An Alabama Vision for a Brighter Future With Broadband

June, 2009

Table of Contents

Background

The Importance of a Clearly Articulated Vision

Unquestionably, Broadband high-speed Internet is today a major force for change in America and around the world. There is little doubt that it will have many profound effects on the way Americans will be living their daily lives in years to come.

But just what kind of effects will it have on Alabama? This is a much harder question to answer. Much depends on what effects Alabamians ***want*** it to have, and are willing to ***work*** to make it have.

The deployment of Broadband does not in itself guarantee positive results. Indeed, expanded access to Broadband could even result in negative consequences. For example, more reliance on high speed communications could produce greater inequality of economic opportunity, and social unrest – ***if*** there is no plan to ensure that ***all*** Alabamians have access to, and the ability to use, Broadband services. And even where universal access has been achieved, some of the content that is delivered over the Internet could be harmful.

Thus, the wider availability of Broadband services by itself is not the goal. Rather the leaders and citizens of Alabama seek to ***use*** Broadband as a means to gain access to better jobs, business opportunities, health care, educational opportunities, public safety, transparent government, and generally a better quality of life.

It is for reasons such as these that the Alabama Broadband Initiative and the ConnectingALABAMA Project have chosen to start with the development of a strategic vision. By starting with a vision as a blueprint for the future, it is much more probable that the actions Alabama uses to encourage deployment and use of Broadband will result in maximizing Broadband's possible beneficial effects, and minimizing any potentially harmful effects.

The ConnectingALABAMA Visioning Process

The ConnectingALABAMA visioning process is organized and implemented in two phases:

Phase I – Individual, confidential, non-directive, open-ended interviews were conducted with 21 Alabamians during the spring of 2009. Each interviewee represented a unique geography

and/or sector of the Alabama's future (business, education, health care, agriculture, regional planning, faith-based and community action, retirees, government). A facilitated interactive process was then used to create as much consensus among the interviewees as possible, for a positive, beneficial vision enabled through Broadband over the next ten years. That consensus is embodied in this report.

Phase II – This consensus vision will next be distributed on-line and followed by regional meetings throughout the state to begin the process of transforming the vision into a concrete plan of action.

Overview of Phase I Insights

The purpose of this report is to summarize the major insights obtained from the twenty-one Phase I interviews. The interviewees agreed strongly that, to maximize the beneficial impacts of Broadband, and minimize the potentially harmful ones, Alabama will need plenty of wise and consistent leadership, solid consensus, strong political support, and adequate funding. Also needed is suitable regulation and encouragement of competitive private enterprise. The Alabama Broadband Initiative will also need extremely widespread community support and participation – not only to spur the physical build-out of Broadband throughout the state, but, equally important, to help people who are new to Broadband, to learn how to use this new tool to pursue a better, fuller, richer, more satisfying way of life.

Many of the interviewees viewed Alabama as being in a tough competitive economic race against other states, and even against certain nations. A question of urgency was thus raised, in addition to: "Does Alabama need to do this?" That question is: "How ***soon*** does Alabama need to do this?" If Alabama takes enough action soon enough, the Broadband movement could gain self-reinforcing momentum and become essentially irreversible – and successful. However, if Alabama falls behind in the march of Broadband progress across the world, it might be extremely difficult to catch up later.

Four Elements of the ConnectingALABAMA Broadband Strategic Vision

The following four elements form the basic structure of this strategic vision report:

Alabama's Assets – These are the human, cultural, economic, social, political, technological, environmental, or other advantages present in Alabama in 2009 that can be ***leveraged*** in pursuit of strategic objectives, including the future deployment and use of Broadband.

Driving Forces of Change – These are the big-picture demographic, environmental, economic, technological, political, or other trends that ***frame*** future options in Alabama. To a considerable extent, these forces will impact Alabama's future regardless of choices made by the state's citizens or leaders. However, there are also a number of ways for Alabama's leaders and citizens to assert their initiative, and shape these big-picture forces so as to leverage them toward positive ends and away from negative ends.

Achievable Possibilities – These are changes in reality that Alabamians want to see over the next ten years. These changes are not certainties, but rather are statements of what ***can*** be achieved through the wider deployment of Broadband combined with effective planning, targeted action and serious joint effort.

Actions to Achieve Alabama's Possibilities – These are actions that Alabama's government, business, regional planning organizations, education, faith-based/community action organizations, and others ***should*** take in order to achieve the desired possibilities over the next ten years.

This report briefly summarizes the insights provided by one or more of the 21 individuals interviewed in Phase I of the visioning process. Many of these ideas represent significant consensus among most of the interviewees. Other ideas are "outliers" mentioned by only one or two interviewees. However, minority ideas often prove to be the best source of creativity, especially when subsequent discussion reveals, as it often does, that they actually represent consensus.

Alabama's Assets

Alabama is a special place and has special assets that can be leveraged by its decision-makers – public and private -- to support the beneficial deployment and use of Broadband.

State Executive Leadership

One important asset is the fact that Governor Riley has established statewide universal availability, affordable access and beneficial use of Broadband as one of his top leadership priorities. Through the creation of the Alabama Broadband Initiative and ConnectingALABAMA, he has created a state-level organizational framework for inclusive stakeholder participation to advance this critical priority for Alabama.

