



Introduction to NATOA's Broadband Principles

For centuries, the United States has been a world leader in economic development and social initiatives. From the 19th century railroad systems and the early 20th century electric and telephone networks' expansion, to the post-World War II highway system and airport construction, investments in physical infrastructure have been instrumental in supporting social and economic progress.

Today, the United States is at a critical juncture. Economic and social development increasingly depend on advanced communications infrastructure. However, there is no strategy in place for widespread deployment of next-generation broadband networks. Our failure to take immediate action threatens to relegate our country to second-class status in the broadband age.

The future of broadband is about more than viewing television, surfing the Web and making phone calls. It is about new forms of communication and mass collaboration through the virtually unlimited potential for sharing information, storage capacity, processing power and software made possible through high-capacity bandwidth connections. This collaboration will generate new ideas, accelerate economic development and lead to opportunities for wealth creation, social development and personal expression.

While other industrialized nations have developed strategies for next-generation broadband infrastructure, the United States still lacks a national broadband strategy. The lack of a proactive strategy has effectively ceded control of our broadband destiny solely to the private market without sufficient regard for the public interest or the unique needs of local communities. This approach has not resulted in the investment needed and has failed to realize the many positive externalities created by next-generation broadband networks. The effects of this failure are clearly manifest: fading international rankings for broadband penetration; relatively low bandwidth at high costs; throttling of peer-to-peer communications; and little competition among service providers. Moreover, the future contours of broadband in the U.S. are being defined by a small number of private entities.

NATOA is increasingly concerned that the communities we represent are losing their competitive advantage to communities in Europe and Asia due to the lack of federal and state broadband leadership. This inaction will likely harm the competitive status of local communities with respect to education, healthcare, economic development, standard of living, and the level and quality of civic discourse. Inaction will adversely affect local governments' ability to provide public safety or to create a more sustainable environment for the future.

Local governments have always played an essential role in ensuring that the benefits of communications infrastructure would be available in communities across the United States. Localities will, by necessity and by choice, be part of the solution to our national broadband deficit. To that end, NATOA has adopted its Broadband Principles.



BROADBAND PRINCIPLES

The National Association of Telecommunications Officers and Advisors (NATOA) supports the development of a National Broadband Strategy consistent with the following principles.

1. NATOA calls for the immediate nationwide deployment of advanced broadband networks.

The United States faces a broadband crisis. Broadband network infrastructure is critical to economic growth. New and emerging applications and services demand more bandwidth than can be delivered by most current domestic networks. The gap between the United States and other industrialized nations is growing wider. Our country is becoming a digital also-ran with serious adverse consequences to our economic competitiveness and quality of life.

The United States has a proud history of deploying electric, telephone and transportation infrastructure to all parts of the country. Now we are challenged again. We are behind and the buildup of advanced broadband networks will take time. We must act now!

2. True broadband requires high capacity bandwidth in both directions.

To grow and enhance economic opportunity, local communities must have access to interactive, open, broadband networks with sufficient capacity to meet the increasing information, communications and entertainment needs of their residents, businesses, institutions and local governments. US competitors in Europe and Asia are building broadband networks that can provide bandwidth of 100 Mbps to 1 Gbps to each premise. Those networks serve as platforms for continuing innovation and allow the delivery of new services and applications that will transform these nations' economies and enhance the quality of life. To remain globally competitive, networks in this country should meet or exceed those standards and be designed so that capacity can be expanded by replacing electronics without having to rebuild the networks.

It is important for America's networks to offer symmetrical, high capacity bandwidth in both directions, as with many of the new networks in Europe and Asia. Ample upstream bandwidth empowers network users to become creators and distributors of content and applications, as well as recipients of services. NATOA believes that the success of Web sites featuring user-provided content, as well as the successes of traditional educational, government and public access television, demonstrate that people can and will become content creators if they are afforded the tools to do so.

3. Fiber to the premises is the preferred broadband option.

Broadband networks use several wire-based and wireless technologies, including: copper and other metal wires; coaxial cable, multimode fiber optics; single-mode fiber optics;

microwaves; Wi-Fi; and WiMax. The transmission bandwidth and reliability characteristics and capabilities of each technology vary based upon many factors, including: the specific technology; the transmission distance and the connecting and terminal equipment being used. Currently, single-mode fiber optic networks are capable of transmitting the most bandwidth with the highest reliability. They show the best potential to handle increasing future demands for higher speeds and greater quantities of information.

