Elizabethton Municipal Airport, www.elizabethtonairport.com



- Elizabethton Parks and Recreation, <http://elizabethtonparksandrec.tripod.com/>
- Elizabethton Police Department, www.elizabethtonpolice.com
- Elizabethton/Carter County Public Library, www.eccpl.org
- Keep Carter County Beautiful, <http://ccb.elizabethtonchamber.com>


Government Sector Assessment Overview			
Category	Current Assessment	Future Vision	Additional Comments
Networked Places	3	4+	Would like to monitor river levels via video.
Applications & Services	2+	5	Would like to have a Elizabethton/ Carter County EMA website.
Leadership	2+	4	Have elected officials more included with technology within the County.

The Carter County eCommunity Leadership Team found that the government sector is utilizing the infrastructure available to its available extent. Further benefits would be gained from enhancements to the infrastructure and Applications & Services.

- **Networked Places** – In the category of Networked Places, Carter County’s government sector is currently at stage 3 on a 0 to 5 scale. Many employees have e-mail accounts. Some field workers are collecting data on laptop computers or palmtops. Webcams are starting to be deployed.
- **Applications & Services** – In the category of technology Applications & Services, the government sector is currently at stage 2 on a 0 to 5 scale. Most public agency websites offer informational features such as a community calendar, staff directory and downloadable forms. Customers rely mostly on postal mail and telephone to conduct business.
- **Leadership** – In terms of technology Leadership within the government sector, Carter County is currently at stage 2 on a 0 to 5 scale. Public agencies do not have a strategy for how best to use e-government. Minimal telecommunications planning has occurred. Elected officials are not involved in telecommunications issues.

Where Do We Need To Be?

The Carter County eCommunity Leadership Team has developed goals to provide a framework for robust e-government functions in the next two years. They have set goals to improve Networked Places as well as Leadership to at least a stage 4 and Applications & Services to a 5. The team’s vision includes:

- 
- Some field workers use wireless networks to upload and download data in the field.
 - Some employees use desktop teleconferencing.
 - Sensors and webcams monitor locations, such as rivers that are important to public safety.
 - Interactive applications, such as customer relationship management, online GIS and videostreaming are in regular use.
 - Employees manage benefits programs on an intranet.
 - Emergency response teams can reliably communicate across jurisdictions.
 - Council meetings are indexed and available for searching and retrieval online.
 - Some agencies have a formal policy that allows some employees to work from home at least one day a week.
 - Rights-of-way and tower sitting policies are in place.
 - Elected officials understand the importance of the network for economic development and quality of life.

How Do We Get There?

Priority Projects

- Enhance available technology within local government operations.
- Implement a citywide Wi-Fi system to assist with fire and emergency management.
- Improve the ability to conduct business with government over the Internet, e.g. permitting, purchasing and payments, by developing more e-government applications that provide value to the consumer.
- Develop more thorough employee technology training programs.

Other Potential Projects

- Create coordinated and interactive GIS activities (city, county, PVA, utilities, planning commission, etc.).
- Upgrade e-mail connections using fiber optic connections for large file transfers.
- Allow for donation of appropriate surplus computers to non-governmental organizations and individuals.
- Allow for closest-unit dispatching resulting in more lives saved.
- Make all applications and documents downloadable from the Internet.
- Seek grant funding to improve the technology infrastructure and information technology support functions.
- Encourage inter-governmental sharing of software, information and e-commerce concepts.
- Initiate and complete a new information technology strategic plan to improve all automated systems, re-engineer manual procedures and evaluate how departments collaborate.
- Ensure that government is utilizing “best practices” in data storage and security.



Connected Carter County 49HHealthcare Sector



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Why Is This Important?

The healthcare industry has unique challenges. It inherently generates large amounts of data that must be safe-guarded to comply with individual privacy regulations. For companies charged with managing and working with this information, high-speed Internet access and technology innovations are crucial. On a daily basis, doctors must keep up with the latest research; patient records must be easily accessible and accurate; and images, test results and prescriptions have to be delivered promptly, without errors, to practitioners, pharmacies and insurance providers. In healthcare, errors and delays are not only costly, but also dangerous.

Many providers are converting to electronic medical records which can be easily updated and shared on secure, internal networks. Network-based technologies like videoconferencing and digital stethoscopes allow specialists to consult with rural patients, reducing travel time and hazards. The ability to reach rural patients through technology has allowed many people to seek treatment that otherwise might not. Bringing the best of healthcare to every Tennessee citizen is a worthy goal.

