Table of Contents

1. Executive Summary ................................................................................................................................. 3
2. Why Does This Matter? ............................................................................................................................ 6
3. Where Are We and Where Are We Going? ............................................................................................. 10
   Business & Industry ................................................................................................................................ 10
   K-12 Education .................................................................................................................................... 11
   Healthcare ............................................................................................................................................. 15
   Libraries ................................................................................................................................................. 18
   Higher Education .................................................................................................................................. 19
   Community Based Organization ............................................................................................................ 21
   Government ......................................................................................................................................... 24
   Tourism, Recreation and Parks ............................................................................................................. 25
   Agriculture ............................................................................................................................................ 27
4. How Do We Get There? ............................................................................................................................ 30
   Project Concepts
     Inspire a Cultural Shift toward Technology ............................................................................................ 30
     Develop a Centralized Resource for IT ................................................................................................. 31
     Education, Training, and Awareness for St. Lawrence County ............................................................ 32
     Conceptual Plan for E-Government Services in St. Lawrence County ............................................. 33
   Potential Action Items ............................................................................................................................. 34
Credits .......................................................................................................................................................... 37
Appendix
   A. St. Lawrence County Data ..................................................................................................................... 38
   B. July 2008 Survey Results, Maps ......................................................................................................... 41
   C. SLC Rubric ......................................................................................................................................... 46
   D. Notes from Strategic Planning Event ................................................................................................. 48
1. Executive Summary

Purpose
This document provides a “road map” for technology-based growth and economic development in St. Lawrence County. The full report provides an overview of the findings and recommendations of the SLC IT Committee related to the assessment of St. Lawrence County’s technology needs, particularly related to computers, broadband and Information Technology.

Summary
St. Lawrence County’s IT Committee is leading the way into a new economy for St. Lawrence County. The methods used to develop this strategic plan have been modeled by Meade County in Kentucky and ConnectKentucky, a statewide initiative to increase broadband availability. By leveraging the latest in technology and networking, the SLC IT Committee is ensuring St. Lawrence County remains the place of choice to work, live and raise a family.

Pursuing the Five A’s to technology acceleration in Kentucky (Availability, Affordability, Awareness, Applications and Adoption) ConnectKentucky has established the Commonwealth as a national model for technology development. Over the past two years, Kentucky has achieved growth rates in technology availability and adoption that leads the nation. It is because of this demonstrated success, the SLC IT is adopting the ConnectKentucky model as its own.

Today, the world is smaller because technology makes it easier to work and to live nearly anywhere. In order to compete on a global scale, we must provide our citizens and businesses with the best available technology in the world, wherever they choose to live, learn, work or play. Central to technology-based development is access to and usage of computers and high-speed Internet, commonly referred to as “broadband.”

The need for improved technology in St. Lawrence County is great. The County’s large geographic size, low population density, traditional skill base and economically disadvantaged status create significant barriers to developing Information Technology infrastructure. The County’s rate of adoption to new and advanced technologies has been slower than many other areas throughout the State and the nation. The County’s dependence on a declining manufacturing base as well as a traditionally low-tech agricultural industry has fostered a culture of resistance to adoption of new technologies. While there are bright spots in the community, like healthcare, K-12 education, higher education and libraries that have embraced technology, the resistance among end users and limited physical access to high speed services creates barriers to full adoption.

Nationally and in New York, deployment and pricing of broadband has been largely left to "the market" with the result that the United States and New York are not world class leaders with respect to physical broadband access, internet speed, price, and penetration. According to the OECD, the United States ranked 15th in 2007 on the number of persons per 100 with broadband service.

There have been several efforts to resolve the issue of investment in infrastructure in St. Lawrence County. In 2003, the Development Authority of the North County (DANC) completed an Open

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1 Census data and more detailed statistics supporting these descriptions included in Appendix A
Access Telecom Network (OATN). The OATN is a carrier class telecommunication network comprised of 450 miles of fiber optic cable, and 10 points of presence, serving Jefferson, Lewis, and St. Lawrence Counties. While the OATN network may reduce the cost of transport for carriers getting service in and out of the region, it has resulted in little to no deployment of broadband service to previously underserved portions of the County.

Former New York Governor Spitzer announced a Universal Broadband Initiative in December 2007 to bring broadband to the masses throughout the state. Since then, much discussion has taken place at meetings of the New York State Council for Universal Broadband, small grants have been awarded, but not enough attention has been given to the fact that many people in rural portions of the State cannot access broadband service.

Concurrent with the writing of this plan is a $200K project funded by the former Senator Clinton’s office to improve broadband access in St. Lawrence County. The St. Lawrence County Chamber of Commerce is managing this project. They have targeted funds to be distributed to specifically identified communities along St. Lawrence County’s river corridor.

Though progress in St. Lawrence County has occurred, there remains much to be accomplished. If we do not act on our dreams, we are destined to remain at the bottom of most technology rankings.

With this vision of hope for all St. Lawrence County citizens, the SLC IT Committee is utilizing Kentucky’s Governor Fletcher’s Prescription for Innovation, a comprehensive initiative to achieve aggressive goals for broadband deployment and technology adoption. The SLC IT Committee is working community by community, provider by provider to ensure that each of these goals is achieved, including:

1. Broadband availability for all St. Lawrence County citizens, businesses and local governments;
2. Dramatically improved usage (adoption) of computers and the Internet;
3. Meaningful online applications for local government, businesses, educators, etc.;
4. Establishment of local technology leadership teams promoting technology growth for: local government, business and industry, education, healthcare, agriculture, libraries, tourism, community-based organizations and residents.

The SLC IT Committee facilitated an evaluation of its current uses of technology, identifying and filling broadband coverage gaps and developing a strategic plan to increase the use of technology in each sector of the local community, including:

- Local government
- Business and industry
- K-12 education
- Higher education
- Healthcare
- Libraries
- Agriculture
- Tourism, recreation & parks
- Community-based organizations
- Residents

This project has culminated in the development of initiatives to increase the competitiveness of St. Lawrence County through the expansion of broadband availability and the increased usage of
computers and broadband-related applications. In completing this analysis, the SLC IT Committee engaged local leaders in all economic sectors, led the group through a visioning exercise and developed a unique strategic plan for the county.

Additionally, SLC IT Committee has engaged its network of telecommunications and Information Technology resources to determine which technology resources are currently available to St. Lawrence County and which services are expected in the near future.

The SLC IT Committee found that broadband is readily available in the five large population centers, which contain 38% of the county's population. Service availability for the remainder of the County is spotty, leaving 1/3 of households with no access to High Speed service with the exception of Satellite Internet service. The SLC IT Committee will work with current and potential broadband providers to achieve full broadband availability to all residents of St. Lawrence County.

The SLC IT Committee recommends that St. Lawrence County focus on these general areas in order to encourage further build-out of broadband throughout the community and to create awareness of the broadband-related services that already exist.

- Creating awareness of the many available digital applications that provide convenience, growth, productivity and empowerment.
- Developing and expanding community applications that will drive the use of broadband access and ultimately encourage residents to become more technologically savvy.

**Methodology**

**Activity 1** – Kickoff subcommittee meeting and follow-up meetings identified St. Lawrence County stakeholders, their role in the community and identified their existing and future uses of broadband:

- How stakeholders currently use telecommunications and broadband services and applications
- What telecommunications and broadband needs are not currently being met
- What applications would be useful to increase the economic competitiveness of the area
- What telecommunications and broadband services and applications key stakeholders desire for the future

**Activity 2** – Interviews with key telecommunications and Information Technology providers in the community, along with a countywide survey in which the public was invited to submit information about what services were available where, garnered a determination of what services and infrastructure are in place now and what services and infrastructure are planned for the future.

**Activity 3** – SLC IT Committee reported the findings, provided analysis of potential alternatives and made recommendations on potential future initiatives:

- Benchmarked current uses of technology, Appendix C
- Hosted one-day Strategic Planning Conference with more than 70 community stakeholders, Appendix D.
- Researched applications that will enhance the economic vitality of the community

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<sup>2</sup> According to findings from a July 2008 survey conducted by the SLC IT committee. Report summary and coverage maps included in Appendix B.
in various participating sectors

- Recommended a strategic approach to adopting appropriate applications
- Provided project management to assure successful implementation
- Collected coverage data from existing broadband providers in the County. In GIS format, mapped coverage footprints of all providers, Appendix B.
- Provided data for areas not served by broadband
- Shared relevant market data with potential providers to encourage additional investment
- Identified possible grant and low-interest loan availability to areas not currently served
- Encouraged investment from all providers, including cable, telecommunications companies, municipals, satellite and wireless, to fill remaining gaps.

**How Do We Get There?**

SLC IT Committee will continue to assist St. Lawrence County, working together to ensure that St. Lawrence County once again is a smart place to work, live and raise a family. SLC IT Committee will remain engaged with the leadership and stakeholders from each sector to implement the recommendations provided in this report.

**2. Why Does This Matter?**

**Business and Industry**

Today, a number of factors are forcing businesses to change time-honored models of operation, including global competition, a trend toward partnering/outsourcing for all but core functions, and a 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 emerging, the costs of technology are falling.

Businesses cannot be sheltered from competitors. The reality is that St. Lawrence County businesses must adapt to the changing world in which they operate. Businesses have to learn the tools of the networked economy and innovate to survive.

Business and industry often experience 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 the employees benefit immediately, the consumer ultimately sees lower prices and better quality.

Gaining benefits from the implementation of high speed Internet is not just for large corporations. For smaller businesses, technology creates an even playing field with companies much bigger than themselves. 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 whatever local customers they could attract through local advertising and word of mouth, the Internet now allows them to attract customers across the globe.

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 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. This allows those businesses to expand into other markets and grow their companies, or even pass the savings on to their customers.

K-12 Education
For our children to succeed in the global economy, the tools of the Information Age should be as comfortable to use as pencil and paper. The future health of the nation's economy depends on how broadly and deeply we reach a new level of literacy – that 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 New York, 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 on the recent happenings of the classroom. 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 in classroom computer labs and peripherals. Educators are committed to protecting students and maintaining a safe, educational environment, which includes technological applications arena.

Healthcare
The healthcare industry has unique challenges. It inherently generates mountains of information yet at the same time is duty bound to keep these mountains hidden for the sake of individual privacy. 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 have to 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 video-conferencing and digital stethoscopes allow specialists to consult with rural patients, reducing travel time and hazards. This 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 St. Lawrence County citizen is a worthy goal.

Because of the nature of their 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.
Libraries
Access to high-speed Internet services is critical to the operation of public libraries today to meet the demands of their patrons and their communities. Public libraries offer free Internet access for their patrons using the library’s computers and many have added wireless access so patrons have the option of using their own laptops. Public libraries have free access to online databases to assist patrons with their reference needs. The online public access catalog allows patrons to order materials from any library in the system, and have them delivered to their local library. Most importantly, libraries use their Web sites and applications such as virtual reference to extend the availability of their services beyond the walls of their library 24 hours a day. School libraries serve the unique needs of the PreK-12 population, and are often at the leading edge of technology with the access they provide to digital resources and document delivery. Many businesses have been launched as a result of research done on a computer in a local 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 continue 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.

Higher Education
Colleges, universities, community and technical colleges in St. Lawrence County 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 online registration of classes. Colleges and universities often implement the use of the 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. By bringing the classroom to the students, participants from every walk of life and region of the state are able to participate in higher education classes.

However, it is necessary to have high-speed Internet at home to participate successfully in online classes. High-speed Internet is crucial to supporting the capabilities and the possibilities of higher education in St. Lawrence County.

Community-Based Organizations
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.
Government

Government serves citizens in numerous ways, from providing services such as 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, New York has developed www.state.ny.us, a comprehensive website that provides government services and information to all citizens. On this site, residents can purchase and update hunting licenses; schedule a road test to obtain a driver’s license; 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 www.state.ny.us 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. Local governments provide communities with many services, 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 more opportunities for interaction with the agencies that affect them and make more convenient transactions that previously required a drive to the courthouse.

