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Introduction

With the passage of the Telecommunications Act of 1996, the pace of regulatory change increased exponentially. The impact on rural areas is significant; the issues specific to Southern states and communities unique. This report provides a brief history of telecommunications regulation and an overview of the key elements of the Telecommunications Act of 1996. Innovations in state telecommunications regulations, as well as a summary of actions taken by Southern states since the 1996 Act was adopted, are discussed. After this whirlwind tour of telecommunications regulation, the report examines the evidence for the importance of telecommunications technology in rural areas and reviews key technology innovations that hold promise for rural areas. Finally, a checklist of items that state and local decision-makers need to consider when defining telecommunications policy for their regions is presented.

This report is intentionally brief; where appropriate, references to web sites or other resources are provided. In addition, a review of topics that have been addressed by public service commissions in Southern states reveals that different states have addressed various issues in unique ways.

The Importance of Telecommunications Technology to Rural Citizens

In the history of the human race, technological enhancements have brought changes in societies and communities. Today's telecommunications technologies have already changed rural communities across the nation, and these shifts should continue to spawn changes at an ever-increasing rate. Changes in rural communities associated with the use of telecommunications technology include:

- Work - The type of economic activities done in rural areas is shifting.
- Labor - The jobs evolving in rural areas are changing.
- Services - Social services as well as the government are using this new technology to centralize activities.
- Health Care - Telemedicine is providing a mechanism for sophisticated diagnostic work to be done over telephone lines.
- Education - Telecommunications technology is helping to bring college courses and adult continuing education to rural places.

For this reason, it is critical that states and local communities consider the alternatives available to them when considering telecommunications policy issues.

Rural citizens view telecommunications technology as shaping the economic and social well being of where they live. In one study, researchers studying 20 rural communities found that 71 percent of respondents believed that telecommunications technology would enhance their community's economic competitiveness, and 67 percent...
thought that telecommunications technology would enhance their community's overall quality of life [1].

**Information vs. Communication**

The impact of telecommunications technology is not always positive. A 1997 report conducted by researchers at Carnegie-Mellon University found that people using the Internet from home primarily used it for two purposes: communication with others via e-mail and for information or entertainment, generally obtained from the World Wide Web. The study chronicled the experiences of families who began using an Internet service (HomeNet) provided by the researchers. That study found that people who used e-mail more than others tended to have more consistent use of the Internet and used it more often [2].

E-mail is largely a low bandwidth use, while web use increasingly depends on higher-bandwidth connections. This distinction is important to rural communities. For example, if a community has only some extent they can be consumers of information, much like television viewers are. However, low-bandwidth access is insufficient to allow members of a community to be providers of information, just as only a few communities have broadband transmission capabilities.

HomeNet users also experienced difficulty mastering the technology, and many who were unable to do so themselves simply dropped out of the study. Better training and easier-to-use technology is recommended.

A follow-up longitudinal report on the same HomeNet indicated that even though the Internet is used extensively for communication, increased use of the Internet is associated with less communication with household family members, a reduction in the size of one's social circle and increases in depression and loneliness [3].

**Local Zoning Regulations**

Community officials are facing a dilemma because of new technologies. Numerous challenges to local zoning regulations have come about because of the increased demand for satellite capabilities. The Telecommunications Act is clear that states and localities may not create barriers to competition and some regulations regarding placement of satellite dishes have been found to be anti-competitive. The FCC's rule-making regarding video programming indicates state and local regulations that impede the installation or use of antennas that receive broadcast signals are prohibited. However, as far as their state enabling legislation allows, localities do retain the authority to regulate these items for safety or historic preservation reasons [4].

Given the increased role that wireless and satellite communications technologies are likely to play in rural areas, this issue bears serious consideration. While many rural areas may not even have zoning regulations in place that would affect the placement of such satellites, those that do may experience challenges on the basis of the Act's pro-competition provisions. Telecommunications competition must be balanced, however, with quality-of-life issues for the citizens who are served by the new telecommunications players, and placement of these technologies is something that local leaders must consider.

**Convergence of Broadcast and Point-to-Point Media**

The convergence of broadcast and point-to-point media provides interesting challenges for policymakers.

**Point-to-Point POTS Telephone Service**

Before 1984, things were simple. In general, a consumer had one option for local telephone service and one option for long-distance service. The transmission of telephone service occurred over a wire, either copper or in some cases fiber-optic cable. The consumer could initiate a connection with some other consumer, and analog voice data traveled back and forth over the circuit formed by the connection between the two end points.

**After the 1984 Modified Judgment**

After the modified judgment, consumers had a choice of long-distance providers, and many of these providers implemented new technologies to better serve their customers and increase capacity between the local exchange provider and the inter-exchange provider. Consumers did not yet have a choice of technologies, as the local loop (the part of the network connecting the local exchange carrier with the consumer's home or business) generally remained the copper wire.

**Today's Telecommunication Technologies**

With the introduction of the Telecommunications Act of 1996, consumers now have a choice of local exchange carrier, and many of those carriers now offer alternative technologies for "the last mile," the connection from the local switching office to the consumer's home or office.

The complexity of choices that were previously unavailable offers unique challenges for state policymakers. Questions of how to:

- Ensure that consumers understand the technology options that are available to them;
- Ensure that interconnection agreements are negotiated fairly for all companies involved;
- Identify appropriate methods of costing the unbundled network elements;
- Ensure that the Universal Service Fund accounting process does not undue hardship on small rural LECs; and
- Ensure that advanced telecommunications services are available in rural areas as well as urban areas.

To make equal access of sophisticated telecommunications technology at a reasonable cost, additional monitoring mechanisms will probably be needed because of the complexity of the new regulated competition model.

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