Carter County Healthcare

- Johnson City Specialty Hospital, www.msha.com
- Tennessee State Department of Health, <http://health.state.tn.us>
- Tennessee Restaurant Inspection Scores, <http://tn.state.gegov.com/tennessee>
- Tennessee eHealth Advisory Council, www.tn.gov/ehealth

Because of the nature of its activities, the healthcare industry has found the perfect partner in high-speed Internet technology. The convenience of the Internet has simplified information transfers and improved medical equipment while maintaining the integrity of confidential patient information.

According to the 2009 County Profiles Health Rankings of the Tennessee Institute of Public Health, Carter County's strengths include low divorce rate, low number of teen pregnancies and cases of sexually transmitted diseases.⁶ Some of the challenges include a high number of pre-1950 houses, high number of people who have not received diabetic HbA1c testing and mothers smoking during pregnancy.

Where Are We Today?

In Carter County, residents use the Internet less than the state average within the healthcare sector. Below is a listing of the various uses of the Internet with the percentage of residents using each application:

⁶ Tennessee Institute of Public Health, *County Profile Health Rankings* www.state.tn.us/tiiph/countyprofiles.html, 2009.



- 29% of residents find health or medical information online (45% statewide)
- 10% of residents interact with insurance companies (16% statewide)
- 4% of residents contact healthcare professionals (10% statewide)

Elizabethton’s Sycamore Schoals Hospital is affiliated with the Mountain States Health Alliance and is available online at www.msha.com/facility.cfm?id=54. This site offers hospital and physician information as well as some secure online patient services and information tools. Interactive applications include online payment, an out-of-pocket expense estimator, “Ask-a-Nurse” and an immediate contact request for billing issues. Users are also able to view wellness classes and an events calendar but are unable to register online. Sycamore Schoals currently serves patient needs in a convenient manner through the use of broadband technology and offers a robust site as part of the larger Mountain States Health Alliance network system.

Other healthcare providers such as the Carter County Health Department, <http://health.state.tn.us>, offer a variety of health services, both to keep the community healthy and to restore the health of sick patients. The services available can be viewed on the website along with health-related links such as restaurant inspection scores, community health status report and healthcare professions guide.

Like many communities, the healthcare sector in Carter County offers some of the best examples of how broadband adoption and incorporation can enhance business operations and personal convenience as well as clear examples of the ongoing need for awareness and adoption. While the hospital site offers many convenient online services, other healthcare entities continue to lack an online presence.

Healthcare Sector Assessment Overview			
Category	Current Assessment	Future Vision	Additional Comments
Networked Places	4	5	
Applications & Services	3	4	
Leadership	4	5	

The Carter County eCommunity Leadership Team found that the healthcare sector is utilizing an existing infrastructure for their technology needs. Sycamore Schoals Hospital is using electronic health records providing physicians access to information from home. The hospital also utilizes video conferencing affording physicians opportunities to consult experts or for educational purposes.

- **Networked Places** – In the category of Networked Places, Carter County’s healthcare sector is currently at stage 4 on a 0 to 5 scale. Internet-based videoconferencing is used to consult experts



and for training programs. Some patients are being monitored at home and at work via portable devices with wireless transmitters.

- **Applications & Services** – In the category of technology Applications & Services, the healthcare sector is currently at stage 3 on a 0 to 5 scale. Many providers have informational websites. Many providers store patient records electronically. Telemedicine is being tested. Many offices are electronically transmitting records to insurers for reimbursement.
- **Leadership** – In terms of technology Leadership within the healthcare sector, Carter County is currently at stage 4 on a 0 to 5 scale. Work is underway by some providers to begin online exchanging of test results and other medical records with appropriate parties. Healthcare leaders are talking with the community about enhancing online services and using the network to improve community-wide healthcare.

Where Do We Need To Be?

The Carter County eCommunity Leadership Team sees great potential for the use of technology in the healthcare sector but understands the industry is limited in its resources and ability to implement changes within a brief period. They have set goals to improve Networked Places and Leadership to stage 5 and Applications & Services to stage 4. The team's vision includes:

- Most equipment has been converted to digital.
- Desktop videoconferencing is routine at all hospitals and major clinics.
- Telephone systems have converted to VoIP to save money.
- Remote monitoring of patients with chronic conditions is standard procedure.
- Some providers allow patients to e-mail doctors.
- Most providers store patient records electronically.
- Some lab results and images are received electronically.
- Healthcare leaders see themselves as a key part of the community's overall economic strategy. Leaders are visible and active in strategy development and implementation.
- Executives of the region's hospitals, clinics, insurers, employers and other healthcare providers are meeting regularly to find ways to collaboratively reduce the cost of healthcare without compromising quality of service.

How Do We Get There?

Priority Projects

- Educate area physician offices on the importance and convenience of switching to electronic documentation.