Tourism, Parks and Recreation

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, 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.

Agriculture

Until the benefits are actually experienced by a farm business, the agricultural community often sees 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 it also helps in developing marketing and sales. Agricultural educational opportunities are increasingly available to those farmers with high-speed internet access where they can interact with other farmers, local Extension educators as well as researchers in distant locations, all from the convenience of their own home. With high-speed Internet, farmers can remain up-to-date with everything from the weather to the conditions of their dairy calf facilities 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 St. Lawrence County farmers diversify their operations and develop cutting edge revenue streams. Internet resources can give farmers an edge in production and results. The possibilities are virtually endless. The marriage of agriculture and high-speed Internet can produce abundant success for farmers across St. Lawrence County by creating opportunities for vastly improved production, marketing and sales thus leading to a major increase in the County's overall economic development.

3. **Where Are We And Where Are We Going?**

All sectors are assessed using the rubric in Appendix C.

**Business and Industry**

The St. Lawrence County Chamber of Commerce has 590 active members and indicates that the top 10 employers in the county are:

- Alcoa
- Canton-Potsdam Hospital
- Clarkson University
- Claxton-Hepburn Medical Center
- St. Lawrence County
- St. Lawrence-Lewis BOCES
- St. Lawrence NYSARC
- St. Lawrence University
- SUNY Potsdam
- United Helpers Organization

Serving the business and industry sector is the St. Lawrence County Chamber of Commerce, www.northcountryguide.com. Assisting with their service, the chamber has an online presence with a variety of information available including a welcome message, community calendar and business information. The website also provides St. Lawrence County Chamber information comprised of a membership list, benefits of joining the chamber, programs and projects, important phone numbers and more. The Chamber website will be completely revamped during 2009 to better serve businesses, visitors and members.

**The Assessment**

- **Networked Places** – In the category of networked places, SLC’s business and industry sector is currently at stage 3 on a 0 to 5 scale with most office employees having always-on connections to the Internet at their desks, some mobile workers having laptop computers and can access the office network remotely.

- **Applications and Services** – In the area of technology applications and services, the business and industry sector is currently at stage 3 on a 0 to 5 scale with most businesses having informational websites. Some retail websites can accept credit card transactions. Additionally, some businesses participate in the electronic supply chain. Businesses reported using bar code scanning for supply management. There are high-tech businesses located in St. Lawrence County and are dependent on the quality of the communications services they receive in order to survive. Business is making the shift so that all ‘paperwork’ between their clients and their suppliers are online exchanges. Businesses are increasing the volume of online ordering/marketing.
Leadership – In terms of technology leadership within the business community, SLC is currently at stage 2 on a 0 to 5 scale where some view the Internet as essential to business operations, and employees are trained on basic applications.

The Vision
While the SLC IT Committee found that business and industry's current use of technology is somewhat limited, the team has an aggressive vision for how the county's business and industry sector will be using technology in two years. The team set goals that would move the business and industry sector from the middle stages to stage 4 in the three categories outlined above.

The team’s vision includes:
- Some businesses use Voice over Internet Protocol (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
- Some businesses outsource most of their computing services to local service providers to allow for concentration on core business functions
- Some retailers and manufacturers sell goods out of state or internationally
- Some employees work remotely, some out of state
- Some businesses permit some employees to telework one or two days a week
- Some businesses encourage employees to take work related courses online
- Businesses are working with educational partners to raise workforce skill levels

K-12 Education
St. Lawrence County school systems are comprised of seventeen districts which are component districts of the St. Lawrence-Lewis BOCES. These districts include Brasher Falls, Canton, Clifton-Fine, Colton-Pierrepont, Edwards-Knox, Gouverneur, Hammond, Hermon-DeKalb, Heuvelton, Lisbon, Madrid-Waddington, Massena, Morristown, Norwood-Norfolk, Ogdensburg, Parishville-Hopkinton, and Potsdam. Harrisville Central School is also within the BOCES, and while half the student population lives in St. Lawrence County, the school is located in Lewis County. Many of the districts that border other counties have students who reside outside St. Lawrence County. Each of the eighteen districts is governed by its own Board of Education and hires its own superintendent. Information below will also include Harrisville Central School.

In the early 2000’s the superintendents from the St. Lawrence-Lewis and Jefferson-Lewis BOCES’ regions embarked on a journey to bring broadband Internet access to the North Country. After numerous studies and a series of meetings with a number of organizations including the Development Authority of the North Country (DANC), local politicians, area businesses and business organizations, and component boards of education, the vision of a fiber optic network connecting all school districts became a reality. In November 2004, the first connections were live bringing the future of our local educational system to a new beginning. The potential to make our students global learners quickly increased. The impending uses of this system would soon be met.

Each district provides a variety of programs to enhance student achievement. Technology is integrated into classroom instruction for students. All schools have broadband connectivity. Video conferencing capabilities are available in all districts across the BOCES. All districts have current Technology Plans. Most schools have computer labs and student technology applications include research, productions, projects, as well as direct or remedial instruction. Some teachers are using...
peripherals such as CPS units and SMART boards. Current technology applications are outlined in more depth, below.

**The Assessment**

In its evaluation, the SLCIT Committee found that the K-12 Education sector has made significant progress in making technology a priority, but certainly has room to grow. DANC fiber optic cable results in improved connectivity for all schools in the BOCES region which is resulting in improved student, educator, and business function applications.

- **Networked Places** - In the category of networked places, the K-12 Education sector is currently at a stage 4 on a 0 to 5 scale where some organizations use Voice over Internet Protocol (VoIP). Some end users have converted from desktop computers to more portable devises with wireless connections. End users have adequate bandwidth to use video over web applications.

- **Applications and Services** - In the category of technology applications and services, the K-12 Education sector is currently at stage 3 on a 0 to 5 scale. All districts have organizational websites which are intended to be informational to students, parents and the public in general. Many teachers also have individual websites to support student instruction.

- **Leadership** - In terms of technology leadership, the K-12 Education sector is currently in stage 4 on a 0 to 5 scale. Staff technology training is a priority and planning for enhanced technological applications and training for students and staff is a priority. Stage 4 also includes telecommuniting and telework which are currently not feasible with the majority of K-12 students. K-12 Education remains primarily a 'brick and mortor' institution. However, students do participate in and teachers do teach through videoconferencing, distance-learning, and on-line courses. The superintendents should be commended for their leadership in bringing broadband to the region. Examples are cited below.

Some examples in the three categories include:

- **Distance Learning** provides students with the opportunity to take higher level high school and college courses. Twenty-one high school courses and 11 college courses were offered to more than 300 students across the region during 2007-08. Opportunities were available for community members, as well (e.g. fire-fighter classes).

- **E-mail Access** from home to school is becoming more common as parents feel free to e-mail the child's teacher. Teachers use e-mail from home to stay connected to school as well as to transfer files between home and school.

- **Library Automation** allows schools to develop and maintain electronic catalogs, patron databases, transactions and statistics. Currently, the conversion from Mandarin to the Open-Source Automated Library System (OPALS-NA) is in the second of a three year transition period for all schools in the county. The BOCES School Library System maintains a Union Catalog of all district holdings. Teachers need access to the catalog from home or school to prepare lessons.
• **Moodle** is a course management system designed to help educators who want to create quality online courses or use this free, open source software to create a safe environment for students and their parents to communicate and collaborate beyond school walls. Six teachers piloted the application in 2006. Currently, 44 teachers have been trained and are using Moodle to support student learning. In addition, the Section X office is using Moodle as a part of coaching certification training.

• **Online Courses** are available regionally through a grant-funded pilot program. Fifty-three Accelerate U high school and 13 advanced placement online courses are accredited and teachers are New York State certified. At-risk students are targeted, however, the program is available to all students.

• **Online Database Resources** allow students to search electronically in a safe environment on databases that target the topic. The BOCES School Library System and local districts provide access for students and their parents allowing research to be done from any location at any time of the day or night from a computer with Internet access. During the 2007-08 school year, 682,291 searches were completed resulting in 2,322,418 retrievals.

• **Professional Development and Training** is an important aspect as it is imperative that educators apply technology well. More than 450 teachers received professional development through the Model Schools program during 2007-08. In addition, over the past five years, more than 10% of regional teachers have participated in the Technology Meets the Standards year-long professional development program which focuses on research-based instructional design and strategies using technology tools. Curriculum coaches support their efforts between the summer, five-day training and the winter peer review. The coaches are also instrumental in supporting by-district teachers in their classrooms. The BOCES School Improvement Office and St. Lawrence County Teachers’ Learning Center provide professional development using technological access in such areas as data application, literacy enhancement, and even physical education student assessment. Individual districts also offer professional development opportunities for their staff members. The BOCES Adult Education Program provides many localized and online technology training opportunities for community members.

• **Eighth Grade Technology Assessment** is administered to all students in most districts across the BOCES region. The 2007-08 results show that 64% of regional students met standards.

• **Video-Conferencing** increased from 41 program dates in 2006-07 to 85 in 2007-08. In addition, during 2007-08, one full year distance learning course and 2 semester-long distance learning courses were offered. Additionally, a student in one district is hospitalized and receives synchronous instruction via video-conferencing from her home school.

• **Video-Streaming** by the BOCES Learning Resource Center includes the purchase of digital rights through statewide consortium which buys 389 titles to date. In addition, the LRC integrated video-streamed materials, provided through the public television stations of NY State, into the LRC Medianet online catalog.
• **Virtual Field Trips** offer students the opportunity to visit educational agencies that are so distant that it would not be possible, except electronically. Connections are available with museums, art centers, musical institutes, zoos, science centers, health centers, culinary institutes, historical societies, and more. These opportunities enhance student cultural understanding in this global society.

• **Virtual Reference Library** is an online e-book library containing 41 titles representing 137 volumes of reference material for simultaneous use by an unlimited number of users from any Internet connected computer, day or night. These are the materials that were typically kept behind the librarian's desk with limited access for ‘one-at-a-time’ users.

• **Website Communication** is important to districts. Every district in the county has its own website and each provides information about current happenings, and hosts parent information or newsletters. Many regional teachers have their own websites through the district. Homework or expectations are posted for students and their parents. Unfortunately, not all parents or county residents can access information through this vehicle.

**Current Administrative Opportunities Utilizing Broadband**
Some examples include:

• **Data** are housed on external sites and used to monitor / enhance instruction for students (e.g. Response to Intervention data on AIMSweb or WebGeneration, Career and Tech data on Xenegrade, Student Information System data on eSchool Data, Web 2 School or SchoolTool).

• **Health Insurance, Business Operations, Personnel Records and Student Information Systems** maintain data electronically and are linked with other providers.

• **Heating and building operation** are becoming more technological. As renovations are made, electronic access and support are major components.

• **Parent Access** is an essential component. For example, lunch money accounts or student schedules are available online in some schools.

• **Video-conferencing** is used effectively to mitigate time and distance for meetings.

• **VoIP** or Voice over Internet Protocol telephone systems are reducing costs. Currently three districts (Massena, Gouverneur, and Madrid-Waddington) and the St. Lawrence-Lewis BOCES have VoIP systems. Two other districts are preparing to install VoIP telephony.

**The Goal**
The major goal is to enhance opportunities available to students and educators through increased broadband access to their home settings assuring twenty-four hour, seven day per week home – school access.

**The Vision**
The SLC IT Committee 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 Vision includes:

• Expand use of technology for differentiated instruction for students.

