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# **Telecommunications And Municipal Utilities: Cooperation And Competition In The New Economy**

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*by*

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*and*

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## TELECOMMUNICATIONS AND MUNICIPAL UTILITIES: COOPERATION AND COMPETITION IN THE NEW ECONOMY

**T**his document is best understood as an opportunity package. The electric utility industry has undergone dramatic regulatory change during the '90s. Its sister industry, telecommunications, has experienced perhaps even greater change. Overlaying these momentous regulatory transformations is the revival of regional economies and the dawn of the Information Age.

From this alignment of forces arises a unique window of opportunity for the municipally owned utilities sector. This package describes that opportunity, recommends that it be seized, and reviews the keys to leveraging it for success.

This paper is about the utility industry, especially the municipally owned utilities sector, and the great opportunities it faces in the new economy at the beginning of the millennium.

It is an understatement to repeat that our world is changing dramatically. Where once virtually all of us performed physical labor, many of us now sit for our livings, as a consequence of the Industrial Revolution having been supplanted by the Information Revolution. The rise of information as the most important global commodity has altered everything we do, from how we define "goods and services," to how these goods and services are delivered, to how we teach our children, to how we communicate with family, friends, neighbors, and all the others who in some manner touch our daily lives.

The success and survival of towns, cities, counties, regions, nations, and indeed the world depend upon visionary leadership in the new Information Age. Municipal utilities, as providers of goods and services essential not only to human survival but also to improved quality of life, have the opportunity to expand their heretofore limited roles and take their places as community leaders in the new economy. And the sooner electric utility decisionmakers explore the means of exercising their expanded leadership potential, the sooner the day arrives when the citizen-customer can enjoy the opportunity's benefits.

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## A. Background

Over the last decade, this nation's economy has been challenged by the changes unleashed by the post-Cold War world of multinational trade and rapidly developing new technologies. In response to these changes, whole new clusters of economic activity are developing around enterprises that apply advanced technology to the production of an array of old and new goods and services. The United States finds itself with a significant share of these 21<sup>st</sup> century growth leaders. Their quick movement to the forefront of the economy is testimony to the nation's inherent resiliency, its faith in the future, its educated, skilled, and adaptive populations, the educational institutions that support these populations, and the quality of national, state, and local leadership in both the public and private sectors. In California, for example, a critical factor in that state's economic renewal has been a unique approach of public-private collaboration on building a new statewide economy. This approach works from the bottom up, rather than the top down, and removes obstacles to initiative and enterprise so that Californians from all walks of life can participate in the benefits of the state's new economy.

At the national level, the United States is well positioned to capitalize on the new economic changes faced by it and the rest of the world. If the nation acts decisively, it can capture extraordinary economic opportunities and quality-of-life benefits for all its citizens. The United States is already a world leader in many high technology areas: biotechnology, microelectronics, telecommunications and information, publishing, multimedia and entertainment. Moreover, the United States is also a leader in education, with major investments in its universities (the "knowledge factories" of the Information Age), and leads as well in attracting exceptional individuals from other nations who want to take advantage of the high-caliber education offered here. What is needed now are strategic plans and meaningful resource allocation commitments of sufficient duration from both the public and private sectors to realize the potential in the Information Age opportunities. These strategic efforts must begin with the recognition that advances in, and the convergence of, information and communications technologies are truly revolutionary. The main argument of San Diego's 1992 "Global Village" report perhaps best illustrates the need for that recognition and the strategic information planning it must generate:

"As the world moves swiftly toward global interconnectivity, economic and social rewards will go to the...regions that organize themselves to participate effectively in the information-led economy that is emerging. Those areas that do not choose to follow this path will be left behind."  
(International Center for Communications, 1992)

Information and telecommunications technologies offer tremendous opportunities for the nation, its citizens, and its businesses to improve services provision and delivery, cut costs, improve communities, and attract and foster new industries—in other words, to build a sustainable competitive advantage for the United States.

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## **B. The Revival Of Regional Economies And The Coming Of The Information Age**

The emergence of the new economy we are witnessing in the United States has its corollary in many other places around the world. What is striking about all these new economic arrangements is that they reflect two contrasting sets of forces, one moving in subnational and substate directions, and the other moving in transnational and global directions. These dual forces are often grouped for easy reference into the revival of regional economies and city-states on the one hand, and the emergence of an Information Age and Knowledge-Based Societies on the other. The “city-state” concept is key because it plays directly to the theme of this paper, that the opportunity is of primary, although not exclusive, appeal to the municipally owned utility.

The latter set of broad economic, social, and technological forces that define the arrival of a globally linked Information Age and the emergence of a new type of Knowledge-Based Society is dynamic and borderless, allowing people from the most out-of-the-way places to connect with other people, businesses, and institutions a world away. At the core of this connectivity stands a wide array of advanced electronic technologies, telecommunications and computer networks aimed at speeding the delivery of information and services to and within the workplace, the home, health care and educational institutions, and government. The evidence of this ubiquitous connectivity is everywhere, whether the point of reference is California, the United States, or the world in general. Witness the rapid growth of the Internet and the World Wide Web, both domestically and internationally, as well as the emergence of inexpensive technology that allows ever-greater numbers of citizens to gain access to what is known colloquially as the “Information Superhighway.”

The countervailing institutional forces at the regional level act on economic development “close to home.” From the standpoint of public policy, it is the local economic region, including its institutional complex, that is the appropriate focus of efforts aimed at promoting economic development within the locality, the region, the country, and the world. Notice again that the development engine works from the bottom up.