Other Potential Projects



- Establish a regional health information organization.
- Encourage state providers and insurance companies to improve reimbursement for adoption of technology applications.
- Facilitate a statewide initiative for physician awareness and acceptance of technology.
- Request the use of state and community colleges, adult education programs and libraries as locations for safe, vendor-neutral technology education for healthcare providers.
- Seek grants to upgrade technology and train medical staff.
- Educate providers on available technologies and the benefits of technology in medicine.
- Increase use of video and web conferencing tools to educate healthcare professionals through distance learning and to inform the public of current healthcare activities.



Connected Carter County 50H Higher Education Sector

Why Is This Important?

Colleges, universities and community colleges in Tennessee continue to find new ways to use the Internet to improve everyday activities. Websites are an important source of information about the institution, from providing news and information concerning campus activities to offering online registration for classes. Colleges and universities often implement the use of school websites to attract prospective students, remain connected to alumni and allow for online donations.

The most common application of high-speed Internet on college and university campuses, however, is typically not actually used on campus. Most colleges and universities offer online classes and academic programs to better equip students with the opportunity to learn. In 2004, 35,000 students participated in higher education classes through the Regents Online Degree Program, www.rodg.org. By bringing the classroom to the students, participants from every walk of life in the state were able to participate in higher education classes. However, it is necessary to have high-speed Internet to participate successfully in online classes. High-speed Internet is crucial to supporting the capabilities and the possibilities of higher education in Tennessee.

- Carter County
 Higher Education
- Milligan College, www.milligan.edu
 - East Tennessee State University, www.etsu.edu
 - Northeast State Technical Community College, www.nstcc.cc.tn.us
 - University of Tennessee, www.tennessee.edu
 - Board of Regents Online Degree Program, www.rodg.org
 - Tennessee Board of Regents, www.tbr.state.tn.us

Approximately 73.7% of Carter County residents have a high school degree, but only 12.6% have a bachelor's degree or higher. This is less than the state average of 21.7%. In the fall of 2007, 1,661 Carter County residents were enrolled in a Tennessee public institution of higher education. The top three schools chosen by students from Carter County are:⁷

- East Tennessee State University, 51.4%
- Northeast State Technical Community College, 37.0%
- University of Tennessee, 3.9%

Where Are We Today?

Carter County residents use the Internet to assist with education needs at a lesser rate than the state

⁷ Tennessee Higher Education Commission, *2008 Higher Education County Profiles*
<http://tennessee.gov/thec/Legislative/Reports/2008/HigherEducCountyProfiles2008.pdf>, updated February 29, 2008.



average. The following is how Carter County residents who have the Internet at home are using it in education today:¹

- 47% of residents use a search engine (53% statewide average)
- 26% of residents research for schoolwork (32% statewide)
- 13% of residents contact teachers for self or others (23% statewide)
- 8% of residents take online courses (12% statewide)

The Tennessee Board of Regents system, www.rod.org, has a mission to raise the education and skill levels of Tennesseans. For that goal to be realized, all Tennesseans must be provided with the opportunities and assistance that fit their particular situation. Fundamentally, success in raising Tennessee's education and skill levels is all about persuading more people to take advantage of the opportunities available to improve their lives through higher learning. It is a strong belief that average young Tennesseans today are not likely to live a financial life as good as their parents unless they have a higher level of formal education and skill development. Tennessee needs a better educated and more highly skilled workforce to be a player in a much more competitive tomorrow.

East Tennessee State University is a four-year comprehensive university located in Johnson City, TN. With bachelor's, master's, doctoral, pharmacy and medical programs, it is easy to understand why this Board or Regents affiliated institution would be the leading choice for higher education among Carter Countians. Presently, ETSU offers and is in the process of expanding their online and distance learning opportunities. More information may be obtained at www.etsu.edu

Northeast State Technical Community College is a leading choice for beginning higher learning among Carter County students. This two-year general and technical institution offers certifications and associates degrees and is available online at www.nstcc.cc.tn.us. Offering classroom, dual enrollment, online and distance learning courses, Northeast State employs the use of broadband technology well and technology is emphasized to students as essential.

Finally, the University of Tennessee at Knoxville, www.utk.edu, is the state's flag ship, land-grant university and Carnegie One Research institution. Online and distance instruction capabilities are available and technology is well-integrated into most every aspect of student life.



Higher Education Sector Assessment Overview			
Category	Current Assessment	Future Vision	Additional Comments
Networked Places	4	5	Increasing use of wireless gives network for every seat in many places.
Applications & Services	3	4	MBA is online. UG is campus based. Library heavily digitized.
Leadership	2	3	Some areas are broad-based, but many areas are not focused on technology.


The Carter County eCommunity Leadership Team found that the higher education sector is operating technologically at a high capacity. With a strong network and use of applications.

