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ARIZONA TELECOMMUNICATIONS AND INFORMATION COUNCIL

Advanced Telecom and Broadband Deployment in Arizona

**ATIC Recommendations To The
Telecommunications Infrastructure Subcommittee
Governor's Council on Innovation and Technology**

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Telecommunications Recommendations

Living In a Networked World

Wired or wireless, with the proliferation of the Internet, mobile phones, communication devices, and wireless networks we are rapidly moving from a world of simple voice communication and isolated desktop computing to an interconnected world of networked communities and anytime/anywhere connectedness where everyone and everything is connected. The Network will operate everywhere, connecting people and devices seamlessly. -Living in a Networked World-Computer Systems Policy Project

Advanced Telecom and Broadband Deployment In Arizona

ATIC, the Arizona Telecommunications and Information Council, recommends that Arizona adopt a strategy to accelerate deployment of advanced telecommunications services and affordable broadband Internet access throughout the State. Broadband telecom is a **critical infrastructure** essential to the educational, economic, health, welfare, safety, and community development of Arizona's communities.

In the past three years Arizona has seen improvement in its broadband landscape. The greater metropolitan areas have an increasing number of both basic (200 Kb) and advanced (45 Mbps +) broadband options. The majority of rural communities now have access to **basic** broadband last-mile services such as cable modem, DSL, or wireless.

In the *Networked World*, it is **not enough to have just basic broadband service**, but many rural communities do not have the infrastructure to support advanced broadband deployment. Many rural Arizona communities still lack consistent coverage of **basic** broadband services and lack high capacity services. Of the rural communities that have services, many still face middle and last-mile deficits, experiencing higher service costs, making it unaffordable to end users. Many of these rural communities also experience a **lack of redundancy** to and from their community in order to maintain connectivity in the event of network casualties.

Because **advanced** broadband telecom services are either not consistently available, or is not affordable, communities in need of economic development and revitalization lack the necessary infrastructure to grow existing, and start/attract new, businesses. Not only are the infrastructure and services not available for the businesses that drive the local economies, they are also unavailable to residents, educational facilities, critical services such as police and fire, health care institutions and government offices. Therefore, many rural communities have limited access to advanced applications such as eLearning, telemedicine and e-Government. For them the digital divide just gets wider.

Primary Goals for this Effort

1. To accelerate deployment of a statewide advanced telecommunications infrastructure that will insure availability of advanced telecommunications services and affordable, high quality, high-speed Internet access throughout the State.
2. Develop voice, video and data applications that ride over the infrastructure that will link the Arizona community and support education, economic and community development.
3. Develop strategies to Bridge the Digital Divide

What is Broadband

The FCC defines broadband as an Internet connection at a speed of 200 kilobits per second (kbps) in either direction. The defined speed is the subject of much debate, and projected to increase over time. Some believe the best definition to be: The speed necessary to deliver content without testing the attention span of a 10-year old! Today many believe the definition should be 1Mbps.

Infrastructure Development Deficits

1. **Middle Mile:** There are two primary telecom services required to deploy broadband into a community – **Last Mile** and **Middle Mile**. **The Last Mile** is the Internet connection between the Internet service provider (ISP) and businesses, homes, schools, etc. The Middle Mile is the high capacity trunk lines and associated infrastructure that connect communities to the Internet backbone points-of-presence generally in Phoenix and Tucson, and, in some cases, Albuquerque or Los Angeles. Due to recent advancements in wireless, and other technologies, last mile deployment of broadband is becoming more cost-effective, even in rural and underserved areas of the state with distributed populations. **A number of companies have expressed interest in providing last mile service in these areas. In order to deploy their networks, and charge reasonable rates, they must have access to sufficient and reasonably priced middle-mile connections.** There is an estimated \$80-\$150M requirement to address the middle-mile infrastructure deficiencies in Arizona. If a common middle mile infrastructure is not available, at reasonable rates, communities, or last mile providers, must construct their own middle mile infrastructure. This increases the last mile costs that can significantly increase the end users monthly rates.
2. **Interoperability:** There is a lack interoperability (interconnection) between and among public and private providers of broadband services.
3. **Redundancy:** An additional problem is the **lack of redundancy** (more than one path for telecommunications transport) to/from a community in order to maintain connectivity in the event of network casualties. Many of Arizona’s rural communities are “fed” by a single route of fiber or microwave radio systems. Repeatedly, communities and even regions of the State have been “cut off” from the rest of the world due to damage inflicted on these single-point-of-failure routes. In the event of an emergency or disaster, most communities would have no backup system, unless cell/wireless phone companies had built their own parallel network into the community.

