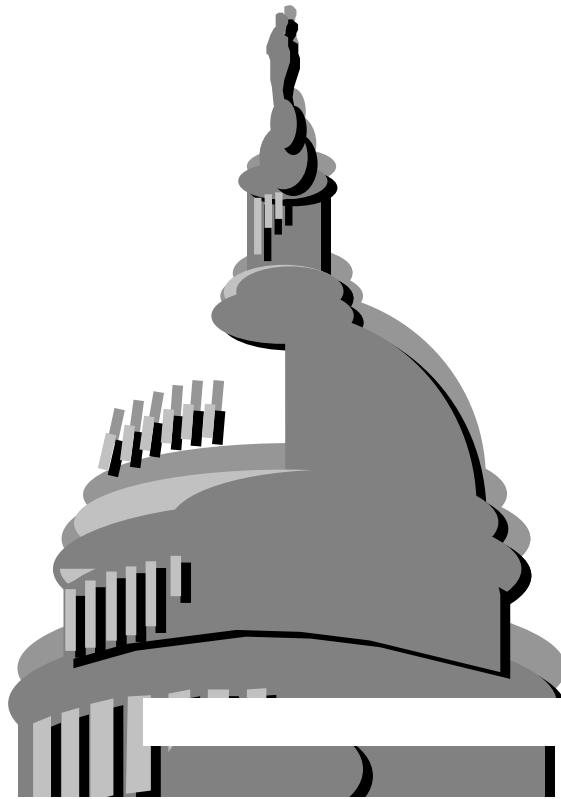


D R A F T

**Vision 2020:
Communications &
Technology**



D R A F T

Introduction

“Time” magazine recently featured Thomas Edison (1847 – 1931) on its cover, noting how he and his ideas changed our nation. Some say Edison was most responsible for the modern world as no one did more to shape the physical and cultural makeup of today’s civilization. Many say he was the most influential figure of the last millennium.

The purpose of this document is to provide policies and recommendations to unleash the next generation of Thomas Edisons, including:

- **Capital availability:** there were no government programs to help innovators like Edison. Capital availability for economic expansion is best addressed by the private banking and finance industry. Government should not be picking “winners” and “losers”
- **Competition:** in Edison’s day, mail was a major way to communicate; news came largely from newspapers; information from books. Technology has vastly changed each of these and competition has driven technology. While the major American institutions have restructured and refocused in response to world competition and shrinking resources, state government has not
- **Education:** we spend much more on education than in Edison’s day – more than \$26,000,000,000 a year in federal, state, and local taxes. Pennsylvania spends more on public education than 70 nations’ gross national products. Yet, employers, colleges, and universities complain high school graduates are not prepared for either higher education or the workforce
- **Government red tape:** would the light bulb, phonograph, motion picture projector, or any of Edison’s many other creations have been invented waiting for bureaucracy to give him approval? Government needs to get out of innovators’ way if we are to create and foster more consumer options
- **Health Care:** Edison revolutionized many aspects of his – and our – world. Technology is doing the same to today’s health care systems
- **Legal reform:** Edison holds a world record of 1,093 patents for his inventions yet he did not have an army of attorneys?
- **Taxes:** in today’s world there are ongoing cries for innovators to pay their “fair share” to help feed the ever-growing government spending appetite. Wasn’t this country founded on opposition to taxes on stamps and tea?

Capital Availability

While there are examples where state financing programs have served as catalysts for communications and technology initiatives, there are too many separate programs and administrative procedures. This makes state programs too cumbersome and costly – especially in the pursuit of venture capital.

The fractured efforts across governments (state and local) too often result in government competing with the private market rather than partnering with or relying upon private enterprises. This is especially apparent with “last mile” connectivity in bringing advanced services to underserved areas.

Pennsylvania needs a communications and technology policy that focuses on innovation to drive economic growth. The Commonwealth needs to be particularly sensitive and responsive to the needs of (growing) high tech companies.

Before government begins any communications or technology initiative, it should first answer the question: if you build it, will they use it? More importantly, will they pay for it? Taxpayers should not be expected to subsidize initiatives that are not sustainable.

Unfortunately, such questions were not always asked or answered in using federal stimulus moneys under the American Recovery & Reinvestment Act (ARRA). This created many issues as to whether public tax moneys were being used to compete with private industry, whether projects will be sustainable after the stimulus moneys are gone, and if networks were overbuilt. Government must stop creating such issues.