- **Networked Places** – In the category of Networked Places, Carter County’s higher education sector is currently at stage 4 on a 0 to 5 scale. Some classrooms have been remodeled to include network connections and power outlets at every seat. Many students bring laptop computers or other network-enabled devices to class. Some classrooms have video equipment for recording lectures.
- **Applications & Services** – In the category of technology Applications & Services, the higher education sector is currently at stage 3 on a 0 to 5 scale. Many of the faculty are trained to use the Internet for instruction. Many classes use digital content and/or web-based content for instruction. Students use chat rooms to discuss lessons and ask questions of instructors outside of class hours. Online registration, catalogs and payment are available.
- **Leadership** – In terms of technology Leadership within the higher education sector, Carter County is currently at stage 2 on a 0 to 5 scale. Some departments have plans for better utilizing telecommunications services and technologies in their operations.

Where Do We Need To Be?

The Carter County eCommunity Leadership Team sees great potential for the use of technology in higher education but understands the system is limited in its resources and ability to implement changes within a brief period. They have set goals to improve Networked Places to a 5, Applications & Services to a 4 and Leadership to a stage 3. The team’s vision includes:

- Many classrooms have been remodeled to include network connections and power outlets at



every seat.

- Most students bring laptop computers or other network-enabled devices to class.
- Many classrooms have video equipment for recording lectures.
- Most of the faculty are trained to use the Internet for instruction.
- Most classes use digital content and/or web-based content for instruction.
- Some undergraduate students take distance learning classes for specialized subjects and graduate-level research.
- Specialized courses have been developed to cater to area businesses seeking to improve the skills of workers.
- Some colleges and universities have or are developing online classes to provide greater convenience for students and to increase student enrollment.
- Faculty training on new technology is a priority.

How Do We Get There?

Priority Projects

- Continue faculty workshops and online instruction.
- Expand wireless options across campus.

Other Potential Projects

- Encourage faculty to web-enhance classes.
- Provide laptop incentives to encourage student purchase.
- Develop small groups to focus on technology problem areas.
- Complete the wiring of all dorms to provide students with fast access to the campus network.
- Encourage institutions of higher education to work together to develop online courses and programs.
- Provide continuous training to all educators and staff on technology usage and applications.



Connected Carter County 51HK-12 Education Sector



Why Is This Important?

For our children to succeed in the New Economy, the tools of the Information Age should be as comfortable and familiar to use as a pencil and paper. The future health of the nation's economy depends on our children's literacy breadth and depth which includes strong academic skills, thinking, reasoning, teamwork skills and proficiency in the use of technology. Our schools must equip every student, regardless of family income, with the ability to use these tools. Equally important is the use of these tools in the educational process itself. The interactive nature of the Web provides a richer learning experience that engages and motivates students to explore and learn.

In Tennessee, Internet applications used in elementary and secondary schools continue to develop. Typically, the Internet is a communication tool for teachers and parents to remain up-to-date with regard to classroom activities. Everything from homework assignments to scheduled activities and pictures can be found on classroom websites, keeping everyone connected to educational resources. Elementary and secondary schools provide students with the opportunity to learn more about computer technology and explore the Internet with school computer labs. Committed to protecting students and maintaining a safe educational environment, schools monitor and restrict Internet access of students to ensure the highest quality resources are being viewed, thus ensuring the safety of our children.

Carter County has two public school systems (Carter County and Elizabethton City) with 23 total schools serving PK-12. According to their 2008 TDOE Report Cards, Elizabethton City and Carter County Schools have a total of 592 teachers, 43 administrators and 7,805 students. Of the expenditures in the Elizabethton City school system, 35.2% comes from local funding, 55.5% from state funding and 9.4% from federal funding. Of the expenditures in the Carter County school system, 22.9% comes from local funding, 62.4% from state funding and 14.7% from federal funding.⁸

Elizabethton City Attendance and Graduation Indicators ⁸		
Grades 9-12	Attendance Rate	Graduation Rate
District	94%	87.9%
State Goal	93%	90%

⁸ Tennessee Department of Education, *TDOE Report Card 2008*, www.state.tn.us/education/reportcard, November 10, 2008.



Carter County Attendance and Graduation Indicators ⁸		
Grades 9-12	Attendance Rate	Graduation Rate
District	92.2%	89%
State Goal	93%	90%

Where Are We Today?