NATOA recognizes that it will not be economically feasible to bring fiber optics to all communities in the near term. Where fiber connection is not practical, other technologies, such as high capacity coaxial cable or wireless, may be viable if they achieve the bandwidth levels described above. In the long run however, the goal should be to make fiber to the premises universally available.

Wireless networks are an important part of the broadband picture. Wireless allows mobility, and offers a competitive choice for Internet access with quick and relatively low cost deployment. Wireless will not be a substitute for an all fiber network but will play a complementary role.

4. High capacity broadband connectivity must be affordable and widely accessible.

An informed citizenry requires knowledge and opportunities for expression. NATOA believes that everyone should be able to access the information and services that high capacity broadband networks will provide. Without reasonable prices and equitable access many of our citizens will not be active participants in the broadband age. Our residents and our society will benefit from wide availability, since the communicative power of the network increases exponentially as more network endpoints are created. High capacity broadband networks can bring to bear the collective ingenuity and enterprise of our citizens to find solutions to the many problems confronting us. NATOA believes that everyone should have access to high capacity networks at reasonable prices.

5. High capacity broadband requires open access networks.

Fiber optic networks continue to demonstrate economies of scale. This characteristic gives the owner of the fiber platform an unbeatable advantage over other service providers. It is expensive – perhaps prohibitively so - to build multiple fiber networks in one community. Thus the owner of the first and therefore dominant network can set unfair terms and prices for others to use it. On the other hand, multiple service providers who can compete over a common platform will fuel innovation in broadband services, which will benefit local communities and society. Thus structural or regulatory measures must be employed to protect the right to non-discriminatory access to networks for all competing service providers and to forestall unfair business practices by network owners. NATOA recognizes that private developers of new fiber networks must be able to seek a realistic return on investment. This is consistent, however, with providing access on non-discriminatory terms.

6. Network neutrality is vital to the future of the Internet.

It is vital to the future of the Internet that network owners not discriminate in terms of content transport or unnecessarily interfere in communications between end points on the network. Where packet prioritization is necessary network owners must provide similar treatment to all providers of like services. NATOA believes that everyone must have the unabridged freedom to create, post or access any lawful content and services and to attach any devices to the network as long as they do not impair network performance. Many current network traffic management strategies are a function of scarce bandwidth capacity and should not be necessary with high-capacity networks.

7. All networks and users have the right and obligation to non -discriminatory interconnection.

Broadband communications at the local access level can be fast and economical. However, data packets that leave the local access network and traverse the public Internet will flow only as fast as the slowest connections between end points. To facilitate reliable, high-bandwidth, symmetrical, peer-to-peer communications between our communities and to promote the expansion of open access networks, NATOA supports the direct linkage of local broadband fiber network peering points through the use of long haul fiber. All local broadband networks must have the right and obligation to non-discriminatory interconnection with other broadband networks using common, interoperable standards and protocols.

8. Local governments must be involved to ensure that local needs and interests are met.

The desired development of high capacity broadband networks and broadband services will require extensive collaboration among all parties: local communities, regions, state governments, national government, the private sector, interest groups and others. While the U.S. has plenty of broadband capacity in the "long haul" routes, fiber connections rarely reach homes and small businesses. Local governments are central players in ensuring that this "last mile" fiber connection to homes and businesses is achieved. Local elected officials are well positioned to evaluate the infrastructure and economic development tools needed to sustain viability, encourage growth and ensure that the unique needs and specific interests of local communities are addressed. NATOA believes local governments must be recognized as key partners to industry and the states and federal government in broadband development.

9. Local governments must be allowed to build and operate broadband networks.

Local geographic communities share common interests and offer the best opportunity for acceptance and growth of high capacity broadband. The right of local governments to build and operate broadband networks must not be infringed. Public agencies and community-based non-government agencies also need to have equal opportunity to participate through

meaningful investments in communications infrastructure. Communities must have the freedom to meet their unique communications needs. NATOA believes that local governments and the communities they serve must be able to preserve the policy option to own and operate public broadband networks. Any existing prohibitions on local government communications initiatives must be abolished.

10. A variety of options must be considered to cover deployment costs.

It is not yet clear which methods of funding deployment are best. Different methods may be preferable in different communities. For example, networks may be financed by private investment, by government investment, by public-private partnerships, by tax incentives, or by other means. None of these approaches should be prohibited by law or burdened by special restrictions (such as laws that forbid cross-subsidy by governments but allow it for private entities).