Broadband Champions in Private and Public Leadership

Another asset is that a growing number of leaders within business and government are focused on taking proactive steps to advance Alabama's future through improved availability and use of Broadband. Business and agricultural leaders --especially those with an international, and/or a technology focus -- are demanding that Alabama have a state-of-the art Broadband infrastructure to support their competitive position. Education and health care leaders point to high-speed communication connections as a necessity to meet needs in isolated rural communities and also to control costs. Governor Riley -- as well as a number of mayors, county commissioners, legislators and state agency heads -- are visible public-sector champions for the expanded availability and adoption of Broadband communications.

A Sense of Urgency

The current global economic recession creates a sense of urgency for initiatives aimed at making Alabama's economy strong and sustainable. Broadband is widely seen as a necessity to reverse economic decline and population loss in the many struggling rural communities hit hardest by the recession. With tighter public budgets, Broadband is also recognized as the most cost-effective means of meeting the state's critical education and health care challenges. Failure to address these challenges statewide puts at risk Alabama's past progress in positioning itself for a bright competitive future in agriculture, bio-technology, aeronautics, alternative energy, tourism and other key sectors. A further sense of urgency is raised by an anxiety that the next Alabama Governor might not give high priority to the continued deployment, adoption and use of Broadband.

Available Federal Grants and Loans for Broadband

More than seven billion dollars of one-shot federal grants and low-interest loans are available to states specifically to support innovative initiatives that advance the availability and use of Broadband services. Additional billions of federal grants and loans are available for dedicated purposes such as e-health, distance education, public safety, and emergency services. In part because of the effective work of the Alabama Broadband Initiative and ConnectingALABAMA, the state is currently well positioned to submit competitive proposals to receive its fair share of appropriated federal funds – including, in some cases, the possibility of joint submissions with neighboring states.

Statewide Leadership Organizations

Alabama has a number of statewide leadership organizations that are well connected throughout the entire state. These organizations deal with a wide range of challenges important to improving the overall economic vitality and quality of life in the state -- such as agriculture, commerce, county affairs, education, faith-based affairs, health care, libraries, municipal affairs, and many others. Statewide leadership organizations such as these are well positioned to engage constituents throughout the state in the development and implementation of the Alabama Broadband Initiative.

Statewide Regional Planning and Community Action Networks

Alabama has several well-established regional planning and community action networks, such as twelve Regional Councils of Governments, ten Alabama Workforce Development Regions, eight Alabama Rural Action Commissions, the Alabama Black Belt Commission, and an extensive higher education network. These well-established regional networks are important assets to help reach out to Alabama's diverse communities to help create awareness of the opportunities enabled through Broadband, as well as to support collaborative initiatives across communities to advance Broadband availability and use.

Statewide Technical Assistance Networks

Alabama has a rich array of resources potentially available to support implementation of strategic regional and local action initiatives. These resources include state and federal government agencies, regional planning organizations, higher education and others.

Environmental, Natural Resource and Community Advantages

To achieve sustainable and vital communities, there must be compelling reasons for people to want to live, work, or start a business in Alabama. Fortunately, Alabama has an abundance of such attractions. Much of the state has special natural advantages in the form of beaches, rivers, forests, mountains, and wildlife, as well as a comfortable climate. Communities throughout the state offer a culture of warm hospitality and genuine friendliness. Taxes and the cost of living are moderate, and crime rates are low. These are the types of assets that motivate people to stay in Alabama, and attract others to come home again, -- once adequate job opportunities, quality education, and quality health care become available – and Broadband can help make all this happen.

Culture of Personal Responsibility to Family and Community

Success in achieving beneficial possibilities for Alabama through Broadband often depends on the willingness of individuals to take initiatives to make life better for their families, their neighbors, and their community. Fortunately, there is a cultural pattern of personal responsibility throughout Alabama that is manifest in people who are willing to step forward and volunteer to support initiatives to improve the community well-being.

Driving Forces of Change

As we visualize the future of Alabama in the Age of Broadband the following Driving Forces are seen as crucial.

Ubiquitous Cell Phone Ownership Will Help Drive Widespread Public Interest in Broadband Services

Today in 2009, most families in Alabama have at least one cell phone. Today, thousands of Alabamians are using their cell phones in many ways -- for example, in programming basic functions, developing contact lists, or saving and sending pictures. They have thus have had a basic experience in using digital technology, and in enjoying its benefits. Moving into the future, all cell phones will have the capability of receiving and sending data -- including e-mail, video, scheduling, searching the Web, and so forth. Most will operate at high speeds. Almost inevitably, many Alabamians who started with cell phones will develop an interest in purchasing and using these newer cell phones, as well as computers and other digital devices, in order to further improve the quality of their lives.

Tight Government Budgets Will Drive Interest in Technologies that Can Reduce the Cost of Providing Public Services

The global economic crisis of 2008-09 has profound implications for federal, state and local government budgets. This crisis will cause public decision-makers to be acutely interested in supporting expanded Broadband services in order to reduce the net long-term cost of providing virtually every service people expect from their government -- including public safety, high-quality affordable health care, education at all levels, and infrastructure maintenance. Modest investments in such applications in the near term could result in huge net operating economies in the longer term.