• Provide online assessments to monitor student progress and adjust instruction.
• Increase the number of online courses available for students (e.g. Advanced Placement, remedial, foreign language, and post-secondary courses).
• Expand electronic options for Supplemental Educational Services, required by Title I,
• Provide remote homework help or tutoring after school hours.
• Guarantee access to instructional videos, theater productions, or interactive demonstrations at home, with viewing as a part of homework.
• Ensure easy access to student information system performance or longitudinal data for teachers to work during off-school hours.
• Offer web-based parent monitoring of student performance.
• Offer parents access to their child’s activities (e.g. lunch money accounts via swipe cards, student lunch selections, absence / tardy behavior, grades, sports / club schedules).
• Increase accessibility to digital projection capabilities for classroom teachers.
• Increase the number of schools using wireless sensors to monitor energy consumption.
• Ensure all students and educators meet grade level requirements in the National Educational Technology Standards.
• Increase technology training offered in the community.
• Provide high school students access to online teachers and experts to explore and deepen their understanding of specific topics.
• Offer additional training in information technology resources, especially for support staff and classified personnel.
• Identify options for opening school computer labs to the community after hours, given adequate funding.
• Strive to have all high school students complete one e-learning learning course prior to graduation.
• Make it easier for rural families to access computers and the Internet to facilitate communications with teachers and schools.
• Expand wide-area resources and increase bandwidth to homes to ensure student / educator / parent / community access from any county location, 24 / 7.

Healthcare
St Lawrence County contains five hospitals each with a myriad of small clinics and outpatient care facilities. Associated with these five hospitals are many physicians with substantial private practices.

The five hospitals and associated clinics are:

1. Canton-Potsdam Hospital, Potsdam
   a. Laboratory and Imaging Clinic, Canton
   b. Neurorehabilitation Services, Potsdam and Canton
   c. Norfolk Community Health Center, Norfolk
   d. North Country Mobile Mammography, County Wide
   e. Paul S Warner Cancer Treatment Center, Potsdam
   f. Prime Care, Potsdam
   g. Star Lake Satellite, Star Lake
   h. The Norwood Clinic, Norwood
   i. The Richville Clinic, Richville

2. Claxton Hepburn Medical Center, Ogdensburg
   a. Canton Physician and Imaging Center, Canton
   b. Hammond Health Center, Hammond
Canton-Potsdam Hospital
Canton-Potsdam Hospital provides comprehensive acute medical-surgical care and emergency care, and has widely recognized programs in chemical dependency treatment, cardiac care, obstetrics, and physical rehabilitation services. The Hospital operates the Warner Cancer Treatment Center. With the main Hospital campus in Potsdam, the Hospital also provides services in Canton, Norfolk, and Richville.

The medical staff of fifty-six physicians includes specialists in twenty-three areas, of which nine are surgical specialties.

The Hospital is extremely well equipped, and offers a wide array of services. Examples include a modern intensive care/cardiac care unit, nuclear medicine, ultra-sound, cardiac testing, 64-slice CT scanner, 1.5 Tesla, high-field open bore MRI, lithotripsy, Positron Emission Tomography (PET) imaging and MRI Assisted Vacuum Biopsy.

Claxton Hepburn Medical Center
Claxton-Hepburn Medical Center is a private, not-for-profit, 153-bed community hospital and regional referral center. Claxton-Hepburn includes 67 acute care beds, 10 bed intensive care unit, a 23-bed Residential Health Care Facility, a 28-bed mental health center, and a 15-bed acute rehabilitation unit. The Medical Center provides primary care to nearly 40,000 residents of Ogdensburg and surrounding communities, and regional services to the 110,000 people of St. Lawrence County. Claxton-Hepburn Medical Center has an active medical staff of more than 40 physicians representing almost all specialties.

Regional and county-wide services include radiation and medical oncology provided by the Richard E. Winter Cancer Treatment Center, prenatal care provided by the St. Lawrence Maternal Care Center, and dialysis treatment provided by the Dr. Ravinder N. Agarwal Renal Center, as well as a new Wound Healing Center, and a state-of-the-art diagnostic imaging department.
**Clifton Fine Hospital**

Clifton-Fine Hospital is a small rural Critical Access Hospital located in Star Lake, NY. It is officially known as the Clifton-Fine Health Care Corporation and is classified as a Class C Public Authority. It is the third largest employer in the Towns of Clifton and Fine.

Clifton-Fine Hospital currently operates 20 Special Use Beds, 9 Acute Care and 11 Long Term Care, and provides Swing Bed Services. The Hospital provides 24-hour Emergency Room services along with inpatient/outpatient Laboratory, X-ray, CT Scanner and Physical Therapy services.

As a Critical Access facility, the hospital frequently uses emergency air transport to move patients to other full service hospital facilities.

The Clifton-Fine Clinic, which houses doctors’ offices and examining rooms, is located on the same campus.

The Clifton-Fine Hospital proudly proclaims to be "The smallest hospital with the biggest heart".

**Edward John Noble Hospital**

E.J. Noble Hospital, located in Gouverneur, NY, is an acute care facility nestled along the Oswegatchie River amidst the scenic river valley in the foothills of the Adirondack Mountains and we are within minutes of the 1000 Island Parkway and the Canadian Border.

E.J. Noble Hospital, which consists of 47 beds, and the Kinney Nursing Home, which consists of 40 beds, are not-for-profit facilities that employ approximately 190 full-time and 50 part-time personnel in a wide range of professional, technical and support services.

The hospital’s primary service area has grown steadily to an estimated population of over 25,000 people from various townships surrounding Gouverneur, NY.

The hospital Medical Staff is represented by several different physician specialties, which is unique for a rural hospital. Included are specialists who are Board certified in Orthopedics, Radiology, Anesthesiology, Cardiology, Emergency Medicine, Urology, Internal Medicine, Pediatrics, and Nuclear Medicine. In addition, the hospital employs Registered Physician Assistants and Nurse Anesthetists to staff the Emergency and Surgical Services.

**Massena Memorial Hospital**

Massena Memorial Hospital (MMH) is located in Massena, New York, near the St. Lawrence River. MMH has an Emergency Department staffed 24 hours a day with specially trained Physicians and Registered Nurses, a Helipad is located on campus for emergency air transport to tertiary centers. State-of-the-art Technology and Services; Surgical Services – include 3 operating suites, recovery suites, endoscopy and ambulatory surgery.

MMH also has Outpatient Services, 24-hour Medical Laboratory; state-of-the-art Medical Imaging Services; Nutritional Counseling; Respiratory and Physical Therapy; EEG/EKG/Stress Testing, Nutritional Counseling & Telemedicine.
The Assessment
The SLC IT Committee found that the healthcare sector is beginning to use technology to its advantage and identified a large opportunity for technology applications within the healthcare community.

- **Networked Places** – In the category of networked places, SLC’s healthcare sector is currently at stage 2 on a 0 to 5 scale with some doctors regularly using computers to enter and maintain patient records, and digital instruments and imaging equipment are being acquired. There are communications links between entities, nursing homes, hospitals, doctors and clinics.

- **Applications and Services** – In the category of technology applications and services, the healthcare sector is currently at stage 2 on a 0 to 5 scale with some providers having informational websites, and some storing patient records electronically. In addition, telemedicine is being evaluated, and some offices are electronically transmitting records to insurers for reimbursement. The industry is aiming for patient electronic medical records. Entities utilize technology to consult with experts, and administration is managed centrally with networked business applications.

- **Leadership** – In terms of technology leadership within the healthcare community, SLC is currently at stage 2 on a 0 to 5 scale where some providers have begun the conversion to electronic medical records, and some providers are investigating how to deploy wireless technologies for mobile workers.

The Vision
The SLC IT Committee 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. The team has set goals to move each of the three categories to stage 4 on a 0 to 5 scale. The team’s vision includes:

- Some doctors and nurses are using laptop and palmtop devices connected to wireless networks to enter patient information and access databases
- 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 utilizing wireless transmitters and/or broadband Internet
- Many providers have informational websites
- Most providers store patient records electronically
- Some providers allow patients to e-mail doctors
- Some lab results and images are received electronically
- 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 communitywide healthcare

Libraries
There are 19 chartered public libraries located throughout the county, and one reading center located in the Town of Hopkinton. Canton Free Library also has two branches located in Morley and Rensselaer Falls. These libraries have a total annual circulation of approximately 450,000
items. The smaller libraries have at least two public access computers and the larger libraries have 8-10 computers available. Fourteen of the 22 locations have wireless Internet access for the public.

Nine of the libraries are completely automated using the Unicorn automation system hosted at North Country Library System (NCLS). Four more libraries intend to automate within the next year.

All but three of the libraries have Web pages where patrons can get basic information about the library and find links to online resources, the library calendar and local events. Utilize electronic access to state provided library databases and offer free Internet access to the public.

The Assessment
The SLC IT Committee found that the library sector had a great deal of potential with technology and could benefit a great deal from the implementation for more.

- **Networked Places** – In the category of networked places, the library sector is currently at stage 3 on a 0 to 5 scale where public libraries provide several computers with free access to the Internet.
- **Applications and Services** – In the category of technology applications and services, the library 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. Lastly, libraries host live video feeds of public interest events.
- **Leadership** – In terms of technology leadership within the library system, the sector is currently at stage 3 on a 0 to 5 scale where libraries are the first to offer free access and instruction in the use of the Internet.

The Vision
The SLC IT Committee has set forth a two-year vision for enhancing the library so that it serves the community more effectively and efficiently, concentrating on networked places and leadership. The team set a goal of moving to stage 3 on a 0 to 5 scale in the categories of networked places and leadership as well as a stage of 4 in applications and services category. The vision includes:

- There is rarely more than a 10-minute wait to use the Internet-enabled computers
- Patrons may review their accounts online and pay fines by credit card
- Patrons can access the library online as a portal for other online information services
- The library research desk is an online community resource
- Staff training on new technologies is a priority at most libraries
- Libraries are using consultants to take advantage of e-rate and other discounts
- Library policies reflect appropriate filtering requirements

Higher Education
Higher education has always played a very important part in St. Lawrence County. The county is currently home to 5 institutions: SUNY Canton College of Technology, SUNY Potsdam State University, Clarkson University, St. Lawrence University and The New York State Ranger School. The oldest of these dates back to 1816 with two others opening in the 19th century as well. Current traditional student enrollment is in excess of 11,500, a good portion of which come from NY and the north east US, however, there is also a large international student population. Virtually all fields of undergraduate study are represented, from forestry to film studies, mechanical engineering to mortuary science, education to environmental sustainability.
Higher education has been and continues to be a huge economic base for St. Lawrence County. Besides the students that come here from outside the county to study, there are numerous events throughout the year that bring thousands more to the county such as commencements. Many local businesses, especially the service industry (restaurants and hotels) look to these events for economic boosts throughout the year. The colleges also employ thousands of faculty and staff; some are listed with the county's largest employers.

Technology plays a critical role in higher education, not only within campus boundaries, but also allowing communication between institutions to foster and enhance collaboration and research. Internet connectivity and bandwidth for the demanding students and faculty even play a role in attracting them to these colleges. Availability of these technologies relies on the local communication infrastructure. St. Lawrence County’s geographic isolation has lead to fewer carrier choices as well as higher rates. Bringing more infrastructure and more carriers to the county will reduce costs to the colleges. On campus technologies and pedagogical systems have also become the norm on most college campus. These systems include online registration, course management and content systems and electronic classrooms.

Distance learning is perhaps the best example of the impact of technology on today's colleges. Advances in Internet technologies, applications and the proliferation of high speed internet access throughout the world has allowed colleges to serve students across the globe and allowed faculty running programs abroad to have access to the same academic systems as those on campus.

In addition to the traditional economic drivers from the institutions, several initiatives are aimed directly at expanding economic activity in the county. St. Lawrence’s Coming Home initiative has a goal of attracting 100 alumni to move back to the Canton area with a projected $10,000,000 in residential development and home improvement alone. Clarkson University is involved in several initiatives to incubate small businesses, many as a result of technology transfer from the research conducted at the institution. All of these economic development initiatives are contingent on the County being able to provide a modern infrastructure to encourage business to locate and thrive in the North Country.