Carter County residents use the Internet to assist with education needs at a lesser rate than the state average. The following is how Carter County residents who have the Internet at home are using it in education today:¹

- 47% of residents use a search engine (53% statewide average)
- 26% of residents research for schoolwork (32% statewide)
- 13% of residents contact teachers for self or others (23% statewide)
- 8% of residents take online courses (12% statewide)

Whether you are a student or a parent, the Carter County School System, <http://carter.k12.tn.us>, provides comprehensive information about their educational programs. The Carter County School System believes technology is a priority in education. Carter County Schools currently enjoy fiber optic connections between many schools and T1 connections linking the remainder. Many teachers are trained in the use of instructional technology, but the goal is to have all meet standards in this area. The school system also has a five-year plan with technology goals and is working to further incorporate distance learning opportunities and smart board technology in many classrooms.

K-12 Education

- Elizabethton City Schools, www.ecschools.net
- Carter County School District, <http://carter.k12.tn.us>
- Tennessee Department of Education, www.tennessee.gov/education
- Tennessee Teaching Jobs, www.tnteachingjobs.com

Carter County Schools has developed a technology plan to improve its technology. The technology plan documents how the system will develop an environment conducive to efficient teacher use of computer technology with the ultimate goal of students using computer applications to enhance and strengthen their academic endeavors. The plan outlines the following priorities:

- Increase the access and quantity of computer resources for its teaching staff and students.
- Increase the knowledge base of the teaching and administrative staff regarding computer technology.
- Promote student use of technology as an integral learning tool.
- Assure that school resources meet current or minimum standards and are well-maintained.




The Tennessee Department of Education, www.tennessee.gov/education, believes a quality education is the fundamental right of every child in Tennessee. The Department provides many services, and it is their responsibility to ensure equal, safe and quality learning opportunities for all students, pre-kindergarten through 12th grade. Therefore, their mission is to help teachers teach and children learn. The way children learn is changing every day and Tennessee educators are committed to using technology in the classroom. Tennessee is working to involve parents and community leaders to ensure that students are equipped with the skills necessary for higher levels of education, the world of work and lifelong learning.

K-12 Education Sector Assessment Overview			
Category	Current Assessment	Future Vision	Additional Comments
Networked Places	3	4+	Addition of a mobile lab to the Elizabethton City Schools. Not enough resources for either school district to provide 1-1 computing.
Applications & Services	3	4	Most teachers meet standards.
Leadership	4	5	All of the Elizabethton City Schools have technology plans.

The Carter County eCommunity Leadership Team found that the K-12 education sector understands and values technology. Most schools are currently networked through fiber connections. Multiple software packages are operational.

- **Networked Places** – In the category of Networked Places, Carter County’s K-12 education sector is currently at stage 3 on a 0 to 5 scale. Schools provide at least one computer for every four students in grades K-12. Most classrooms have computers for students use. Some teachers use computer-based presentation tools and projectors for their lessons.
- **Applications & Services** – In the category of technology Applications & Services, the K-12 education sector is currently at stage 3 on a 0 to 5 scale. Some schools have an interactive website that offers access to homework assignments and communication with teachers and administrators. Many experienced teachers know how to incorporate Internet information into the curriculum. Many teachers welcome e-mail from parents and students.
- **Leadership** – In terms of technology Leadership within the K-12 education sector, Carter County is currently at stage 4 on a 0 to 5 scale. All schools have comprehensive plans for learning activities utilizing technology in the classroom. School districts actively promote information



technology literacy to drive positive impacts on economic performance, skills and innovation in the classroom. The school system plays a vital role in raising the skill level and awareness of community and family members.

Where Do We Need To Be?

The Carter County eCommunity Leadership Team recognizes that the school systems have made technology a priority, and the team has outlined a clear vision for enhanced technology usage and application in the classroom. The team sees great potential for the use of technology but understands the system is limited in its resources and ability to implement changes within a brief period. They have set goals to improve Networked Places to at least a stage 4, Applications & Services to a 4 and Leadership to a stage 5. The team's vision includes:

- Some high school students are provided their own laptop computers at school.
- Many classroom teachers have access to digital projection capabilities.
- Most middle and high schools have video programs that allow students to produce and share shows on a public network.
- Some schools use wireless sensors to monitor energy consumption.
- Many schools have an interactive website that offers access to homework assignments and communication with teachers and administrators.
- All teachers meet National Educational Technology Standards.
- Most students meet National Educational Technology Standards.
- Parents and family members are encouraged to participate in student learning via e-mail and online applications.
- School districts see themselves as a vital partner in the community's economic development strategy and have formed partnerships with local businesses to provide skilled technology workers and innovative solutions.
- School districts actively promote information technology literacy to drive positive impacts on economic performance, skills and innovation in the classroom.

How Do We Get There?

Priority Projects

- Apply for distance learning grants.

Other Potential Projects

- Promote activities to increase awareness of online services in education.
- Encourage faculty to web-enhance classes.
- Develop small groups to focus on technology problem areas.