Government Insistence on Greater Transparency Will Force the Widespread Use of Broadband in Public Affairs

There has recently emerged a powerful tendency for governments at all levels to mandate greater transparency of a kind that practically requires use of on-line information systems. This will essentially require many organizations and individual citizens to have access to Broadband in order to deal effectively with government agencies. As Alabamians use the Internet for more and more such mandated purposes, they will naturally develop competence and comfort in using the Internet in other aspects of their daily lives.

Broadband Access Will Increasingly Become a "Necessity" for Economic and Social Inclusion

Over the next ten years, access to Broadband will become a necessity for economic and social inclusion, much like access to water, energy, transportation or housing. Individuals and communities lacking access to Broadband will find themselves isolated from economic, health care, educational, and other opportunities. As millions of Alabamians realize that Broadband is becoming a necessity, they will be motivated to develop at least minimal digital skills, and to subscribe to at least minimal Broadband service.

As Baby Boomers Retire, a Younger Generation of Leaders Will Push for Expanded Use of Broadband

Many of the current leadership in both the public and private sector are members of the "baby boom" generation, and are expected to retire over the next ten years, yielding many leadership positions to the upcoming generation of Alabamians who are already generally much more technology-savvy, and significantly more interested in how digital information technologies can be utilized to make life better for them, their families, and their communities. As this younger generation moves into leadership positions, they are likely to press hard to expand and improve the use of Broadband to achieve both public and private objectives. Moreover, this younger generation, having been inducted naturally into the Age of Broadband through their schools and peer groups, are more likely to possess creative ideas about how Alabama can change and progress. Consequently they are less likely to settle simply for the status quo, on grounds that "we have always done it this way."

Communication Technologies Will Evolve to Become More User-Friendly

History shows that information technologies evolve continuously and often very rapidly. The cell phone illustrates a pattern of technology development that almost certainly will be replicated with computer and Broadband devices and services. As more people adopt a given technology, this will stimulate innovation by service providers to give consumers more choices and lower costs. Emerging technologies such as voice recognition and language translation will make Broadband-enabled digital devices much easier to use. Portable hand-held personal digital assistants will become commonplace, and capable of handling data, voice and video communication, thus greatly increasing an ordinary person's ability to obtain reliable information on thousands of subjects.

Economic Globalization Will Drive Interest in the Use of Broadband to Strengthen Business Competitiveness

International companies have for some time been investing heavily in Alabama. Many of the state's products and services are sold internationally. The Defense Base Closure and Realignment Commission (BRAC) continues to expand military investment in Alabama, adding to the state's connections to the international world. Economic globalization will continue to impact Alabama over the next ten years. Businesses dependent on global markets and suppliers will demand state-of-the-art Broadband to support their operations, and communities lacking such facilities will be left out.

Science, Technology, Mathematics and Other Information Age Skills Will Be in Demand

Biotechnology, aeronautics, advanced manufacturing and advanced agriculture are all growth sectors in Alabama. All of these industries, and others like them, require a workforce that is highly skilled in the areas of science, technology, mathematics, and knowledge management. There will be a growing demand for Alabama's educational institutions to respond to this need. As a result of this demand there will be pressures for wider utilization of Broadband at every step of the educational process.

Climate Change Will Drive Interest in Broadband as a Means of Reducing Fossil Fuel Usage and Transportation Costs

People's awareness of the reality of climate change has in turn raised awareness of the need to reduce emissions from the use of fossil fuels, and of the prospect that transportation using fossil fuels will become and remain expensive. Both of these concerns will increase the demand for Broadband. For example, expanded telecommuting, e-health, and distance education are all Broadband-enabled strategies that will be driven in part by the need to reduce automobile travel.

Alabama's Achievable Possibilities

This section examines the outcomes for the people of Alabama that are judged to be possible and achievable by ***no later than*** 2020. It is likely that significant progress toward most if not all of these possibilities can be achieved within the next few years.

Broadband Can Be Universal and Convenient

Broadband Services Can Be Accessible to All Alabamians

- Multiple modes of service (DSL, cable, powerline, fiber-optic, fixed and mobile wireless, etc.) will be available throughout Alabama, depending on the situation of each community.
- The bandwidth made available in these systems will have sufficient capacity to evolve to meet future demands, which are expected to be more intensive as time passes.
- Services will be scalable, so that the individual consumer pays only for the services they want and can afford.
- Innovative public-private partnerships will often provide Broadband services that neither the public nor the private sector could provide by itself.

Broadband Services Can Be Affordable

- The cost of digital communication equipment and service will keep going down as technology goes forward. This simple basic fact has revolutionary potential.

- Competition among private providers can help keep the quality of service high, and prices low.

- Many Alabamian families will be able to afford more than one digital device -- desktop, laptop, personal digital assistant, cell phone, etc. -- to meet multiple needs in a coordinated way.