The Assessment

- **Networked Places** – In the category of networked places, the higher education sector is currently at a stage 4 on a 0 to 5 scale were college campuses utilize a variety of technology environments for each of their end user groups.

- **Applications and Services** – In the category of technology applications and services, the higher education sector is currently at stage 3 on a 0 to 5 scale. Almost all of the schools have rolled out online applications, registrations, and provide on-line courses. Some of the schools have complete online program offerings, while others are providing a blended learning environment. The schools are moving their services to have a virtual presence and allowing students 24X7 access to information and services. Several of the schools are taking advantage of the convergence in technology to allow enhanced commerce with the local community, such as the BearPaws card at Potsdam, Clarkson's KnightCard, and St Lawrence Community-Wide Account, and the SUNY Canton ID card. The schools are continuing to invest in technology that provides greater access to information to students.
Leadership – In terms of technology leadership within the higher education system, the sector is currently at stage 3 on a 0 to 5 scale. The higher education institutions are leading the county in the general use of technology in the workplace. Each of the schools have implemented advanced technology such as virtual machines, storage area networks, and streaming video. The schools are also working to reduce the environmental impact of their technology investment through the adoption of green technologies.

The Vision
- All campuses have access to Internet2
- All campuses have access to affordable (national average or better) Internet access
- Schools leverage technology to significantly reduce the amount of paper driven process
- Schools implement imaging technology to allow paperless processes
- Schools use videoconferencing extensively in place of travel
- Become a source of technical expertise to catalyze economic development in the county
- Recognize the synergies between educational technology and business technology
- Coordinate technology activities and information exchange throughout the North Country

Community-Based Organizations
There are several hundred community-based organizations of a variety of sizes and purposes in Saint Lawrence County. These community-based organizations include religious, educational, charitable, scientific and literacy groups. Some include the following:
- The Public Software Fund
- St Lawrence County Health Initiative
- Community Energy Services
- Seedcorn
- Northern Adirondack Trading Cooperative
- AEIOU (Adult Education, Ideas, Opportunities and You)
- My Small Business 101

The Public Software Fund
The Public Software Fund helps donors to fund the development of public software, helps contractors to find funding for the public software, and helps users locate funders and contractors to implement their ideas. Public software is free for all to use, modify, share, improve, and elucidate. They allow patrons who are spending personal money to pay people to write or maintain free software to get a tax deduction for it. The general effect is that it doubles the amount of money available for the effort, since the people who can afford to do this are in high tax brackets.

Saint Lawrence County Health Initiative
The Saint Lawrence County Health Initiative has six main programs: S.P.O.R.T., Supporting Peers Options to Reduce Tobacco, a youth tobacco cessation and prevention program; HealthQuest, a school based program to improve nutrition and physical activity in all schools in the county; Eat Well Play Hard, a program to create policy, practice and environmental change that will expand opportunities for healthy nutrition and physical activity among children 2-8 years of age; PATH (Promoting Access to Total Health) which provides one-on-one assistance for those needing help accessing affordable health care and prescription assistance; Community nutrition education, and; Worksite Wellness Services. Interested individuals can get comprehensive information on the organizations website: http://www.slchiinc.org/
Community Energy Services
Community Energy Services (CES) is a non-profit, 501(c)(3) corporation founded in January 2001 to promote energy efficiency and renewable energy systems in the North Country. CES’s main goal is to reduce energy usage in new and existing North Country buildings by educating people about energy efficiency and improving building efficiency. The staff at CES combines years of experience in the fields of energy efficiency services, networking, community mobilization, communications, media outreach, education, planning and service to the low-income sector, building design and construction, and PV system design and installation.

CES provides educational, informational and technical services to North Country residents to increase comfort, health and safety of their homes while reducing energy costs, giving priority to residents with low and moderate incomes. CES’ education, information and outreach programs include the annual North Country Sustainable Energy Fair & Home Tours; Project Green Teams; green building tours in the spring and fall; energy seminars and events; booths at festivals, home shows and expos; presentations to local governments, clubs, churches, community organizations, professional associations and academic institutions; media releases; websites; and response to individual information requests. Their website can be seen at http://www.communityenergyservices.org/

Seedcorn
Seedcorn is a community-based organization that creates awareness, educates the public and supports groups and initiatives working for peace, social justice, a healthy environment, and sustainable communities in the North Country. As issues arise in a community, concerned citizens endeavoring to launch an organization often find themselves reinventing the wheel. Seedcorn helps them mobilize around their concerns, maximize their participating networks, and provide resources for research, office facilities, and experience in working with community projects. This organization hosts an informational website at http://www.communityenergyservices.org/

Northern Adirondack Trading Cooperative
The St. Lawrence County Chamber of Commerce, in partnership with Senator Hillary Rodham Clinton (D-NY), spearheaded the Northern Adirondack Trading Cooperative (NATC). NATC’s purpose is to improve the marketing performance of local cottage businesses through the use of technology and e-commerce.

To improve marketing performance, the project teaches entrepreneurs, artisans, and producers how to begin or to improve their online business. The project uses the combination of business development training, micro loan funding, and the internet to assist vendors in reaching a worldwide market. Information about this organization can be found at http://www.natconline.org/

AEIOU (Adult Education, Ideas, Opportunities and You) Massena
AEIOU offers leisure courses for adults, including but not limited to water aerobics, introduction to computer applications such as Microsoft PowerPoint and Word, digital photography and internet exploration. Through their web site, interested individuals can preregister online and receive course updates. Their website is located at http://www AEIOU-inc.org/

My Small Business 101
Funded by the Coleman Foundation, this online course was developed by a Clarkson University professor to aid small business development. The goal is to provide an innovative, cost-effective
format for the delivery of concise, business concept training for micro-operators that relate to common, critical elements of business operation. These "pit stops" will offer exposure to chosen elements and will have an immediate, lasting effect on the success of business and its community.

Initial elements identified as critical include:

- Media Planning
- Cash Flow Management
- Strategic Planning
- "People" Management (to include employees and customers)
- Implementation of Technology

Each week participants are exposed to the concept by a qualified facilitator. The topic and method of delivery is geared specifically to the audience and the focus will be on current issues that the group is facing. The format will relate to the participating entrepreneurs and the specific community in which they operate.

An innovative and critical component of this experience is that the communities where the involved businesses operate would become partners in the project, with the municipality supporting the program via "scholarships". These scholarships are offered to business operators determined to show promise and potential in the future success of the community. Criteria for scholarship are to be determined by the municipality but may include current or potential employment levels, longevity, civic involvement, or potential for growth. Funding support could come from Community Development Funds, Chambers of Commerce, or grant submission.

The Assessment
The SLC IT Committee found that the community-based organization sector is just beginning to use technology to its advantage and identified a large opportunity for technology applications within the community-based organizations.

- **Networked Places** – In the category of networked places, SLC's community based organization sector is currently at stage 3 on a 0 to 5 scale with most organizations with at least five paid staff having at least one computer for every three employees, and many organizations having e-mail. Some employees can access the network remotely.

- **Applications and Services** – In the category of technology applications and services, the community-based organization sector is currently at stage 3 on a 0 to 5 scale with most organizations having an informational website. Additionally, many local chapters are able to share data electronically with the national parent organization. Some organizations accept online donations or offer electronic forms.

- **Leadership** – In terms of technology leadership within the community-based organization community, SLC is currently at stage 3 on a 0 to 5 scale. Some organizations are involved in specific economic development initiatives. Some organizations plan to use telecommunications services and technologies within the next year, and some organizations provide technology training to their staff at least once a year.

The Vision
The SLC IT Committee 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. The team has set goals to move each of the three categories to stage 4 on a 0 to 5 scale. The team's vision includes:
Many organizations with at least five employees have **direct connections** to the Internet

All paid staff **have e-mail accounts**

Some organizations **use VoIP to save money**

Some office workers have **converted from desktop computers to portable wireless devices**

Some office **computers have video cameras**

**A unified portal provides access to a broad range of community information** and services

**Most local chapters are able to share data** with the parent organization

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

**Government**

St. Lawrence County government offices reside primarily in the county seat of Canton, NY with several satellite offices located in local communities. The county’s web site, (http://www.stlawco.com), is currently under reconstruction and will offer a variety of information and services to county residents including downloadable forms to apply for Civil Service tests, the ability to pay taxes online, and viewing real time election results. Links to affiliated web sites will be offered such as the St. Lawrence County Sheriff’s Office (http://www.stlawrencecountysheriff.com) featuring sex offender locations, and the St. Lawrence County Chamber of Commerce (http://northcountryguide.com/slcc-chamber) offering local tourism information. The county’s vision for its web site is to offer in one place as many services as possible to its citizens and give them quick access to government resources. In conjunction with this vision is the initiative of the county’s IT Committee to provide broadband internet access to all areas of the county. The county’s current use of technology aids in many areas of providing services such as property information research, digital mapping, and job searching.

Many improvements have been noted within government in the use of technology. At a local level, within the county government and municipalities, several positive changes were noted. Some of these include: immediate post election results to the county web, tax collection initiatives, digital mapping, 911 call center and system maps, imagining of many forms, live scan fingerprinting for law enforcement, video conferencing, real property tax information, job searches, state wide voter registration base, wireless court rooms, and video webcasting of meetings.

Even though some significant improvements have been noted, there is still much room for further growth.

**The Assessment**

Although the county and local governments in St. Lawrence County have made some improvements in bringing technology into the everyday workplace, the St. Lawrence County IT Committee has found that there is much room for improvement.

- **Network Places** - In the category of networked places, the government sector is currently at stage 2 on a 0-5 scale. While some employees have access to email, others do not. The connections between and among county facilities and other municipalities is still very outdated. Much can be accomplished in this category.
• **Applications and services**- In the category of technology applications and services, the government sector is currently at stage 2 on a 0-5 scale. While most public agencies have websites, they offer limited informational features. St. Lawrence County government is in its initial stages of creating a website which will enable the public to access usable forms. Until improvements are made to the information the public can access online, they will have to continue to rely on the postal service and telephones to conduct business.

• **Leadership**- In terms of technology leadership within government, St. Lawrence County and other municipalities are currently at stage 2 on a 0-5 scale. Even though some limited progress has been made in the use of technology, it is evident that public agencies do not have a long term strategy for how to best use e-government applications. Minimal telecommunications planning has occurred and most elected officials do not appear to understand the importance and efficiencies that technology can offer to the employees and general public.

**The Vision**
The SLC IT Committee has developed goals to provide a framework for robust e-government functions in the next two years, which will bring the sector to stage 4 in the category of networked places; the rating for applications and services to a stage 4; and the rating for leadership to stage 4. The team’s vision includes:

- Elected officials understand the **importance of data network for economic development and quality of life**. This understanding is vital to meeting the goals for e-government.
- Employees working in the field will be able to utilize **Wi-Fi and cellular networks** to communicate and exchange data with their home offices and others.
- More extensive use of **videoconferencing**, and in particular the implementation of **desktop videoconferencing**.
- Use of sensors and **webcams to monitor locations**, such as rivers, that are critical to public safety.
- Currently several County Departments and municipalities utilize credit cards for payments in person. With the implementation of the new county website and expansion of other municipal websites, citizens will be able to make more extensive use of credit cards and EFT to make **routine payments online**, such as fines, fees, and taxes.
- Services to communities such as **Parks and recreation classes** can be registered for online.
- Some agencies have a formal policy that allows some employees to **work at home** at least one day a week. Enhanced networking capabilities will allow for **more flexible work arrangements and office hours**. This will benefit both government employees and the citizens of St. Lawrence County.
- **Right-of-way and tower siting** policies are generally in place. This helps facilitate the implementation of data networks in an efficient manner.