Recommendations:

- Emphasize loan programs over state grants
- Combine and decentralize existing state loan programs
- Independently assess all existing economic and community development programs to determine effectiveness and efficiency in meeting economic development opportunities
- Evaluate legislative requirements on existing economic development programs, including:
 - Matching requirements
 - Program measurements
 - Reporting requirements
 - Risk factors
 - Spending levels/caps
 - Timing
 - Require financial sustainability plans without additional or recurring tax moneys

- Better target communications and technology investments while leveraging new and existing public-private partnerships among companies, academic institutions, and economic development and industry organizations
- Offer tax incentives for large projects that require large amounts of capital investment

Competition

The preamble of the US Constitution lists core functions the federal government is to have: “We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America.”

Most of the US Constitution places restrictions on federal authority; state and local governments were to govern their affairs under their individual constitutions. All were empowered to pursue necessary and clearly defined public works.

Communications and technology have joined the list of infrastructure needs (in addition to roads, highways, and bridges). Mobility in the 21st Century depends upon the communications and technology infrastructures and Pennsylvania is blessed with many assets promoting communications and technology, including:

- Advance services offerings
- Wide availability of commercial broadband (residential broadband is also very strong)
- Fiber and wireless (cellular and fixed broadband)
- Health care systems (hospitals, academic institutions, medical schools) with advanced use of clinical information systems (some privately funded):
 - ClinicalConnect
 - Highmark HIE
 - Keystone HIE
 - Lehigh Valley HIE
 - NEPA HIE
 - SEPA HIE
 - Vale-U-Health RHIO
 - Vantage HIE
- A vibrant high-tech industrial base of Pennsylvania stakeholders who would like to see the Commonwealth continue to advance in technology
- Strong interest in high capacity initiatives (health IT and Higher Ed R&D)
- Private providers who have invested hundreds of millions of dollars (and in some cases, billions) in Pennsylvania
- Quality alternative local exchange carrier competitors
- An extremely strong research community spanning both the private and public sectors in areas such as biomedicine, materials, and cyberspace
- A competitive telecommunications environment with a good mix of aggressive regional companies, stable national companies, and niche providers
- An abundance of universities with international reputations for excellence – an asset many states envy

- World class research institutions that can and do serve as laboratories and springboards for new innovations and technologies
- Worldwide leaders in communications and technology

Unfortunately, Pennsylvania's technology infrastructure also faces many barriers – including a number of physical ones (i.e., our rural areas). The Commonwealth needs to ensure it's not erecting any legislative and/or regulatory barriers.

All of this begs the question: can technology be legislated? With the speed of technology and technological advancements, it may not be possible for either the Legislature or bureaucracy to keep pace. The private sector makes decisions based upon necessity while the public sector has a myriad of social and other considerations (which is why the buggy-whip industry persisted as cars were on the rise).

Government needs to recognize its policies can and do impact the market – both positively and negatively. For example, both national and state policies have emphasized rural access to overcome the physical limitations these areas suffer, which often results in narrower coverage. However, such policies could result in missed opportunities in urban areas where advances might be easier or more cost effective.

Recommendations:

- Recognize telecommunications initiatives are different for private and for-profit entities than government and education institutions and keep the latter from competing with the former (especially with public tax moneys)
 - Relieve private providers from deployment requirements if a competitive service is made available with public/government moneys
- Promote investments in hospitals and other healthcare providers – beginning with regional electronic exchanges of patient health information (with an eye toward a statewide exchange of medical records)
- Develop a comprehensive, coordinated statewide policy for nurturing and incentivizing business incubation and technology investments
- Change eminent domain law as it relates to Right of Way access
- Address Pennsylvania's infrastructure needs – especially transportation and utility networks
- Open access: allow companies that deploy their own lines to use them as they see fit
 - However, if publicly subsidized or government-owned (by a government entity or quasi-government agency), these assets would be open to all
- Make state-owned rights-of-way available

- Assess the level of duplication of efforts among county emergency networks

Education

Article III, Section 14 of Pennsylvania's Constitution states: "The General Assembly shall provide for the maintenance and support of a thorough and efficient system of public education to serve the needs of the Commonwealth."

Given the generosity of taxpayers in supporting public education (average of \$26 billion each year), our current system is neither thorough or efficient. Pennsylvania spends more on public education than 70 nations' gross national products. Yet, employers, colleges, and universities complain high school graduates are prepared for higher education or the workplace.

Pennsylvania ranks 12th highest in the nation in spending per student (\$12,541); average teachers' salaries are also 12th highest (\$58,124); average ACT scores of 2010 high school graduates ranked 21st, and Pennsylvania ranked 42nd in 2010 SAT scores.