State and Local Governments Can Improve Services in Many Ways

Government Services Can Be Delivered at Lower Cost

Where Broadband connectivity is available throughout a municipality or county, there are many opportunities to utilize Broadband connections to reduce the cost of providing government services. Examples include paperless reports, wireless meter reading, electronic billing, and the routing of service vehicles and equipment.

Government Business Can Be Made More Transparent to the Citizenry

At the state, county and local levels, public records can be digitally recorded and made available in the form of publicly accessible, searchable data bases for use by citizens desiring specific information on actual or proposed legislation or regulation. This transparency can greatly encourage the citizenry to be informed and active.

Better Public-Private Cooperation Can Be Facilitated

Just as Broadband makes possible the efficient and effective management of public agencies, so it makes easier the partnering between government officials and the leaders and members of private organizations of all kinds -- civic, occupational, faith-based, recreational, and veterans' organizations, and so forth.

Public Safety Can Be Better Protected

Law Enforcement and Public Safety Can Be More Effective and Efficient

- Digital cameras can be placed in threatened areas for early detection of suspicious or criminal behavior.

- Broadband connectivity can enable citizens to instantly report fires or crimes to all relevant authorities.

- Expanded availability and use of video-conferencing and Internet resources can improve the efficiency and effectiveness of Alabama's judicial system.

Alabama Can Be Better Prepared to Respond to Disasters

- Interoperable contact can be maintained 24/7 among all law enforcement and emergency response authorities throughout the state and beyond.

- Immediate communication with schools and other places where the public gathers can prevent loss of life.

- Medical and other resources can be quickly and effectively mobilized to respond to local situations caused by a disaster.

Repeat Criminal Offenders Can Be Reduced

Utilizing distance education technologies to prepare incarcerated prisoners with skills needed to obtain jobs after they have served their sentence, can reduce the potential for repeat crime.

Alabamians Can Better Manage Personal Finances

People Can Use Broadband to Buy and Sell Things Advantageously

Using Broadband, Alabamians can save money by comparison-shopping on-line for bargains they otherwise would never have known about. They can also sell possessions they no longer need, taking advantage of various on-line selling services. This way, they can not only get a better deal, but also avoid many shopping trips -- thus wasting less time and less gasoline, and creating less pollution and less highway congestion.

Financial Transactions Can Be Safely Handled at a Distance

Alabamians can use on-line financial transaction services that are reliably encrypted and otherwise safe and secure. This enables economic interaction with people at a distance, enlarges markets for Alabama products, and promotes overall economic development throughout the state.

Alabamians Can Qualify Themselves for Better Job Opportunities

Training Programs for Technology Skills Can Be Provided at a Distance

Public entities such as schools, two-and four-year colleges, and state workforce development agencies -- as well as private entities such as businesses and community action organizations, can be valuable sources of technology skills training. Through the use of Broadband, Alabamians can have additional options to access these training programs at home or in their local community.

Alabamians Can Become More Technology-Savvy to Prepare for New Kinds of Jobs

Through similar training processes, Alabama's workers can prepare themselves for success in the 21st century economy and society, by acquiring appropriate skills such as:

- Work skills needed to maintain Alabama's competitive edge.
- Skills needed to prepare for the successful use of next-generation technologies.
- Language, social and cultural skills needed to function effectively in the global workplace.

Alabamians Can Secure Telecommuting Jobs

In locations that have had the foresight to install reliable Broadband service, Alabamians who prefer to work at or close to home can often qualify for telecommuting jobs in nearby call centers, design enterprises, accounting firms, and so forth.

Alabamian Entrepreneurs Can Gain Competitive Advantages

Business Efficiencies Can Be Increased

Like the telegraph and telephone before it, Broadband communication will evolve to the point of becoming a useful business asset in a hundred ways – so much so that, by 2020, access, affordability, and skill in the use of Broadband will be seen as a business necessity, not just a convenience.

New Start-up Businesses Can Be Advantaged

Individuals and businesses, including thousands previously left behind, will be better connected to new opportunities made available through Broadband technologies. An example would be small start-ups in rural locations that would serve as reliable "feeder" facilities supplying parts to the major automobile, steel, and other factories located within a reasonable trucking distance. Reliable, constant Broadband connectivity is crucial in dealing with these large factories, especially those that use a "just in time" mode of production.

Outside Investors Can Be Attracted More Effectively

Alabama and its various municipalities and communities can offer the right set of incentives to attract and retain investment by outside investors. These incentives will invariably include the availability of reliable Broadband connectivity, and of a local workforce trained in its use, and ready to be trained further.

Tourism Can Be Promoted More Effectively

Alabama has a rich history, including leadership in the civil rights movement, the birth of the confederacy, and a cultural diversity that has created a unique blend of arts and history. In addition, Alabama has many creative craftspeople and artists. This unique blend of special features, combined with beautiful beaches, pristine parks and natural areas, make Alabama an attractive tourist destination. Broadband can be used in tourism promotion efforts.

Alabamian Farmers and Processors Can Improve Their Profitability

Farmers and Processors Can Operate More Efficiently and Effectively

- Competitiveness can be improved.
- Product lines can be diversified.
- Markets throughout the nation and the world can be accessed.
- Understanding of agriculture among the general public and decision-makers can be improved.