Barriers to Resolving Broadband Deployment

There are a number of barriers to resolve the broadband deployment issue:

1. **Lack of cooperation:** There is a lack of cooperation among the telecom providers and lack of public and private cooperation.
2. **Return on Investment:** Broadband deployment requires a balance between deployment costs, “affordable” monthly end user rates, and the length of time for the provider’s ROI, or Return on Investment. Today telecom providers are looking at an ROI requirement of 18 months - two years. Considering the cost of middle investment, this is often not a feasible model in rural and under served areas. Public and private organizations need some form of long term, low cost financing.
3. **Access to Rights-of-Way:** Federal, tribal, state and local Rights-of-Way issues such as multiple jurisdiction permitting, delayed application approvals, and unequal and prohibitive fees have been significant barriers and disincentives for deployment of services.
4. **Leadership, Planning and Coordination:** While there are a number telecom related initiatives underway in Arizona, there is no coordinated statewide strategy. Through coordination and planning Arizona would more effectively leverage existing resources and be eligible for millions of grant dollars to benefit community development.
5. **Funding:** There is a lack of funding mechanisms such as a Broadband Universal Service Fund, earmarked for broadband development in Arizona

Recommendations

Arizona needs to remove barriers and develop public policies and market-driven strategies that will encourage competition, private-sector investment in, and rapid deployment of advanced telecommunications services and affordable broadband Internet access throughout the State. Therefore, ATIC recommends the following initiatives:

1. **Adopt an Arizona definition of Broadband to be 1Mbps.** Although the FCC defines broadband as an Internet connection at a speed of 200 kilobits per second (kbps), 200 K is already inadequate for applications such as telemedicine and eLearning that have ever increasing bandwidth requirements.
2. **Establish a Broadband Authority** to provide incentives and low cost, long term financing to encourage private sector development of **redundant, middle mile and last mile telecom solutions** in the state, as done in other states. The Authority should be empowered to: issue bonds and notes; make loans and provide joint venture and partnership arrangements to broadband developers and broadband operators for financing or refinancing; enter into contracts for the lease or management of the infrastructure; and enter into joint venture and partnership arrangements with persons that will acquire, construct, develop, create, maintain, own, and operate the infrastructure. Owners of the network may be private, public or public/private partnerships. Any funding for public or public/private networks using state or federal funds must be open on an equal basis to all. We need to explore the use of existing financing mechanisms such as the Commerce and Economic Development Commission and the Greater Arizona Development Authority. Funding may come from sources such as the Arizona Universal Service Fund, tax incentives, bonding, tribal gambling, E-rate, and other Federal programs including homeland security.
3. **Provide state support for the development of a Statewide Telecom Strategic Plan** that will provide the vision, framework and strategies for the deployment of a statewide telecom infrastructure.
4. **Convene an ongoing Telecom Roundtable** to facilitate awareness, collaboration and cooperation among the many statewide telecom infrastructure initiatives in the state such as: TOPAZ; the Arizona Telemedicine Program; education; the CANAMEX Corridor, etc. Along with the Roundtable, develop a **database of current telecom plans and initiatives in Arizona** that provides a summary of their goals, geographic boundaries and their telecom requirements.
5. **Expedite access to local, state, federal and tribal rights-of-way.** Facilitate coordination and development of recommendations for legislation and Executive directives to enable one-stop-shopping, consistent fees, and expedited right-of-way permitting processes for last mile and middle mile inter-city/town transport.
6. **Provide ongoing funding for Community Telecommunications Assessments** to identify community telecom assets, assess their needs, and develop and implement telecom infrastructure strategies and initiatives.
7. **Provide state support to research funding sources and write grant proposals** to help fund telecom infrastructure projects.
8. **Implement a strategy to facilitate increased use of the federal E-rate subsidies in the state.**
9. **Elevate the Telecommunications Infrastructure Subcommittee** under the Governor's Council on Innovation and Technology to a stand alone and funded entity to enable greater leadership, planning and coordination
10. **Expand the role of the Arizona Corporation Commission in broadband deployment** including modifying the current Arizona Universal Service Fund or creating a new fund to support broadband deployment.
11. **Oppose legislative actions that erect explicit or de facto barriers to municipal participation in Broadband deployment.** Municipalities must be allowed to pursue broadband network solutions, and private sector firms must not be foreclosed from choosing to invest in and partner with municipalities. A framework of open processes and reasonable competitive neutrality allows all stakeholders to be heard. Reasonable examples are already being demonstrated in the marketplace voluntarily and without statutory mandates. We believe such a framework can encourage public-private partnerships that advance the goal of making affordable and high quality broadband available to all Americans.