Pennsylvania is also blessed with public and private colleges and universities that can (and do) serve as laboratories and springboards for new innovations and technologies.

Recommendations:

- Give parents and students choice
- Promote charter and cyber charter schools
- Encourage hybrid learning
- Insist on increased academic value for expenditures in support of post-secondary education
- Emphasize science, technology, engineering, and mathematics to prepare high school graduates for either the workforce or higher education

Government Red Tape

Businesses, educators, local governments, and universities agree: red tape is killing our ability to compete. For example:

- Bid processes vary: from consolidated decision-making to team-approach decision-making. Bidders need to have confidence the process is a level playing field, open, transparent, and accountable
 - Sole source/no-bid and emergency contracts have been particular sources of concern
- Requests for Proposals (RFPs) can cost more if it's difficult to determine what's being requested or the RFP does not clearly outline the scope of services or it does not reflect current technologies, state-of-the art methods, or existing levels of expertise
- Permitting requirements often take months (or longer) to fulfill
- Government-issued credit cards cost vendors double what privately-issued credit cards cost
- Government reporting requirements (especially the PUC)
- Limited state guidelines for right-of-way acquisitions and utility compliance

Customer demand is voracious and growing and will be increasingly difficult to meet. Consumers have an insatiable appetite for constant communication, information, and entertainment. In order to meet these ever-burgeoning needs in the future, today's networks must continue to evolve and grow. Pennsylvania's public policies should support an environment that is open to investment and innovation.

Of course, this environment includes both the public and private sectors. Without the partnership between private sector companies and government, we might not have seen innovations such as radar, the computer chip, and various pharmaceuticals. Opportunities for public-private partnerships should be actively explored.

Recommendations: To maximize broadband opportunities and make maximum use of tax moneys invested in broadband, the Commonwealth should adhere to the following principles:

- Provide broadband leadership at the state level through a system that promotes openness, transparency, and accountability
- Leverage existing public and private infrastructure
- Develop competitive bid processes

- Address public safety improvements through broadband deployment
- Provide appropriate incentives for investment in underserved and unserved regions
- Link with proven existing programs and stimulating demand through anchor tenants, schools, hospitals, and other community anchors
- Focus on the final leg of delivering services to a customer (“last mile”) for connecting residential broadband customers
- Update broadband mapping that is delivered immediately after collection (“real-time data”) and insisting on data transparency
- Establish meaningful reports and accountability for all projects
- Invest in state-of-the-art infrastructure
- Ensure that all projects receiving public tax money have proven, identifiable sustainability plans after the public tax money is used

Health Care

Technology has revolutionized health care and it will continue to do so in the future. Innovations in communications will continue to drive both interest and need to exchange information: patient records and other health information. However, it will take time for people to get comfortable with the technology and to make such exchanges of information seamless.

Health care facilities suffer from the inability to transmit and receive electronic data submissions due to a lack of interoperability platforms to exchange information (i.e., immunizations, quality reporting, etc.). In some instances, this has made it difficult for health care facilities to invest in network technologies as the return on investment is either difficult to determine or not readily apparent.

At the same time, many people are unaware of the health care services and options already available to them – even though community connectivity has become our entertainment, our marketplace, our classroom, and our city hall.

Fortunately, there is broad stakeholder interest among Pennsylvania's high tech community to advance the electronic sharing of patient records and other health information. The key will be finding the proper approach for our Commonwealth from among the models used by other states:

- **Centralized model:** the state acts as the health information organization to electronically share health records and other patient information. Examples of centralized models include: Connecticut, Delaware, Idaho, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, New Mexico, Rhode Island, Utah, Vermont, and Wisconsin
- **Decentralized model:** the state acts as a facilitator or convener to electronically share health records and other patient information by setting policies and/or regulations to create the environment for such sharing. Texas is an example of a decentralized model
- **Hybrid model:** have characteristics of both centralized and decentralized models – the state is not the health information organization but it does create a policy framework and is ultimately responsible for implementing the electronic sharing of information. Examples of hybrid models include: California, Illinois, Michigan, New Jersey, Oregon, Tennessee, and Washington

ATMs started slowly and evolved through a multitude of issues. Today, you can go to virtually any bank in the world and gain access to your moneys. The electronic exchange of patient records and other health information will likely follow a similar development: begin regionally and expand over time.

Security, of course, will be a major issue – particularly the electronic sharing of individual patient records. Fear of security breaches can and will slow development. However, technology should be viewed as a tool for exchanging information; existing paper records and faxes are currently shared and they too have security breaches.

As information is not constrained by state boundaries, federal moneys have been used to promote state exchanges. Unfortunately, there have been many issues with deadlines and other problems that have delayed implementation at state levels.