Alabama Agricultural Products Can Be Marketed More Widely and Effectively

Knowing how much different markets will pay for a given commodity, on a given day, can help producers find the best price for commodities.

Expert Advisory Help Can Be Obtained by Utilizing Video and Data Connections

- Agricultural producers can be in nearly instant Broadband contact with experts -- such as university or extension specialists -- for quick consultation on how to deal with a problem soon after it arises.

- Livestock producers can obtain veterinarian services and critical animal health diagnostic information utilizing remote technologies.

- Agricultural producers can digitally transmit data from crop sensors, automatically and continuously, day by day, to research stations where experts can provide timely advice as needed.

- Instant digital contact with experts can be especially helpful in cases where the farmer is trying out a new crop, such as by using a catfish pond to grow algae, or by growing alternative crops such as switch grass or sugar cane, for use as biofuel.

On-Farm Productivity Can Be Improved

- The use of automatic digital sensors enabling the continuous reporting of water and soil conditions can greatly aid actions to conserve these vital resources.

- In Alabama's large poultry industry, through 24/7 digital monitoring, the temperature, air flow, bird health and other conditions in a poultry house can be maintained at optimal levels, enhancing productivity and avoiding large losses from death of birds.

The Health Care System Can Better Serve Alabamians in Many Ways

Medical Care Can Be Better Coordinated by Local "Medical Home" Teams

Broadband high-speed connections of data, voice and video can greatly enhance the medical care provided by Alabama's "Medical Home" teams of care-givers, each led by a primary care

doctor, and assisted by various other medical specialists, all robustly connected to the patient's database, and to each other. This constant connectivity can enable all members of a Medical Home team to respond to emergencies almost instantly, and thus save lives and reduce pressure on emergency room facilities.

New Clinical Services Can Be Delivered Using E-Health Connectivity

Alabama's "Medical Home" health care system can use Broadband technology, complete with cameras and a robust imaging capacity, to improve diagnostic, therapeutic, and wellness services throughout the state, and bring quality care and counseling to thousands who previously did not have it. E-health technologies – both for tele-medicine and for digitized medical records -- can greatly expand and improve access to health care in medically underserved rural locations lacking doctors with the specialties needed. Various medical tests can be administered locally, with data e-reported to a distant laboratory, and test results then received back within minutes. E-psychiatric interviewing and therapy can be arranged. Many of these creative uses of Broadband are already in limited use in some localities. Even e-robotic surgery will be possible in due course.

Health Care and Education Can be Delivered through the School System

School nurses can be e-connected with laboratories and specialist clinicians at a distance, thus improving service and helping to provide health awareness and good health practices among the upcoming generation, starting at the pre-school level. Broadband will also make possible a "hot line" to identify and track illnesses that occur in a school that might provide clues as to a possible pandemic. There can be better care for each young person if the care plan for her or him is shared among all those who are responsible for caring for that young person, including the school nurse, the medical home staff, and the parents.

People Can More Proactively Monitor and Manage Their Personal Wellness

The ability to monitor a patient's health data 24/7, and to provide basic diagnostic and therapeutic recommendations directly to the patient in their home, can be a vital way for Medical Homes to expand access to quality health care in medically underserved rural locations, and also to help reduce overall health care costs.

E-health Can Especially Help Seniors

The use of various health monitoring devices in the home, which Broadband makes possible and affordable, will be especially helpful to seniors who can monitor their own health on a daily basis, transmit the results electronically to their Medical Home, and receive appropriate medical care and wellness counseling. This can help seniors to continue living independently in their homes. Similar service at-a-distance can be offered to seniors who have opted to live in assisted-living homes.

Medical Errors Can Be Reduced

Use of a standardized and digitized records system, with medical records available to any authorized physician or medical technician, can prevent many medical errors, especially in emergencies or other situations where the patient is being treated by a doctor or technician new to the case. Medical records often take the form of transcriptions of dictated notes; and there are plenty of smaller Alabama towns that would willingly host medical transcription businesses via tele-commuting arrangements.

Educational Institutions and Public Libraries Can Powerfully Serve Alabamians

Public Libraries and Community Centers Can Provide Access to, and Familiarity with, Broadband

In 2009, thousands of Alabamians remained unconnected to Broadband, in part because they were not fully aware of all the advantages that Broadband could give them, to improve the quality of their lives. Public libraries and community centers can serve as natural meeting places where people lacking computers can learn the skills needed to realize the benefits that Broadband offers to themselves, their families, or their businesses -- after which it is likely that thousands of them will become subscribers.

Educational Isolation Can Be Reduced

Today in 2009, Alabama's more isolated rural schools are often challenged in securing resources needed to buy books, modernize classrooms, and attract good teachers. However, by using Broadband, an Alabamian living far from the nearest college can still have access to the best education available from anywhere in the state, or perhaps anywhere in the world.

Broadband can also be used in the reverse direction, to help Alabamians living in larger cities to develop a greater awareness and appreciation of the history, economy, traditions, needs and lifestyle of rural and small-town Alabamians.