**Tourism, Parks and Recreation**
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.

Tourism means big business to the County. Visitors to St. Lawrence County in 2007 spent more than $103 million. The traveling public still looks for places where they can stay connected. Even if it means they aren't going to use technology while on vacation, they want access.
According to Burst Media, 79% of respondents will use the Internet to plan their upcoming leisure travel, and in 2007, 54% of all U.S. travel bookings were done online. This survey is just one example, the results of which are indicative of most surveys conducted over the past year.

In order for people in the tourism industry to stay current and marketable, they need to make sure their information is online and accurate.

People are researching hotel and lodging, checking availability, as well as investigating travel destinations. More and more people are also checking social media outlets for travel recommendations. Tavelocity, Orbitz, and TripAdvisor are the three largest. Properties are often listed on these sites with owners and managers not even aware that people are complaining about poor service or finding property not up to their expectations. The old adage still holds true, that if people have a poor experience they tell at least 10 people, with the Internet, that number is exponentially multiplied. And many of these reviews stay on the sites for years. Unless property owners and managers are on top of all of the latest technology, they can find decline in their businesses without understanding the reasoning behind it.

According to Travel Industry of America (TIA), 18 percent of Americans use the Internet to stay connected with family and friends while traveling. Nearly as many use the Internet while traveling to find places to visit or things to do (16%), or choose accommodations based on availability of a high-speed Internet connection or Wi-Fi access (15%). While this doesn’t seem like a larger percentage, when it comes to bookings, every advantage is needed in this competitive field.

Anecdotally, many urban travelers just expect that technology works everywhere, and can get frustrated when there is no cell or Internet service when they reach St. Lawrence County. Traveling in ‘dead zones’ can cause anxiety and raise fear in such people, because they wouldn’t know how to handle an emergency. This can effect their full experience in the area.

The New York State Campgrounds in St. Lawrence County are still on a dial up service. While reservations can be made on line, if you wish to do so at the campground itself, the process can take more than 30 minutes. This is not a user-friendly system. And while the State might consider switching to a faster system, the system has not been made available in each of the areas.

Increasingly, people are using the Internet to research, book and pay for airline tickets, hotels, 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.

The Assessment
The SLC IT Committee found that the tourism, recreation, and parks sector is beginning to use technology to its advantage and identified a large opportunity for technology applications within the tourism, recreation, and parks sector.
• **Networked Places** – In the category of networked places, SLC’s tourism, recreation, and parks sector is currently at stage 2 on a 0 to 5 scale with some office employees having always-on connections to the Internet at their desks.

• **Applications and Services** – In the category of technology applications and services, the tourism, recreation, and parks sector is currently at stage 2 on a 0 to 5 scale where some facilities have an informational website, and some facilities transmit or receive some reservations electronically.

• **Leadership** – In terms of technology leadership within the tourism, recreation, and parks sector, SLC is currently at stage 1 on a 0 to 5 scale where the Internet is seen as a possible way to enhance operations.

**The Vision**
The SLC IT Committee sees great potential for the use of technology in the tourism, recreation and parks sector but understands the industry is limited in its resources and ability to implement changes within a brief period. The team has set goals to move each of the three categories above to stage 4 on a 0 to 5 scale. The team’s vision includes:

- 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**
- Some facilities outsource most of their computing services to local service providers
- Some facilities **market out of state** or internationally
- Some employees **work remotely**
- Some facilities **permit some employees periodically to telework**
- Some facilities **encourage employees to take work-related classes online**
- Employee training on **new technology is a priority**

**Agriculture**
According to the U.S. Department of Agriculture’s National Agricultural Statistics Service, in 2007, there were 1,330 farms in St. Lawrence County comprising 395,000 acres with an average of 297 acres per farm. The total market value of production in 2007 was $142,266,000 with an average of $106,967 per farm. Crop sales accounted for $17,342,000, and all livestock sales accounted for $124,924,000 of the total value in 2007. In that same year St. Lawrence County was ranked 4th in the value of all agricultural products sold in the state. In 2002, the U. S. Census of Agriculture noted that the leading agricultural products in sales in St. Lawrence County were:

- Milk and other dairy products from cows $80,036,000;
- Cattle and calves $9,655,000; and
- Hay and other crops $4,498,000.

In St. Lawrence County, the primary source for educational research and outreach for the agricultural sector is the St. Lawrence County office of Cornell University Cooperative Extension, counties.cce.cornell.edu/st_lawrence/. Cornell Cooperative Extension of St. Lawrence County offers a wide variety of services and provides a great deal of information for all aspects of agriculture. Understanding the value of technology, Cornell Cooperative Extension of St. Lawrence County has had high-speed Internet service at its offices since 2002.

In addition to agricultural outreach, Cornell Cooperative Extension of St. Lawrence County also provides assistance in the areas of Nutrition/Family and Consumer Sciences as well as 4-H Youth
Development. In Family and Consumer Sciences, the goal is to help families eat healthy, spend smart, be effective parents, and have a more enjoyable home life. The mission of 4-H is to help young people become self-directing, productive and contributing members of society. Through Extension’s website, information is available to assist in accomplishing the goals outlined above. Over the past ten years, the statewide Cornell University Cooperative Extension System has endeavored to replace its network of satellite receivers that were formerly used to deliver educational programming to local county offices. Towards that end, Polycom™ internet conferencing equipment is used in 40 county-based sites across New York State. St. Lawrence County was among the first to install this equipment in 2002 and has offered distance-learning opportunities via the internet since then. More recently, the statewide Cornell University Cooperative Extension System has purchased a site license for Adobe Connect-based distance learning. Examples of programming currently available under this technology include Forest Connect, a monthly education forum providing research-based and unbiased information to forest owners and others interested in private forest lands management. This program is run by the State Extension Forester and is available to up to 70 people simultaneously world-wide, if they have an internet connection better than dial up. Within the first two months of this program, it was learned that dial up internet service made this an unacceptable form of instruction and information transfer, yet those with faster internet connections were very pleased with this new way of information transferral. In addition, a new service available for the agriculture sector is the new online extension service, www.extension.org. The extension service is a national portal system providing access to the nation’s largest educational and information system for agriculture, built with the cooperation of the Cooperative Extension Services of the U.S. states and territories, along with other components of Land-Grant Universities and the Cooperative States Research, Education and Extension Service of USDA. This collaborative effort will allow the Extension system to more efficiently serve current and new customers in ways that provide accurate and just in time information for decision making. The information technology and the intellectual capacity for this system are in place to complement the dedicated Extension educators located in the 3000 plus counties of the US.

The Assessment
The SLC IT Committee found that the agricultural sector is just beginning to use technology to its advantage and identified a large opportunity for technology applications within the farming community.

- **Networked Places** – In the category of networked places, SLC’s agricultural sector is currently at stage 2 on a 0 to 5 scale with some growers, suppliers and processors having always-on connections to the Internet at their desks.
- **Applications and Services** – In the category of technology applications and services, the agriculture sector is currently at stage 2 on a 0 to 5 scale with some growers, suppliers and processors having an informational website, and some growers, suppliers, and processors transmitting or receiving some orders electronically.
- **Leadership** – In terms of technology leadership within the agricultural community, SLC is currently at stage 1 on a 0 to 5 scale where the Internet is seen as a possible way to enhance operations.

The Vision
The SLC IT Committee sees great potential for the use of technology in the agricultural sector but understands the industry is limited in its resources and ability to implement changes within a brief period. The team has set goals to move to stage 3 on a 0 to 5 scale in networked places in all
categories including networked places, applications and services, and leadership categories. 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
- Most facilities have an **informational website**
- Some websites can accept **credit card purchases**
- Some facilities participate in an **electronic supply chain**
- Some facilities permit some employees periodically to **telework**
- Some facilities encourage employees to take **work-related classes** online
- Employee training on **new technology** is a priority
4. How Do We Get There?

PROJECT CONCEPT: Inspire a Cultural Shift toward Technology

Long-Term Goal
This project will work toward the facilitation of embracing new technologies to benefit the quality of life for individuals and organizations in St. Lawrence County.

Why It's Important
An informed community is essential in today's global economy. By creating awareness about successful applications of technology within and across segments of the community, members have the opportunity to benefit from the trials of others. By being exposed to new concepts, the community will be inspired to apply technology in their own unique ways. This benefits the community at large.

Specific Measurable Outcomes
(Criteria: clear, compelling, outcome-oriented, achievable within one year)
1. Inventory possible forums for disseminating IT information.
2. Develop outline of content to be shared.
3. Execute delivery of desired messaging
4. Measure results

Steps to Achieve Outcome
1. Assemble active partners
2. Develop 10 minute presentation which describes this plan and its objectives
3. Identify message delivery methods
4. Schedule appearances

Cultural Team
- Community Service Organizations
- College students
- Libraries
- Media
PROJECT CONCEPT: Develop a Centralized Resource for IT

Long-Term Goal
This project will result in the development of a centralized source for ‘one-stop shopping’ of Information Technology services designed to serve the needs of the industry segments represented in this plan. The project will result in coordinating a centralized resource for:
- IT Services – consulting, network support, technical support, technical assistance, technical planning
- IT Resources – equipment, access excess resource capacity,
- IT Personnel – current staff, personnel resources
- IT Training – professional development for employees from all sectors
- IT Partnerships - Stimulate/facilitate community discussions with private carriers and businesses to come up with solutions uniquely designed to serve individual community
  - Identifying businesses needed to be willing to partner with others in the IT area
    - Newton Falls – money to assist also benefitted the community
    - CPH has a large fiber backbone to other hospitals – restricted to medical purposes only (grant stipulation) – wastes excess capacity
    - Means for resolving the ‘access’ issue – exploring technologies/providers to bridge the gap, ex) possible alternatives – cellular, broadband over power line

Why It’s Important
It is far more productive to share knowledge and resources when it comes to developing and adapting new technologies in our businesses and organizations. Due to its relatively small population and economic base, St. Lawrence County must be creative in its endeavor to accomplish economies of scale when it comes to utilizing specialized equipment, human resources, and services. By centralizing resources and services, entities can benefit from the lessons learned by others and possibly gain access to resources that would be otherwise out of reach for economic reasons.

Specific Measurable Outcomes
Produce a plan which includes a description of services, end users, objectives, operating requirements, and a description of the steps necessary to bringing the centralized resource to reality. Implement services and access to resources where possible, with an eye on visioning for delivery of additional services once resources become available.

Steps to Achieve Outcome
1. Survey potential end users for needs assessment
2. Define scope of services offered
3. Identify resource base
4. Identify method for providing information and resources to end users
5. Create the conceptual plan

Centralized Resource Team
- SLC IT Committee members
- Local government representatives
- Small Business representatives
- Colleges representatives
PROJECT CONCEPT: Education, Training, and Awareness for St. Lawrence County

Long-Term Goal
This project will work toward the organization, promotion and delivery of technology education, training and awareness to the entire community of St. Lawrence County.

Why It’s Important
An educated community is essential in today’s global economy. There are opportunities to leverage existing resources in SLC to expand and enhance workforce training programs, encourage more post-secondary education, and create additional awareness within the community in regard to technology. Education, training and awareness are essential in our ability to expand technology within each sector of the community. These community sectors include: agriculture, business and industry, community-based organizations, government, healthcare, higher education, K-12 education, libraries, and tourism, parks and recreation.

Specific Measurable Outcomes
1. Inventory of all education/training/awareness resources in SLC.
2. Development of additional education, training and awareness materials to further the use of technology and broadband applications.
3. Increase the citizen usage rates of computers and broadband in SLC.

Steps to Achieve Outcome
1. Identify all organizations within SLC performing community education, training and awareness.
2. Divide current resources offered by organizations into three categories: education, training and awareness.
3. Determine which sectors could benefit from education/training/awareness opportunities.
4. Create new ways to market and promote opportunities to appropriate groups within the community.
5. Determine gaps in education/training/awareness and ways to fill those gaps.