- Employ additional technology resource teachers and specialists to assist in the teaching and learning process so that the level of technology integration can be increased.
- Conduct budgetary planning to set aside funds to maintain and update equipment.
- Create and purchase web-based instructional materials.
- Expand wide-area resources and increase bandwidth by building/expanding relationships between education and providers.
- Win support of school board for increased resources for technology and training.
- Develop strategies for bridging the digital divide, such as after school programs, community centers, etc.





Connected Carter County 52HLibraries Sector



Why Is This Important?

Today, libraries are more than just books on the shelves. Everything from the card catalog to checkout can be simplified with the help of high-speed Internet. Public libraries often play a vital role in the community by providing every resident with the opportunity to receive instruction and use the Internet free of charge. Though they are not available 24 hours a day as a home computer is, libraries are still a central point of access to the Internet.

Many businesses have been launched as a result of research conducted on a computer in a Tennessee library. Many children are able to do their homework online or research reports because of the Internet access provided by the local library. Because the library plays such an important role in the community, it is essential that local libraries are on the cutting edge of technology and are continuing to develop new methods of keeping their patrons up-to-date. High-speed Internet can help libraries continue their tradition as a trusted and indispensable resource.

Carter County
Libraries

- Elizabethton/Carter County Library, www.eccpl.org
- Tennessee State Library and Archives, www.state.tn.us/tsla
- Regional eBook & Audiobook Download System, www.reads.lib.overdrive.com
- Tennessee Electronic Library, www.tntel.tnsos.org
- Tennessee Virtual Archive, www.tsia-teva.state.tn.us
- Books from Birth Foundation, www.governorsfoundation.org

According to the 2006-2007 Tennessee Public Library Statistics, Carter County Public Library System has 18,292 registered borrowers and a circulation of 120,257 items. The system has approximately 38,545 books, 626 audio items and 1,294 video items.⁹

Where Are We Today?

Carter County is home to the Elizabethton/Carter County Public Library, www.eccpl.org. The library offers high-speed Internet availability through a T1 line, access to online account management and catalogue access. Downloadable e-books and audio books are also available. Bandwidth is currently a barrier and is inhibiting the offering of Wi-Fi at the library. Online fine payment systems are currently being given consideration.

Residents have access to 27 databases through the Tennessee Electronic Library (TEL), www.tntel.tnsos.org, using the state library, academic institutions, public libraries and schools. Simply choose your county and library on a map. TEL has access to full-text coverage of the state's leading

⁹ Tennessee State Library and Archives, *Library Programs and Services Statistics FY 2005-2006* <http://state.tn.us/tsla/lps/publications/tnstatistics.htm>, August, 2007.




newspapers. It allows the user to find different points of views on current issues through the EBSCO’s Points of View Reference Center and much more.

The Regional eBook & Audiobook Download System, <http://reads.lib.overdrive.com>, allows the user to access eBooks and audio books in a matter of minutes. One can browse or search this site for downloadable materials. Available books include fiction and non-fiction from a large range of categories. A variety of search options available include search, browsing by category or looking at only the new books.

Libraries Sector Assessment Overview			
Category	Current Assessment	Future Vision	Additional Comments
Networked Places	3	4	Current T-1 connection does not offer enough bandwidth to add wireless access or network ports for patrons.
Applications & Services	3	4	Have website, online catalog, online account management, downloadable e-books and audio books.
Leadership	4	5	

The Carter County eCommunity Leadership Team found that the libraries sector is utilizing the infrastructure available to its capacity. Enhancements to the infrastructure would result in benefits for the sector and its stakeholders.

- **Networked Places** – In the category of Networked Places, Carter County’s libraries sector is currently at stage 3 on a 0 to 5 scale. There is rarely more than a 10-minute wait to use the Internet-enabled computers.
- **Applications & Services** – In the category of technology Applications & Services, the libraries sector is currently at stage 3 on a 0 to 5 scale. Most libraries have catalogs online. Patrons may use the Internet to place books on hold and request books from other libraries in the library system. Patrons can search online databases from home, school or work. Libraries host live video feeds of public interest events.
- **Leadership** – In terms of technology Leadership within the libraries sector, Carter County is



currently at stage 4 on a 0 to 5 scale. Libraries help the community understand copyright issues and how to protect privacy on the Internet. New hires are required to have experience using new technology. Libraries take internal responsibility for continuing e-rate and other discounts. Libraries have developed network management policies and technologies to prevent patrons from sending spam.

Where Do We Need To Be?