Richer Curriculums Can Be Offered

Alabama's K-12 schools and two- and four-year colleges can provide a continually updated array of skills-training courses geared to the needs of local businesses for employees with particular skills, such as in science, technology, or mathematics. Through the use of video and on-line media, these colleges can facilitate the sharing of the best available instructional resources, and thus strengthen the depth of educational offerings available throughout the state's entire higher education network.

Self-Paced and Lifelong Learning Can Be Facilitated

Broadband can allow the individual to study without leaving home, about subjects of their own choice, proceeding at their own pace, for as long as they wish. Such self-motivated study can improve the individual's immediate job prospects, promote their longer-range professional prospects, inform their role as citizen, and enrich their lives.

Multicultural Understanding Can Be Enhanced

The Internet makes possible efficient connectivity with the entire world at minimal cost. Instant, comprehensive searches are now available, on almost any subject, often with reasonably accurate computer-assisted translation. High-speed Broadband Internet thus provides vast new opportunities for Alabamians to become familiar with events anywhere in the world, and to maintain friendships and business relationships anywhere.

Family Life in Alabama Can Be Strengthened and Enriched

Younger Family Members Can Teach Their Elders How to Use Broadband

History shows clearly that children usually learn digital skills much more quickly than their seniors -- especially when the youngsters are exposed to those skills systematically, day after day, as in school. Youngsters of 10 or 15 today are often capable of using the Internet for e-mail, and Web browsing and searching, long before their parents or grandparents have learned even the basics. Thousands of young Alabamians are thus capable of offering informal training

to their seniors. This factor alone is expected to dramatically speed up skill building of Alabama's adult population in the use of digital tools.

Children Can Be Protected Against Inappropriate Content

Numerous computer programs and routines can help parents filter out Internet content that would be inappropriate for their children.

Family Ties Can Be Maintained and Deepened

Broadband enables family members to be conveniently in touch with each other anywhere in the world. Writing an email letter is much cheaper and more convenient than using paper and postage. Voice and video contact is also possible, and can enable Alabamians to be in close touch with sons and daughters in the military, in the US or overseas. Broadband may also be utilized, in a highly user-friendly way, to research one's family tree on the Web.

Strategic Actions to Achieve Alabama's Possibilities

The following Actions are opportunities to help achieve in reality the various desirable possibilities listed above – especially if there are dedicated "champions" of each desirable change who are committed to ***continue*** in their strategic actions from year to year, and even from one political administration to the next.

Expand Access to Broadband Services in All Areas of Alabama

Apply for Available Federal Grants to Help Finance the Deployment of Needed Additional Broadband Services

In early 2009, Congress appropriated 7.2 billion dollars through the American Economic Recovery and Reinvestment Act (ARRA), specifically for use in initiatives to expand Broadband access and use in unserved and underserved areas. In addition, the ARRA provides funding for broadband projects that seek to establish or improve access for education, health care, public safety and vulnerable populations. The Alabama state government should work with applicants to ensure that Alabama receives its fair share of available federal dollars to improve the availability of Broadband services in areas where the current infrastructure is unavailable, unaffordable, or is inadequate to meet local needs.

Ensure Regional Planning Includes Broadband as Critical Infrastructure Along with Energy, Water, Sewer, and Transportation.

Alabama's state government already supports on-going regional planning efforts in a variety of forums, such as the Alabama Regional Planning Councils, the Alabama Communities of Excellence Program, the Alabama Rural Action Commissions, the Alabama Black Belt Action Commission, and the Alabama Workforce Development Councils. Each of these on-going regional planning initiatives should explicitly include Broadband as a central planning element.

Encourage Public Sector Broadband Uses to Create Incentives for Private Sector Broadband Investment.

City, county and state governments should provide leadership in improving the prospects for feasible Broadband investment by becoming an "anchor tenant" -- contracting through competitive bidding with alternative Broadband providers to meet community needs. Local governments and regional planning organizations should identify barriers to Broadband deployment (right-of-way costs, need for grants or loans, etc.) and advocate for solutions. State government should consider opportunities to promote Broadband connections to public institutions such as libraries, schools, hospitals, public safety answering points (PASPs); first responders (such as police, fire and EMS); and judicial offices -- as a means to encourage more Broadband infrastructure investment to support needs in unserved and underserved communities.

Identify and Educate the Public on the Bandwidths Required to Achieve Various Desired Broadband Uses

A matrix that compares desired community, business and personal Broadband objectives with the telecommunications infrastructure capabilities required to achieve those objectives should be developed for all regions of the state. For example, vastly less bandwidth and reliability are needed to support e-mail communications among family members than would be required to support a surgical operation over Broadband. With a better understanding of what objectives can be achieved through existing telecommunications infrastructure, and of what enhancements to that infrastructure are required to support each desired community and business objective, appropriate local actions to expand access can be more effectively focused.

Create Publicly Available Computer Access Locations Convenient to the Local Community

Regional leadership initiatives should be established to support community-based organizations with information and funding to establish community technology access centers in places where people naturally gather. Examples include libraries, community centers, schools, medical clinics, and churches. In some cases, vendors and others can be encouraged to donate used, but still usable, computer equipment to such local centers. Regional leadership should also identify any public policy barriers to the creation of community technology access centers, and advocate solutions.