Educational Team
- St. Lawrence County
- St. Lawrence Lewis BOCES
- St. Lawrence University
- Clarkson University
- SUNY Canton
- AEIOU
PROJECT CONCEPT: Conceptual Plan for E-Government Services in St. Lawrence County

Long Term Goal
Using technology, this project will improve internal and external efficiencies within County, City, Town and Village governments, allowing for better communication between the different government entities and the citizens of SLC.

Why It’s Important
Technology will allow local governments to deliver more applications and improved services to constituents while saving money. E-government will assist in achieving this objective, as well make the services more accessible to the constituents. With growing public acceptance of online transactions and e-commerce growing dramatically, a well-planned e-government strategy will provide for the request for and delivery of local government services over the Internet.

Specific Measurable Outcomes
1. Determine the public need for electronic access to government.
2. Develop a strategy for significantly reducing visits by the public to government offices for routine transactions.
3. Identify applications specifically designed to help businesses interface with governments more efficiently.

Steps To Achieve Measurable Outcomes
1. Review current e-government applications to identify areas containing gaps.
2. Develop a survey instrument to identify applications of public interest. Use the survey to examine potential e-government applications.
3. Identify high-volume services to target for automation/online service.
4. Identify partners and entities to assist in implementation.
5. Develop and launch applications.

E-Government Team
County, City, Towns & Villages
POTENTIAL ACTION ITEMS

Business and Industry

• Facilitate networking events/opportunities among IT Professionals
• Educate small businesses about telecommunications services and the benefits of using technology in business.
• Create a high-tech center to showcase the latest technology.
• Create a technologically capable workforce through training and skills development.
• Develop a local directory of information technology services including providers for technical support, including individuals, businesses and schools.
• Identify ways to reduce the cost of connecting to the Internet and find potential funding sources for small businesses.
• Get businesses together to aggregate demand for high-speed services, create a more attractive market for infrastructure providers and ensure that the services meet local needs.
• Organize demonstrations of the new technologies and present local role-model users.
• Develop a media campaign to help consumers and businesses understand the benefits of high-speed services and the Internet.
• Teach businesses how to use e-commerce to sell to public agencies.
• Encourage Internet access from home for education, business, shopping, eBay and banking.

Education

• Provide training in information technology resources, especially for support staff and classified personnel.
• Establish a countywide consortium (made up of public and private schools and adult education) to consolidate technology planning in the education sector.
• Develop strategies for bridging the digital divide, such as after-school programs and community centers.
• Expand wide-area resources and increase bandwidth.
• Identify options for opening school computer labs to the community after hours.
• Seek technology proficiency of Level 1-3 for K-12 teachers.
• Expand student, parent and teacher access to student information such as homework assignments and attendance records.
• Strive to have 10 percent of high school students and teachers complete one distance learning course per year.
• Make it easier for low-income families to access computers and the Internet to facilitate communications with teachers and schools.
• Promote technology integration in classrooms and on teacher websites.
• Digitize genealogy and historic information.

Healthcare

• Identify funding methods for enhancing educational infrastructure.
• Educate providers on available technologies and the benefits of technology in medicine.
• Using public and private partnerships, ensure that small providers and rural areas have access to affordable, high-speed networks so they can participate in telemedicine and teleconferencing services.
• Seek grants to upgrade technology and train medical staff.
• Develop better strategies to retain technical and professional healthcare staff.
• Educate doctors about how they can use technology in their offices.
• Keep patient data on a central database shared among all medical providers to minimize the number of forms patients have to fill out on each visit, which would enable providers to avoid copying and faxing patient information.

• Provide online appointment scheduling and verification.

Libraries
• Assist libraries in identifying funding sources to advance their use of IT
• Explore Open Source library automation systems, and assist in implementing applicable systems
• Help libraries develop technology plans, incorporating budgets in order to maintain and replace IT systems going forward

Community-Based Organizations
• Identify the community-based organizations in the county and list their websites.
• Develop a list of potential funding sources for technology acquisition.
• Provide technical training programs for non-profits and for-profits to meet their special needs.
• Develop collaborative partnerships with educational institutions and corporate partners to provide web services/design and equipment.
• Recruit university and high school students to develop websites.
• Develop a networking event to share information, ideas and innovations in technology deployment.
• Encourage community-based organizations to use e-mail and the web to reduce the use of paper mail.
• Help community-based organizations find locations to access the Internet.
• Provide training on webpage development, including the use of free webpages.

Government
• Improve the ability to conduct business with government over the Internet, such as permitting, purchasing and payments.
• Develop more e-government applications that provide value to the consumer such as enabling online license renewals, voter registration, and court record searches and voting.
• Allow the donation of appropriate surplus computers to non-governmental organizations and individuals.
• Develop more thorough employee technology training programs.
• Develop partnerships with businesses and grassroots organizations to improve technology usage countywide.
• Increase city-county collaboration.
• Create a partnership of public and private entities to develop a regional portal.
• Build a public-private consortium to identify best practices in website design and content, such as ADA compliance, multiple language support and navigation techniques.
• Create a county website and post all meeting agendas, minutes and attachments online.
• Issue emergency notifications, such as road closures, via e-mail and the website.
• Provide training and awareness to senior citizens including how to file medical claims and insurance online.
• Provide professional development opportunities/resources/information in the area of Information Technology for local government officials
Tourism, Parks and Recreation

- Improve and correct local links and identification.
- Encourage more local companies to sell their goods and services online to promote local businesses and increase sales.
- Develop affordable, high-speed services for rural parts of the county.
- Use technology to market county attractions to potential in-state and out-of-state tourists.
- Encourage local hotels to provide computers and high-speed Internet access to their occupants.
- Get all organizations and hotels online with links to the tourism website.
- Offer videoconferencing capability to all sectors from a central location.
- Make electronic brochures and information available for downloading.

Agriculture

- Increase knowledge of the benefits of high-speed internet to businesses among the agricultural community.
- Develop educational materials to help the agricultural community understand the importance of broadband and what is available.
- Create a list of providers to help the agricultural sector understand what service is available and from whom.
- Consider creating a local agricultural portal for sharing news and market information.
- Enhance and promote the use of videoconferencing centers for use by the agricultural community (such as those used by Cornell University Cooperative Extension of SLC and St. Lawrence/Lewis County BOCES networks and create promotional materials to show possible usages of video conferencing.
- Create and promote materials for the new extension service, a national web-based information and education network providing 24/7/365 access to objective, science-based information from universities and partners nationwide.
- Assist in developing and maintaining a national animal identification database.
- Promote online sales and auctions.
- Use GPS and Radio Frequency Identification on farms.
Credits

St. Lawrence County Information Technology Committee, with significant input from Phil Deelel, Mike Cunningham, Jennifer French, Laurel Goolden, William Hunter, Rick Johnson, Kevin Lynch, Helene Mellon, Francine Perretta, Laura Perry, Marc Rusch, Greg Stahl, Jenna Stone, Patrick Turbett, Carrie Tuttle, and Phil Wagschal

Clive Chambers and Brent Buchanan, St. Lawrence County Cornell Cooperative Extension

Pat McKeown and Ellen Nesbit, St. Lawrence County Chamber of Commerce

Jerry Schell, North Country Library System

Jon Montan, St. Lawrence County Planning Office

Tom Sauter, Development Authority of the North Country

60+ attendees of the 2008 Information Technology Strategic Visioning Day

1,700+ St. Lawrence County residents who responded to the 2008 County wide broadband availability survey.

ConnectKentucky.org
Appendix A

Physical Description
St. Lawrence County is New York’s largest county in area, encompassing 2,686 square miles. It is located along the state’s northern border, separated from Canada by the St. Lawrence River.

Water resources in the County include five major rivers that drain into the St. Lawrence River. Over 70% of the County is forested, including public and private lands, inside and outside of the Adirondack Park, (over 30% of St. Lawrence County is located within the Blue Line). Agricultural uses, located mostly in the fertile St. Lawrence River Valley, take up approximately 18% of land in the County.

With an estimated population in 2007 of 112,878 persons, population density in St. Lawrence County is 42.1 per square mile, compared to a New York State population density of over 400 persons per square mile. Five population centers, including the City of Ogdensburg (12,363) and the Villages of Massena (11,209), Potsdam (9,425), Canton (5,882) and Gouverneur (4,263), comprise 38% of County population.

Other residents live in smaller villages, unincorporated hamlets, or individually, along the county's road network. St. Lawrence County’s rural residents make up over 60% of total population, compared with New York State as a whole, with 12% rural population.

The New York Power Authority’s Robert Moses Dam, located along the St. Lawrence River on the northern edge of the County, provides low-cost power to the county’s major manufacturing facilities, including two aluminum-manufacturing plants (owned by ALCOA) and a General Motors engine plant. Five post secondary educational institutions exist within the county, with two each in the Villages of Canton (St. Lawrence University and SUNY Canton) and Potsdam (Clarkson University and SUNY Potsdam), and one in the Adirondack Park hamlet of Wanakena (SUNY ESF Ranger School).

Socio-Economic Conditions in St. Lawrence County
St. Lawrence is among the poorest counties in the state:

- In 2006, the County had a lower Per Capita Income (PCI) than all but two counties in New York State. **St. Lawrence County’s PCI of $16,809 in 2006 was only 60% of NYS PCI, according to the US Bureau of Economic Analysis.**

- **Median household income** in St. Lawrence County has also lagged significantly behind statewide trends. In 2006, the Census Bureau estimated that median household income in St. Lawrence County at 75% of the state level ($38,566 in SLC, vs. $51,384 in NYS).

- **Poverty** in St. Lawrence County has traditionally been significantly higher than for the State as a whole. In 1999, Census data indicated that 16.9% of persons in St. Lawrence County were in poverty, compared to 14.6% of all New Yorkers. **In 2006, the Census Bureau estimated that St. Lawrence County had 14.5% of persons in poverty, compared to 10.9% for New York.**
Using Census 2000 data, the U.S. Department of Housing and Urban Development estimated that St. Lawrence County had 45.5% of population with low or moderate incomes (LMI). For New York State, HUD calculated that 43.4% of the population had low or moderate incomes. HUD data indicated that 17 communities in the County had more than 50% of their populations with low or moderate incomes.

Unemployment has been persistently higher in St. Lawrence County than in New York State. In 2000, 5.7% of the civilian labor force in St. Lawrence County was unemployed; by contrast the New York State rate was 4.5%.

Housing Characteristics
Housing in St. Lawrence County is typically old, and its cost is increasing at an above average level. According to the 2000 Census, 36.5% of the County’s existing housing stock was constructed prior to 1939. At the state level, 31.2% was built before that time.

- The median age of the housing stock in St. Lawrence County in 2008 is 52 years. The preponderance of older homes means more homes with lead paint and other deterioration problems.
- Mobile homes made up 13.7% of housing units in St. Lawrence County in 2000. Statewide, mobile homes only totaled 2.7% of housing units.
- Purchase mortgage lending in St. Lawrence County is well below the national lending rate. In 2005, St. Lawrence County had a rate of 10 loans per 1,000 units; nationally the rate was 75, New York State 45.

In 2007, the median sale price of homes in St. Lawrence County was $75,000; up from $71,000 a year ago. By comparison, the 2002 median sale price for homes in St. Lawrence County was $55,950, an increase of 34% in 5 years.

Overall Community Development Needs
St. Lawrence County is a large area with a small population, whose people make less money than average New Yorkers. The County's community development needs reflect these realities: job creation and retention, homeownership and housing rehabilitation assistance, and economic development have been identified as key to improving the quality of life in St. Lawrence County.

Infrastructure needs such as water and wastewater treatment plants, water and waste lines and laterals have been and will continue to be addressed through CDBG and USDA Rural Development programs. The County has secured approximately $2.9 million in infrastructure grants over the past 26 years.