Recommendations:

- Promote the electronic exchange of health records, beginning with regional exchanges first (rather than statewide networks)
 - Immunizations
 - Prescriptions
 - Quality reporting
- Provide security for the electronic sharing of personal health records
- “Push” rather than “pull” information
- Provide protection for protected classes: HIV, etc.

Legal Reform

Each year, Pennsylvania innovators fall victim to countless lawsuits – many frivolous, some outright fraudulent. Such lawsuits drain both innovators and the overall economy. We all pay through higher consumer prices, higher taxes, limited services, and an overburdened courts system. Communications and technology security breaches often result in legal actions.

Who pays for such security breaches? Who's prosecuted? Who takes action against such crimes? What are the penalties? For many cyber crimes, the fines and penalties are less than the amount of moneys stolen. For example, a recent Malware breach netted \$50,000 in fines. However, the (illegal) proceeds netted at least ten times that amount – hardly a disincentive to not do the crime.

Fortunately, Pennsylvania has at least one important step to address its lawsuit abuse problems: enactment of the “Fair Share Act” to reform joint and several liability, the archaic legal doctrine where defendants with even just a small part of the blame are held liable for most or all of the damages simply because they are “deep pockets”.

Similar, additional reforms are needed.

Recommendations:

- **Protect Innocent Sellers:** ensure sellers who do not alter products are not liable for those products if they are found to be defective
- **Cap Non-Economic Damages** – amend Pennsylvania’s Constitution to change how damages for non-economic losses (i.e., pain and suffering, emotional distress, loss of consortium or companionship, and other intangible injuries) are awarded in liability cases
- **Limit Punitive Damages** – set strict standards for imposing punitive damages and/or limit the total amount of such damages (damages awarded to punish defendants after economic and non-economic damages are awarded)

Taxes

Few issues draw the attention of both existing businesses and those seeking to locate a business as do state business taxes. Tax bases and tax rates are areas states actively compete with one another to attract – and retain – businesses.

Pennsylvania's tax climate has been traditionally so uncompetitive as to make its established economic development programs ineffective. Businesses have resisted coming to Pennsylvania out of fear they will be “welcomed” with new or higher taxes. Even when incentive packages attract new businesses, these businesses too often leave soon after the incentives expire.

Unfortunately, the long-established method of passing state budgets all but guaranteed upward-spiraling budgets. This annual tribal rite called the “budget battle” was demonstrated by governors and/or legislators simply adding a percentage or more to budget items, depending upon votes and revenue projections.

Such archaic incrementalism is neither effective nor good government. Good public policy can only be developed after government's core principles and functions have been determined, beginning with the question: what is the proper role of government?

Once these functions are determined through public debate, government should only levy taxes and fees to the degree it is absolutely necessary to carry out these initiatives. Failure to do this will surely result in overspending and over taxation.

Such forethought has not been apparent in the imposition of communications and technology taxes as some (i.e., voice communications) pay approximately 20% in state taxes (Sales Tax, 911 charges, universal service fees, etc.) while others (i.e., data communications) pay seven cents in state taxes. This lack of consistency and inability to offer consumers clear explanations of what they are paying inevitably results in their making choices based upon cost.

At the same time, existing tax policies often promote social goals – sometimes without regard to the costs. Such “charity business” can impact both individual consumer choice and the overall marketplace. For example, a significant portion of land-line telephone bills pay for people who can't (or won't) pay their bills. As a result, land-line costs are higher than cell phones – a prime reason why land-lines are dying while cell phone usage continues to rise.

Such policies ultimately impact government itself as state tax revenues have fallen. Technology is constantly changing. Tax policy has not kept up.

According to a recent study, Pennsylvania ranks 8th highest in state taxes and fees on wireless telecommunications services. This high tax burden is a result of a decision in 2003 to apply the Commonwealth's Gross Receipts Tax (in addition to the Sales Tax) to wireless telecommunications services. Pennsylvania is one of only a few states in the nation to apply both taxes.

If Pennsylvania had a more competitive tax climate, it could attract not only communications and technology businesses, but other employers as well.

Recommendations:

- Complete the planned phase-out of the Capital Stock and Franchise Tax
- Reduce the Corporate Net Income (CNI) tax rate to 7.5% or lower
- Eliminate the Net Operating Loss (NOL) cap
- Establish a 100% Sales Factor for CNI apportionment purposes
- Tax credits for broadband investment in rural areas
- Tax credits for any broadband investment
- Increase the depreciation rules to encourage more/faster deployment of new technology