The Carter County eCommunity Leadership Team has set forth a two-year vision for enhancing the library and allowing it to serve the community more effectively and efficiently. They have set goals to improve Networked Places as well as Applications & Services to 4 and Leadership to a 5. The team's vision includes:

- Public libraries have added network ports or wireless networks and electrical outlets to carrels.
- Patrons may review their accounts online and pay fines by credit card.
- Patrons can access the library online as a portal for other information services.
- Libraries continue to upgrade their facilities to offer the community the next generation in technology, services and training.
- Libraries actively promote information technology literacy to drive positive impacts on economic performance, skills and innovation in the community.

How Do We Get There?

Priority Projects

- Explore possibilities for broadband access separate from shared connection via WAN.

Other Potential Projects

- Use wireless access to provide more patrons with high-speed access without waiting for library PCs.
- Provide Internet access for county users on mobile branch bookmobiles.
- Encourage the use of online databases and online catalog.
- Expand broadband to rural areas so rural patrons can see the library's benefits.





Connected Carter County

53H54H55H56H57H58H59H60H61H62H63H64H65H66H67H68
H69H70H71H72H73H74H75H76H77H78H79H80H81H82H83H8
4H85H86H87H88H89H90H91H92H93H94H95H96H97H98H99H
100H101H102H103H104H105H106H107H108H109H110H111H1
12H113H114H115H116H117H118H119H120H121H122H123H12
4H125H126H127H128H129H130H131H132H133H134H135H136
H137H138H139H140H141H142H143H144
H145H146H147H148H149H150H151H152
H153H154H155H156H157H158H159H160
H161H162H163H164H165H166H167H168
H169H170H171H172H173H174H175H176
H0F1F2F3F4F5F6F7F8F9FTourism,
Recreation & Parks Sector

Carter County Tourism, Recreation & Parks

- Carter County Tourism, www.tourelizabethton.com
- Tennessee State Tourism Department, www.tnvacation.com
- Weekends R Us, www.weekendsrus.com
- Visit Tennessee Farms, www.visittnfarms.com
- Retire Tennessee, <http://retiretennessee.org>

Why Is This Important?

As citizens become more comfortable with the Internet, they typically continue to find more uses for it. One of the industries benefiting from this trend is the tourism industry. Increasingly, people are using the Internet to research, book and pay for airline tickets, hotels and rental cars and to make other logistical arrangements for their vacations and business travel. In light of this fact, hotels, travel agents, restaurants, attractions and other support businesses in the tourism industry are taking advantage of this trend and making their information and services available on the Internet.

Additionally, with the help of high-speed Internet and computer technology, the leisure time planned and purchased over the Internet can also be used more efficiently allowing for a more enjoyable experience. Whether it is vacation, recreation or a visit to a local park, high-speed Internet is making the travel experience more enjoyable and more convenient. Already, a number of innovative tourism attractions are using high-speed Internet to improve services and meet the changing demands of their guests.

In 2006, tourism in Carter County generated \$27.44 million in direct spending, produced \$4.01 million in worker income and paychecks and generated 174 jobs. It created \$1.7 million in local tax revenue and



\$1.68 million in state tax revenue. Because of tourism in Carter County, each household paid \$126 less in local and state taxes.¹⁰

Where Are We Today?

Carter County enjoys many tourism and recreation assets ranging from Wautauga Lake to Sycamore Shoals State Park to a dynamic calendar of well-attended car shows. The primary agency used to promote tourism in Carter County is the Elizabethton/Carter County Tourism Association, www.tourelizabethton.com. While many of these entities are highlighted in some form or another, Carter County's tourism quotient could be enhanced through a more coordinated and enhanced Internet marketing effort. This could encompass ensuring that all events and attractions have a meaningful online presence and that these events are highlighted through a greater online tourism marketing effort.

Additional Carter County related websites with tourism information include:

- Carter County Photos, www.elizabethtontennessee.com
- Northeast Tennessee Tourism Association, www.netta.org
- Outside in Carter County, <http://cartercounty.info>

The Tennessee Department of Tourism, www.tnvacation.com, promotes travel to and within Tennessee and develops programs to encourage and support the growth of the state's tourism industry and to encourage visitors to extend their stay. All of this contributes to the state's economic growth, thereby enriching the quality of life for every Tennessean. Tennessee is full of splendor and majesty, charm and hospitality. From the Mississippi River to the Great Smoky Mountains, our grand southern state is home to some of the country's premier vacation destinations. Tennessee is a place where bright lights, world-famous music, family entertainment and outdoor adventures create the perfect stage on which to play and vacation.