Economic Trends
Unemployment – In 1990, Census data indicates unemployment in the Village of Canton was 5.9%, while unemployment in the State was at 6.8%. By 2000, Census data showed unemployment in the village climbed to 20.0%, while the state rate only increased to 7.1%. Unemployment in the County, meanwhile, was 8.5%

State unemployment data indicate St. Lawrence County’s unemployment has persisted at a higher rate than the State throughout this decade. See Table 2-2, below.
Table 2-2  Annual Average Unemployment Rates (not seasonally adjusted) for
New York State and St. Lawrence County

<table>
<thead>
<tr>
<th>Year</th>
<th>New York State</th>
<th>St. Lawrence County</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>4.5%</td>
<td>5.7%</td>
</tr>
<tr>
<td>2001</td>
<td>4.9%</td>
<td>6.1%</td>
</tr>
<tr>
<td>2002</td>
<td>6.2%</td>
<td>6.6%</td>
</tr>
<tr>
<td>2003</td>
<td>6.4%</td>
<td>7.1%</td>
</tr>
<tr>
<td>2004</td>
<td>5.8%</td>
<td>7.0%</td>
</tr>
<tr>
<td>2005</td>
<td>5.0%</td>
<td>6.1%</td>
</tr>
<tr>
<td>2006</td>
<td>4.6%</td>
<td>5.8%</td>
</tr>
<tr>
<td>2007</td>
<td>4.5%</td>
<td>5.8%</td>
</tr>
</tbody>
</table>

Source: NYS Department of Labor

These disproportionate patterns have continued into 2008, where the unemployment rate in St. Lawrence County has remained higher than the State rate. See Table 2-3, below.

Table 2-3  Monthly 2008 Unemployment Rates (not seasonally adjusted) for
New York State and St. Lawrence County

<table>
<thead>
<tr>
<th>Month</th>
<th>New York State</th>
<th>St. Lawrence County</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>5.6</td>
<td>7.5%</td>
</tr>
<tr>
<td>February</td>
<td>5.0</td>
<td>7.6%</td>
</tr>
<tr>
<td>March</td>
<td>5.1</td>
<td>7.5%</td>
</tr>
<tr>
<td>April</td>
<td>4.5</td>
<td>6.6%</td>
</tr>
<tr>
<td>May</td>
<td>4.9</td>
<td>6.6%</td>
</tr>
<tr>
<td>June</td>
<td>5.2</td>
<td>5.6%</td>
</tr>
<tr>
<td>July</td>
<td>5.3</td>
<td>7.0%</td>
</tr>
<tr>
<td>August</td>
<td>5.6</td>
<td>7.1%</td>
</tr>
<tr>
<td>September</td>
<td>5.6</td>
<td>7.0%</td>
</tr>
<tr>
<td>October</td>
<td>5.4</td>
<td>6.9%</td>
</tr>
<tr>
<td>November</td>
<td>5.9</td>
<td>7.7%</td>
</tr>
</tbody>
</table>

Source: NYS Department of Labor
Appendix B

Household Broadband Availability Survey – April 2008

Description
In March 2008, the St. Lawrence County Information Technology committee launched a survey that was made available online, on paper at all local libraries county wide and on paper at all Department of Motor Vehicle offices in the County. All households in St. Lawrence County were encouraged to participate in the survey by submitting a response either through the online version or the paper version. There have been 1758 surveys received to date.

The committee's objective was to identify where residential high speed Internet service is and is not available in St. Lawrence County. There were two primary reasons for gathering this inventory of service availability. First, we were interested to know to what degree high speed is unavailable to St. Lawrence County residents. Secondly, we wanted to understand what locations were underserved in hopes of identifying areas of priority or greatest need.

Summary of Findings
St. Lawrence County Households are relatively well connected to the Internet compared to the rest of the nation.

- 52% subscribe to high speed. Compares to Pew Internet’s research that found 55% of all American adults now have high speed at home. Pew found 38% of those living in rural Americans now have broadband at home.
- 11% do not subscribe to an Internet service. Compares to Pew Internet’s research that found roughly one-quarter (27%) of adult Americans are not internet users.

One third of St. Lawrence County households feel they cannot access a high speed connection, such as DSL or cable.

- 33% of all respondents say they do not subscribe to a high speed connection because DSL or Cable high speed Internet service is not available at their house.

St. Lawrence County has high number of dial-up subscribers.

- 36% subscribe to dial up. Compares to Pew Internet’s research that found 10% of all American homes have dial up Internet.

Non-internet users and Dial up Subscribers represent a large pool of potential broadband users.

- 39% of those with no Internet at their house tell us they do not have a high speed connection because DSL or Cable high speed Internet service is not available at their house. Compares to Pew Internet’s research that found 12% do not have Internet because high speed is not available.

• 75% of those with dial-up tell us they do not have a high speed connection because DSL or Cable high speed Internet service is not available at their house. Compares to Pew Internet's research that says 24% of rural dial up subscribes, don't subscribe to high speed because it is unavailable where they live.

Additional Findings
• 8% of those with no Internet at their house tell us they do not have a high speed connection because high speed Internet is too expensive
• 23% of those with no Internet at their house tell us they do not have a high speed connection because they don't have a computer.
• 55% of all high speed subscribers purchase Cable modem service, 26% of users subscribe to DSL, Satellite and Wireless split the remaining market share.

Sample of Comments Received
“We are very much in need of reasonably priced high speed internet. The dial up service we have is so slow (19-24 kbps) as to make it impractical to use for all the simplest of internet uses. Cable does not come up County Route 27 and DSL is not available. We have checked out the three other options - Satellite and Cell Phone Tower Wireless (from a cell phone tower) and Premier costly start-up expenses. That is $960. per year just for high speed internet - a much high cost than Cable. For very little more, Cable provides high speed internet, TV and phone. Premier Wireless came to our house to check our signal. They have two bands of internet service. The less expensive of the two couldn't produce a signal even though two of their antennas had a line of sight from our roof. The more expensive band would work, but costs about $80. per month after start-up expenses, putting it in the same range as Satellite and Cell Phone Tower Wireless. As you are well aware, having a high speed internet connection is critical to living and working in the modern world. We very much hope you can help bring about a solution at a reasonable price in the near future.” -Dial up user because no high speed access is available and is too expensive, Canton, New York.

“I am lucky if I can get on line and then it is 14 kbps to 20 kbps which is very slow - I need access to transmit my work from a PDA - The phone company will not replace phone lines that will allow DSL or better. Cannot afford satellite. Third world countries can download & dial-up faster than me. Please help us on County Route 10. Thank You.” -Dial up user because no high speed access is available and is too expensive, Gouverneur, New York.

“Have talked with cable (Time Warner) on several occasions about getting cable line. There are several houses from Route 310 to ours. They don’t want to run a line. Cost to us is $3,000.00 to do it! Would also welcome DSL.” -Dial up user because no high speed access is available and is too expensive, Norfolk, New York.

“In our location and any location with the Adirondack Park, Internet access is pretty much a necessity, given the distance to stores and other resources. On another note, cell phone towers are also needed in our area. There is no cell phone service at our residence and with frequent power outages (winter storms) cell phones are essential also.” -Dial up user because no high speed access is available and is too expensive, Piercefield, New York.
“We are retired and cannot afford high speed internet.” -Dial up user because no high speed access is available and is too expensive, Rensselaer Falls, New York.

“Our daughter will be attending grad school in May. High speed Internet access is crucial to her success due to the demands colleges place on students use of the Internet.” -Dial up subscriber because no high speed access is available, Russell, New York.

“Three home on this section with one 911 address all have computers on dial up and need high speed. School age children in two of the homes.” -Dial up subscriber because no high speed access is available, Norwood, New York.

“High Speed Internet would greatly help with our home-based business.” -Dial up subscriber because no high speed access is available, Wanakaena, New York.

“We make over $150,000/year and no amount of money allows us network TV or Broadband. By the way we paid for DSL-unreliable it works about 2 hours a day & NEVER when it rains! We receive no cable TV - our TV through Direct TV refuses to allow us ABC, NBC, or CBS says we can use a roof antenna, $300, CBC NBC or ABC waiver were denied. We were denied superbowl - can't get it. Award shows can't get it. Everyone else can watch network TV shows. WE CAN'T.” -Dial up subscriber because no high speed access is available, Lisbon, New York

“I have tried several times to obtain DSL via Verizon & have been unsuccessful yet it is available 1.5 miles from my house towards Canton on Kelly Road. This is very discouraging. I have also spoken with the other companies who are supplying broadband with no success.” -Dial up subscriber because no high speed access is available, Rensselaer Falls, New York
St. Lawrence County Broadband Access Survey
Composite Data - July 2008
Internet Availability Via Telephone or Cable
(Dial-up Versus High-Speed)
St. Lawrence County Broadband Access Survey
Composite Data - July 2008

High-Speed Internet Use by Technology Type

🌟 No High Speed Reported to be Available

- Cable
- DSL
- Satellite
- Wireless

Relative Population Density
- Low
- Medium
- High

Roads and Streets
- Village Boundaries
- Town Boundaries

0 10 20 40 60 Miles

St. Law Co. Planning Office
315-377-2282
Broadband Composite Survey Data - July 2008 - .mxd
## Appendix C – Rubric to Assess Where are We and Where are We Going?

<table>
<thead>
<tr>
<th>Stage</th>
<th>Networked Places</th>
<th>Applications &amp; Services</th>
<th>Leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Least Connected</td>
<td>Not using the Internet.</td>
<td>No computer use. No website. All contacts via phone and postal mail.</td>
<td>There is no technology or telecommunications plan.</td>
</tr>
<tr>
<td>0</td>
<td>Some organizational end users have limited access through a dial-up connection.</td>
<td>Some organizational end users use e-mail and Internet.</td>
<td>The Internet and electronic communication is seen as a possible enhancement to the way daily business is conducted.</td>
</tr>
<tr>
<td>1</td>
<td>Some organizational end users have always-on connections to the Internet at their desks, and other peripherals.</td>
<td>Some organizations have an informational website. Most end users use e-mail and Internet. Some organizations transmit or receive a portion of their business electronically.</td>
<td>Some organizations view the Internet as essential to business operations. Employees are trained sporadically on basic applications. Limited plans exist for technology purchases, little vision for use of technology or applications.</td>
</tr>
<tr>
<td>2</td>
<td>Most organizational end users have always-on connections to the Internet. Some mobile workers have laptop computers and other devices and can access the network remotely. Wireless is utilized in some environments.</td>
<td>Most organizations have informational websites. Some organizations are utilizing web based applications for internal operations. Some websites are e-commerce enabled. Some organizational end users participate in an electronic supply chain.</td>
<td>Some organizations permit employees periodically to telework. Staff technology training is a priority at most organizations with some encouragement for employees to take work-related classes online. Many organizations are actively planning implementation of enhanced technologies.</td>
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<td>3</td>
<td>Some organizations use Voice over Internet Protocol (VoIP). Some end users have converted from desktop computers to portable devices with wireless connections. Some end users have adequate bandwidth to utilize video over web applications.</td>
<td>Many organizations are utilizing the web to deliver enhanced customer services. Some organizations outsource the majority of their computing services. Some organizational end users work remotely.</td>
<td>Training on new technology is a priority. Some organizations have formal policies permitting employees to telework one or two days a week. Organizations have developed network management policies. Some organizations view their role in the community as being a driver for technology adoption.</td>
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Most equipment has been converted to digital, and is networked. Voice/data has converged onto one network. There is enough bandwidth in the LAN to manage the largest of applications. Where applicable, end users utilize mobile devices.

Video applications are embedded in every day operations. Applications utilizing wireless access are widespread. Interactive applications, such as customer relationship management, online GIS and video streaming are in regular use.