Enhance Digital Skills and Awareness in Using Digital Technology

Offer Public Computer and Digital Skills Training Through Partnerships with Two-Year Colleges, Faith-Based and Community Action Organizations

Free or low-cost classes should be made available to help community members lacking digital experience to gain necessary skills. In particular, two-year colleges -- as a part of their workforce development mission -- in partnership with faith-based/community action organizations should be encouraged and supported to offer training programs in local communities. In addition to classes, structured initiatives should be considered which engage technology-savvy youth as mentors to help older community members learn basic computer and digital skills.

Educate Communities About Beneficial Broadband Opportunities

By all available means, state and local governments should find ways to educate the public regarding the numerous ways Broadband can help them improve their lives. Alabama's higher education network, regional planning organizations, and state agencies should develop outreach programs to educate communities about Broadband opportunities. This could include community workshops, webinars, leadership training programs, and the demonstration of Broadband using a specially equipped van.

Promote Relevant On-Line Content

Provide Parents with Knowledge and Tools to Protect Children From Undesirable On-Line Content

Children should be protected from undesirable content by providing their parents or guardians with information on possible technologies to filter Internet content -- and also with knowledge about how to appropriately supervise and manage their children's computer use. Faith-based groups, local schools, parent-teacher associations, service clubs and fraternity/sorority service projects have the potential to take leadership in this important form of community education.

Develop On-Line Data Bases to Support Information Sharing and Regional Collaboration

Regional planning organizations should encourage the exchange of ideas among citizens through the development of regional on-line data bases that can that overcome the limitations of institutional silos, and lead to creative collaboration among agencies in serving the citizenry. These data bases should be capable of presenting information in a geo-spatial format, providing opportunities for interactive discussions, and supporting community scheduling.

Utilize Social Networking Sites to Build Understanding and Beneficial Collaboration Among Alabama's Rural and Urban Communities

Use of social networking sites such as Facebook, Twitter or Blogging should be encouraged as a means to promote sharing of ideas and issues among different regions of Alabama. For example, Alabama agriculture stakeholders should be encouraged and supported in the use of modern interactive information technology tools such as the social media to introduce and explain agriculture to the general population, and to educate public decision-makers on the needs of agriculture. Use of these media should be encouraged in Alabama school classrooms to introduce students to careers in agriculture, and to promote understanding of agricultural values and processes.

Create New Beneficial Uses of Broadband Communications for Health

Engage Rural Health Professionals in Creating Solutions That Address Obstacles to E-health

A careful assessment of current barriers to adopting e-health, along with state leadership in creating solutions, can improve the potential for expanded beneficial uses of Broadband to strengthen health care. Examples of potential barriers include: insurance payment systems that discourage use of e-health, lack of needed equipment, inadequate connectivity, overstretched medical personnel, personnel who resist change, local "turf" issues, and electronic medical record systems not compatible with local realities.

Encourage Use of Information Technologies for Health and Wellness Education

Research and innovative applications of information technologies to support health and wellness education should be encouraged – such as early childhood education, mental health care, nutritional education, and patient-specific databases supporting better diagnosis and treatment. In some cases these opportunities are already being pursued, but could be enhanced by careful use of Broadband high-speed Internet. The Alabama state government should engage universities, hospitals, doctors, insurance companies, the business community, and others to identify and advance promising opportunities.

Support Demonstrations of e-Health Technologies for Critical Applications

The Alabama state government should engage universities, medical equipment manufacturers, hospitals, doctors and insurance companies to develop and implement regional demonstration projects that advance home-based health care. The state government should also convene private-sector electronic medical record vendors, university experts, and health care industry representatives to implement effective demonstrations of meaningful uses of interoperable health information technology systems for such purposes as improving mental health, reducing the use of drugs, etc.

Create New Beneficial Uses of Broadband for Education

Encourage Use of Video and Internet Technologies in Rural Schools to Access World Class Instructional Resources

Local business leadership should be encouraged to join teachers, school administrators and school boards to identify and address any barriers to the use of distance education. Continuing education should be provided to help those teachers who are less experienced in use of video and on-line teaching tools to learn how to effectively utilize distance education resources.

Expand Rural Access to Life-Long Learning Through Improved Broadband Connections to Two-Year and Four-Year Degree Programs

Through Broadband connections to the home, rural residents can gain better access to education, while also avoiding the cost, time and safety risk of travelling to a community college or university campus. Local business leaders and the colleges should continue developing a comprehensive strategy for the use of technology to improve rural access to education and training, especially taking advantage of many expected technological improvements in the speed and capacity of desktop, laptop and hand-held digital devices. This will help the citizenry – young and old -- get what they need from the educational system as a whole, and help break down the "silo mentality" still found among some parts of the state's higher education system.

Utilize Video Forums to Support Dialog Between Educators and Business Leaders to Improve Relevance of Classroom Curriculum for Future Workforce Needs.