Carter County is home to many tourist destinations with websites. Some include:

- AmeriCourt, www.americourthotels.com
- Appalachian Quilt Trail, www.vacationaqt.com
- Bee Cliff Cabins, www.beecliffcabins.com
- Carter County Plaza, www.nrdc.com
- Doe River Inn, www.doeriverinn.com
- Elizabethton Golf Course, www.elizabethtongolf.com
- Elizabethton Twins, www.elizabethtontwins.com
- Fish Springs Marina, www.fishspringsmarina.com

¹⁰ The University of Tennessee Tourism Institute, *One-Page County Tourism Economic Fact Sheets* http://web.utk.edu/~tourism/research_publications.shtml, 2006.



- Hamptons Camping on the River, www.hamptonscamping.com
- Lakeshore Resort, www.lakeshore-resort.com
- Laurel Fork Lodge, www.laurelcreeklodge.com
- Lazy Bear Lodge, www.lazybearlodge.net
- Liberty: The Saga of Sycamore Shoals Outdoor Drama, www.sycamoreshoals.org
- Meredith Valley Cabins, www.meredithvalleycabins.com
- A Mountain Hide Away, www.mtnhideawaycabins.com
- Mountain Harbour Bed & Breakfast, www.mountainharbour.net
- Old Main Manor, www.oldmainmanor.com
- Outside in Carter County, <http://cartercounty.info>
- River and Earth Adventures, www.raftcavehike.com
- River Getaway, www.rivergetaway.net
- Riverbend Cottage, www.roanmountaincabins.com
- Roan Mountain Bed & Breakfast, www.roanmountainbedandbreakfast.com
- Roan Mountain Rentals, www.roanmountainrentals.com
- Roan Mountain State Park, www.roanmountain.com
- Safe Haven Farm, www.safehavenfarm.com
- Sugar Hollow Retreat, www.sugarhollowretreat.com
- Sycamore Shoals State Historic Area, www.tnstateparks/syacmoreshoals
- Watauga Dam and Recreation Area, www.tva.gov
- Watauga Lakeshore Resort & Marina, www.lakeshore-resort.com
- Watauga River Cabins, www.wataugarivercabins.com
- Watauga Kayak, Tours & Outfitters, www.wataugakayak.com

Tourism, Recreation & Parks Sector Assessment Overview			
Category	Current Assessment	Future Vision	Additional Comments
Networked Places	3	5	Money is a big issue as it relates to tourism via TN State Parks.
Applications & Services	4	5	Marketing and the ability to work remotely are particularly important. We are able to access e-mail remotely.
Leadership	4	5	The goal is to reach the highest level



			funding as it relates to a persons job description determines what is feasible.
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The Carter County eCommunity Leadership Team found that the tourism, recreation & parks sector is limited by available funds and governemnt regulations. The community as a whole represents Parks & Recreation and would benefit from enhancements to the infrastructure.

- **Networked Places** – In the category of Networked Places, Carter County’s tourism, recreation & parks sector is currently at stage 3 on a 0 to 5 scale. Some facilities use VoIP to save money. Some office workers have converted from desktop computers to portable devices with wireless connections. Some office computers have webcams for videoconferencing.
- **Applications & Services** – In the category of technology Applications & Services, the tourism, recreation & parks sector is currently at stage 4 on a 0 to 5 scale. Some facilities outsource most of their computing services. Some facilities market themselves out of state or internationally. Some employees work remotely.
- **Leadership** – In terms of technology Leadership within the tourism, recreation & parks sector, Carter County is currently at stage 4 on a 0 to 5 scale. Some facilities permit some employees to telework one or two days a week. Some facilities encourage employees to take work-related courses online. Facilities work with educational partners to raise workforce skill levels.

Where Do We Need To Be?

The Carter County eCommunity Leadership Team sees great potential for the use of technology in the tourism, recreation & parks sector, but understands the industry is limited in its resources and ability to implement changes within a brief period. They have set goals to improve all three categories to a 5. The team’s vision includes:

- Most facilities use VoIP to save money.
- Most computers have video cameras.
- Some facilities send and receive video mail.
- Most facilities outsource most of their computing services.
- Some facilities routinely use multiparty videoconferencing to coordinate operations.
- Some facilities have restructured to focus on their core contribution and outsource nonessential functions.
- New hires are required to have experience using new technology in business applications.

How Do We Get There?

Priority Projects

- Educate employees about what is available to them when the proper tools are utilized.

Other Potential Projects

- Place webcams at various locations and events so people can see what is happening without leaving home.
- Establish online kiosks at hotels and attractions that do not have a staffed visitor information booth. The kiosk can play video clips of attractions, recreation, shopping, restaurants and events in Carter County. It should also have a touch screen so visitors can easily print information sheets on various points of interest that includes driving directions from their current location, hours of operation, pricing, etc.
- Utilize technology to market county attractions to potential in-state and out-of-state tourists.
- Encourage local hotels to provide always-on access to their occupants as well as devices with which to connect.