Organizations have telecommunications and information technology master plans in place. Entities have restructured to focus on their core contribution and outsource nonessential functions. New hires are required to have experience using new technology. Organizations view themselves as a vital partner in the community’s technology strategy.
Appendix D – Notes from Strategic Planning Event – July 2008

Strategic Planning Notes, Sessions I & II
What are some positive things you/your organization are doing with technology and what resources do you utilize to make it happen?

- Fiber connectivity between branches
- Data voice convergence
- Wifi in buildings
- City wide wifi projects
- Customer service increase with technology mobility/email
- Video Conferencing extensive use
- Healthcare – communications between patients/physician/order entry electronic medical records
- Bar code scanning for supply management
- More us in daily business practices
- Work at home opportunities – reducing increasing utility costs
  - PCR Nicholville, Kinney
- Website communication to parents from schools
  - Lunch money entered online – with tracking
- Distance learning opportunities
  - Saving on travel – virtual field trips
  - 98% of Canton College involve technology
- VOIP to Bosnia
- Moving towards paperless – state reporting is electronic
- 4 day work week (work at home)
- Economic development (teleconferencing)
- Connect through the D of Labor
- Kinney has redundant connectivity to all buildings
- Electronic access to library databases (state provided)
- Chamber of Commerce –
  - Increase small business with online ordering/marketing
- Tax collection on line (piercefield)
- Electronic reservations for state parks
- Massena and United helpers
  - Communication open with other hospitals and providers
  - Consultation with experts
  - Centralized management for UH (business processes)
- Town of Stockholm
  - DSL from Nicholville
  - Resource for residents
- Northbay
  - Able to be located here based on communication connectivity
  - Business paperwork all online
- Remotely connecting to other companies and doing work on line – moving to VOIP
- Home based employees
- Rotating regional programs for health programs (dental hygiene)
  - JCC and Broome CC
School is the hub of access for Clifton-fine community
  - Distance learning programs
- Free internet access at Libraries
- St Lawrence – web based systems for students and administration
- Webcasting of video
- Tying together disperse organizations (intra and inter)
- Remote monitoring of devices (DANC)
- Backup data outside of the area (online backups)
- Ability to change the way we work, live and get information
- Real property – PDF online of taxrolls
- Wireless courtroom
- High School VTC
- Extensive offering of online course – flexible learning options
- Video Conferencing international faculty and students

2. Overall, what are your organizations biggest challenges?
- Cultural challenge of technology
  - Resistance of providing information (public record)
  - Can lead to a lack of financial support
- Organization leadership is not there to use technology to be productive (technology enhance productivity)
- Customers and end users lack knowledge to use technology
  - Need critical thinking skills training
- Students that are not successful in High School are lacking IT skills (and they stay in area)
- Value of the technology needs awareness (investment)
- Fuel Costs
- Remote Geography
- Employee recruitment (finding nearby)
- Population decline (infrastructure may be geared towards higher numbers)
- Taxes and cost of doing business in NYS (residential, business, licensing)
- Employee retention
  - Especially in the IT sector
- Ability to maintain the technology they have
  - Old technology - finding money for refreshing technology
- Building an interactive website and associated security (small business challenge)
- Employees access private business systems (terminal server or VPN) ability of the system to allow remote access
- Education
  - In Clifton – most residents don’t have access at home – leads to abuse at school (email, web, etc)
  - Parents are “scared” of the Internet
- Quality services for technical components
  - Resources aren’t in the area (can’t find qualified service)
- Lack of access to skilled labor
  - Technical skill backgrounds (healthcare) specialists
- Population density
• Duplication of infrastructure (shared skilled labor and infrastructure)
  o Every town has the same personnel and software
• Dependent on roads for transportation
• Lack of access to an airport
• Lack of physical space (increase in record keeping requirements)
  o Offsets space for personnel
• Staff resistance to adopting to new technologies
• Businesses needed to be willing to partner with others in the IT area
  o Newton Falls – money to assist also benefitted the community
  o CPH has a large fiber backbone to other hospitals – restricted to medical purposes
    only (grant stipulation) – wastes excess capacity
• Lack of training (needed) for IT users
• Access at home impacts the ability to do work or school at home
• HIPAA regulations – balance access and security
• Employee retention and recruitment, keeping people in area (graduates)
• Services at the county and state level are lacking (airports)
  o Centralizing systems
• Lack of cell phone coverage
  o Keeping in touch with people
  o Need to provide basic services for business development
  o Making sure expectations are met when business choose to locate here
• Challenges on who takes the lead on initiatives (government or private industry)
• Govt can hold back private industry from doing it’s own thing
• Private industry may “skim the cream” and leave out underserved areas
• Access to broadband across county and how to serve all communities
• Privacy issues concerning amount of data available on Internet

Strategic Planning Notes, Session III
3. How is your organization limited by what you have access to? What is the workaround you’ve adopted because of it?
• All methods should be used
  o Diverse numbers of methods (no one size fits all) – including emerging technologies
• Cell coverage is an issue (public health nurses can’t connect directly)
  o Enter data offline
  o Dialup (sometimes client phones)
• Residents do all work over the phone (limited use of the the Internet). Online is not an option
• Students don’t always have access to high-speed Internet (limits the amount and type of online materials)
• Govt regulations inhibit access (HIPAA) – cannot use unsecured wireless for transmission of data
• Tech support – No one can afford what they need
• Solution – shared services at the county level may help (web site and technical support to the towns – the BOCES model)
• Nice to have a pool of specialty resources (network engineering, applications programmers, etc)
• Training – time spent in training pulls them aware from the work that needs to be done
Manual to Automation – the time and money it takes to make the transition is not attainable.

- Capital – having the income to invest in the technology and applications
- Work Around – utilization of open source software to build application s to run the organization as an alternative to off the shelf applications. Single platform can cover many aspects of the business.
- Organizations within the area do not have support, even if the money is available the skills may not exist to implement the technology. Reliant on out of county resources.
- Funding issues – example – there is money for the technology but not funding for the staff to utilize the technology (libraries)
- Initial funding is easier to obtain then ongoing maintenance costs
- Employee resistance to use technology
- Inequity of service in the county based on location and rural areas
- Shared services – smaller municipalities don’t have the funds for expensive technology items, but could use them if available
- Desire by business to use local providers and consultants, but the availability isn’t keeping up with expanding use of technology.
- Young professionals are not willing to move to areas where they can’t get cell phone and Internet access – limits the labor pool and makes retention difficult
- In the past, cabling was limiting. Now that connectivity is in place software programs are not communicating well. Integration of software packages is a limiting fact
- Industry needs to work together locally to get integration
- Home Internet access limits the ability of gov and schools from providing information to residents
- Continuing education – can’t do it locally (provide it) so people are going out of the area. Limited connectivity counters online courses
- Lack of cell coverage limits the ability of employees to get alarms (network etc). Can’t get alarms unless they are home. Must stay home when on call.
- Not enough money for staff to maintain the systems
- Slow phasing is an approach to implementing technology to save on costs
- Flexible plans that allow changing of priorities
- Implementing technology programs in school – teacher education is an issue –
  - Peer training can be used to increase usage
- Not getting voicemail, mobile workers not possible
- Physical limitation for PC (library)
- Small business need a technology plan
  - Avoid re-active technology implementation
- Elevating IT within the organization – it’s evolved and needs to be more of a focus
- Need for hosted services – small businesses need the technology, but can’t afford a technology staff
- Forum for understanding best practices for small business – shared services, what can & can’t be collaborative
- Education & facilitation for technology use
- Remote areas have no access to cell or broadband – public safety issue
- Seasonal areas – seasonal residents expect services, may go elsewhere to get them.
- End user equity issues
- Lack of consistent infrastructure – difficult for businesses
- Lack of willingness to share infrastructure
• Confusion of who owns data (govt and towns)
  o Look to other areas in the state and how they address their issues
• Inertia – where to begin
• Provide and enhance consistency and communication
  o Leadership

Strategic Planning Notes, Session IV
What role do you see St Lawrence County government taking to address some of the challenges or limitations identified earlier? Share ideas on specific actions you feel the county should take.
• Basic computer training
  o Broker/Coordinate/provide information for – one stop shop?
  o Finding grants to help fund training
  o Clearinghouse for knowledge of available
  o Computer Literacy volunteers?
• Shared services
  o County and IT department loan resources to towns and villages
  o Economy of scale
  o Clearinghouse of info for local towns to coordinate laws, rules and regulations and information portal for residents
  o Loaning of seldom use but needed specialized equipment (plotter, scanner etc.)
• Coordinating grants from multiple sources – coordinate local grant availability with county efforts
• County Technology plan and share with localities (not reinvent the wheel)
• Get into the mindset that we are all in this together *break down barriers
• Open up and facilitate communication better among various organizations
  o Look for other working sessions
  o Prevent duplication of effort among communities
  o Adirondack Association of Towns and Villages
    ▪ #1 issue is Broadband
  o County reach beyond borders to facilitate shared services
  o Email updates
  o County Development newsletter
• Grant writing assistance
• County leveraging or enticing expansion of broadband in underserved areas.
• Supporting education and training programs for technology
  o Clearinghouse for IT specific training in county
• County work closely with the Chamber of commerce to make sure they are linked in with technology developments
• KISS
• County to be more aggressive in getting funding for projects
• Ensure the money is properly spent
  o Metrics and accountability
• A point person in county government to work with towns and villages to on technology
  o County take a leadership role
• IT needs a priority, not an add-on
  o Same level as roads and bridges
• Boilerplate concept
  o How to handle situations in towns
Antennae on water tank example
• Commonality in websites from County, town and village
  o Common look, feel, and navigation
• Independent IT resource provided by the county to help the towns, villages, etc.
  o Include presence at board meetings
• Shared service
  o E-government functions
    ▪ Tax, water, sewer
    ▪ Assist municipalities who can’t do it on their own
• Website – one shared hosted site
• Keeping an eye on new technologies and disseminate information to local governments
  o Village of Canton – what’s in it for us?
• Public health database
  o Help focus county health providers
• County coordinate and make resources available
• Providing an education function
• Facilitate better use of DANC resources in schools
• Making broadband universally available
  o Surcharge based funding (example 911)
• County coordinate buying of technology
  o Economy of scale
  o Cooperative bidding
• Market research on behalf of ISP to find out what the actual demand is and provide to them to extend service
• All the schools send out census surveys – encourage them to ask about internet access
• Identify where tax dollars are going for technology and the effect and impact of that spending
  o Metrics

Strategic Planning Notes, Session V
If there were no limitations, what would be the ideal environment for you or your organization to operate in?
• Access, Hardware, Training
  o Everyone with a computer, training and access
• Wireless Blimp
• Fiber infrastructure across the county
  o Every household with computer and broadband
• Keep talent local
  o Perhaps subsidize business to keep technicians available
• More help from the universities
  o More resources
• Computer literacy volunteers
• Database of health information
  o Electronic records tied to biometric data, shared between providers and hospitals
• County-wide cell and wifi
• Centralized recordkeeping for county – online and secure
• Fair competition for purchasing of government equipment
- Live broadcast of all public meetings
- IT staff with continuity
- Common technology level across all towns and villages
- Greater coordination of county and town governments
- No taxes!
- Leadership at the county level that promotes the value of technology
- VTC of conference and workshops
- Limit government regulations
- Consistent infrastructure
- High-speed rail
- Uniform web services across government entities
- Highly attractive for telecommuters
- All businesses provide online services
- Financial incentives to residents to conduct business online
- Technology a basic way of communications
- Training coupled with job opportunities to keep youth in county
- Build trust for telecommuting
- School collaboration with VTC
- VTC to home-bound students
- County “yellow-pages” for businesses
- County hosting directory
- Last mile treated as a public utility
- Stimulate private investment in last mile by providing an open access cable infrastructure
- Face-to-Face consultations virtually
  - Localized VTC facilities
- Email tax bills