Regional leadership should implement video forums supporting dialog among business leaders and educators to ensure that the state's educational system turns out students with the skills required for a productive Alabama economy. This dialog should include not only anticipated skill needs, but also potential public policy reforms that would better enable responsive workforce development solutions at the regional level.

Leverage Video and Web-Media to Provide Opportunities for Youth and Adults to Gain Knowledge of the World's Diverse Cultures

Schools, community colleges and universities should present opportunities to expose Alabama's students to various cultures around the world. This can include organized cultural exchanges, or

the use of video-conferencing to bring invited presentations from international CEOs and business experts to rural Alabama schools. Teachers should be provided with continuing education and resources to incorporate expanded global perspectives into the classroom.

Apply Technology to Strengthen Parental Involvement in Their Children's Education

Alabama schools should develop on-line tools to connect with families at home. For example, password-protected web sites can enable parents to monitor their children's grades, homework assignments, attendance, and communication with teachers. More advanced applications might include the use of personal video devices enabling parents to observe what their child is doing in school in real time.

Create New Beneficial Uses of Broadband for Public Safety

Advance Communications System Interoperability to Strengthen Alabama's Disaster Response Capability

During recent Hurricanes Katrina and Ivan, Alabama demonstrated a disaster response system that has been widely recognized as superior. The state government should work with the public safety agencies and the private sector to migrate emergency communications systems to next generation Internet Protocol (IP)-enabled services that will allow for the use of voice, video, and data applications as well as enhance disaster response. An IP emergency communications platform allows for greater interoperability and portability of emergency response systems needed to better respond to major events such as hurricanes. Further, implementation of the next generation 9-1-1 will allow first responders and citizens to take advantage of technology advances that allow for the use of video and data services.

Leverage Community Broadband Systems to Strengthen Local Police Enforcement

Local Governments should be encouraged to explore opportunities to leverage Broadband communications to strengthen local police enforcement -- for example, by the strategic placement of video cameras to help reduce crime and enhance neighborhood safety. Community Broadband can also be utilized to enhance the effectiveness of neighborhood crime watch programs by encouraging local residents to report suspicious activities to police departments using cell phones or other on-line connections.

Enhance Community Safety Through Use of Broadband to Deliver Legal Services, Health Care, Distance Education and Training at Prison Sites.

The Alabama state Government should develop Broadband-enabled applications to support remote arraignments, e-health and prison guard training to enhance community safety. Every prisoner transport involves a risk of escape which could be avoided with advanced communications systems. Broadband can also be used to prepare prisoners for a more productive, law-abiding future. By deploying distance education systems, Alabama can better prepare inmates with workforce skills they will need to gain employment after serving their time, so they will be less likely to return to prison.

Promote New Beneficial Uses of Technology for Government

Identify and Provide Training on Local Government Best Practices in the Use of Information Technologies to Reduce Costs of Public Services and/or Improve Openness

Leadership training and assistance should be made available to local governments in pursuing grant funds to encourage innovative Broadband-enabled applications to cost-effectively meet local community needs and operate government in an open and transparent manner. Examples include wireless meter reading, electronic billing, paperless reports, or routing of city equipment. Records of public business should be made available on-line in an open and accessible format. Government use of the web provides many opportunities to build connections throughout the community, whether it is to register for swimming lessons at the public pool, pay a parking ticket, or access forms on-line. Such applications improve government efficiency and helps promote the adoption and use of Broadband technologies.

Support Local Government in Identifying and Securing Grant Funds to Implement Innovations in the Use of Technologies

State government and regional planning organizations should assist local governments in identifying and securing federal or other available grant funds to implement innovative new initiatives that use Broadband to improve the efficiency and/or openness of government.

Create New Beneficial Uses of Broadband for Economic Development

Identify Regional Business Sectors With the Best Potential to Successfully Demonstrate Innovative Uses of Broadband

Within each region, those business sectors should be identified, that have the resources and leadership potential to be successful in expanding innovative use of Broadband to improve competitiveness and profitability. Resources should be focused on these organizations as creative leaders and models for others in the region.

Develop Strategies to Enhance Rural Business Opportunities That Leverage Advantages Provided by Broadband Communication

Regional teams should be formed to inventory local assets and business opportunities that can be leveraged through the expanded utilization of Broadband. Such opportunities could include:

- Recruiting new businesses to supply major regional industries in the automotive, health care, aerospace, bio-medical, energy production, or other key sectors.
- Supporting the use of tele-work to increase the number of job opportunities available in rural Alabama.
- Encouraging more tourists to visit rural Alabama, by using on-line tools to market Alabama's scenic beauty, history, culture and arts.
- Engaging people who grew up in Alabama and then moved away, inviting them to return and start businesses in their home communities.

Assign Regional Teams to Create Strategies to Expand Use of Broadband to Improve On-Farm and Industry Profitability

Regional leadership teams involving state government, agriculture, and education should be formed to develop approaches to improve the competitive position of Alabama's agriculture through use of Broadband communications. Examples include: distance education supporting development of new income sources; on-farm access to veterinarian services; 24/7 access to animal health and disease data; and remote monitoring of conditions in poultry or hog houses. Regional teams should identify relevant opportunities, barriers to implementation, and ways to improve adoption.