The constructive interference of these two streams of forces has had profound effects:

1. Increasing numbers of cities, countries, states, local chambers of commerce, and regional and statewide economic development bodies, along with a host of other entities, are motivated to implement new strategies.

2. The strategies' aim is to improve the delivery of products and services through the sophisticated deployment of advanced information technologies under the guiding concept that this deployment will convey benefit to citizens, businesses, and other constituents.
3. The institutional entities (governments and nongovernmental organizations alike) are coalescing into "smart communities." The potential for telecommunications to enhance mobility by bringing information and services more readily to the user improves the prospects for new business development in general and adds to the quality of life by increasing productivity, convenience, and efficiency from life and work in a "wired" world.

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### **C. The Regional Economy And The Utilities Industry**

The revolutionary pace of change in technology and applications is creating significant new challenges for the utilities industry. The very structure of work, its nature, and the delivery of goods and services are changing fundamentally. The foundational shift from a manufacturing economy to an information economy generates new demands on citizens, businesses, and educational and governmental institutions. Regions (or city-states), both in their economic and civic structures, are generally the places where the adjustments to the myriad cross-pressures unleashed by this shift are initially worked out within the larger societal context. ("Regions" herein are defined to mean metropolitan areas that cross county and/or state lines.)

What these developments tell us is that, in the face of rapid, constant, and globally induced economic change, regions have become the critical units of action and reaction for the national community. This is because regions, and especially their institutional networks—economic, political, social, and civic—are the first to engage in, and benefit and/or suffer from, the pressures for restructuring within modern nation-states. In contrast to the common refrain heard in this country that the states represent the new laboratories of democratic governance and institution building, it is really the regions that have come to the fore. Regions are the new centers of innovation and creativity on the one hand, or the focal point of decline and deterioration on the other. This is primarily because it is the regions that are the "natural" locations for the development of the critical synergies among peoples, skills, infrastructure, economic and social organization, and culture that will evolve into effective adaptation to the rapid change at the beginning of the 21<sup>st</sup> century.

For regions to realize their potential as leaders of innovation and creativity, and simultaneously to avoid the threats of decline and deterioration, they cannot be rigid. They must be able and willing to adapt to change. They need to continually cultivate cooperation and collaboration, and to compete when necessary, in order to be able to

build not only new institutional practices but also ways of conducting business within the existing institutional framework. Municipal utilities can and do play a much larger and more significant role in regional leadership than has been perhaps previously realized by those within and outside the industry.

Municipal electric utilities may have a particular responsibility to utilize existing or new telecom infrastructures to serve their customers. While telecom services may be a new source of utility income and more closely tie customers together, municipalities and their municipal electric utilities also have community, civic, health, education, and economic development responsibility to bring 21<sup>st</sup>-century technology to their citizen-owners and make their communities more attractive to business. Bridging the digital divide in small, rural, and urban-distressed communities may only be accomplishable in the short run by municipal electric utilities. Incumbent local exchange carriers, cable companies, and Internet service providers have made it perfectly clear that high-density urban communities will be the first to be served. Unless the municipal electric utilities step up, small communities may not be able to benefit from the new technology.

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## **D. The Impact Of Deregulation In The Electric Utilities And The Telecommunications Industries**

### **■ Summary Of Telephone And Electric Utility Deregulation**

It is common knowledge in both the electric utilities and telecommunications industries that there has been a nearly complete reversal of policy and law at all levels, from the heavy regulation that characterized operations a century ago to the recent official deregulation outlined by the Telecommunications Act of 1996.

Because the history leading up to this about-face is important in understanding what the Federal Telecommunications Act of 1996 means for both industries, it has been sketched in appendices. This section will not go into the detail reserved to those appendices, but will instead summarize deregulation and focus on its impact.

As early as 1898, industry leaders publicly supported state regulation, contrary to the still-popular myth that the electric utilities fought tooth and nail against any such regulation. “Electric utilities vigorously defended the jurisdiction of the commissions against encroachment by local and federal authorities.... That the utilities sought to preserve their autonomy is uncontested; they did this not by opposing state regulation, but by seeking it.” (Anderson, 4) Samuel Insull, one of the first heads of Commonwealth Edison, made the point that regulation would help ensure lower capital and operations costs, as well as lower consumer rates. In 1898 he stated: “The more certain this protection

is made, the lower the rate of interest and the lower the total cost of operation will be, and consequently, the lower the price of the service to public users.” (Ibid.) As a result of this industry support, government got involved by owning or heavily regulating most of the utilities of the day, telephone as well as electric.

This situation lasted until 1996, when it was turned on its head with the passage of the Federal Telecommunications Act.

***In its initial paragraph, this paper said it would describe a unique opportunity. And here it is:***

The Act, and accompanying rules approved by the Federal Communications Commission in the same year, “...ease[d] the way for public power utilities to use their vast in-house communications networks...to transmit phone and TV signals and offer other telecommunications services.” (Shiver)

## ■ Intention Of The Act

A November 1997 Washington Research Council (WRC) Special Report states that the Telecommunications Act of 1996 is intended to “redirect national telecommunications policy and promote competition to accelerate technological change.” The passage of the Act was apparently not a surprise to many. In fact, though, the WRC claims:

“In many ways, the Act was inevitable. Competition, spurred by technological advances, had been building for more than 20 years. The convergence of computer and telecommunications technologies had transformed their role in the economy. Increasingly, policy makers have come to see the quality of these industries as a key determinant of economic growth.” (WRC, 1997)

Thus, the Act seeks to promote competition at all levels in the telecommunications arena by removing the regulations and restrictions that have existed since the first decade of the century. A major goal is to replace the historical regime of monopolized telecommunications goods and services with many local and/or regional, smaller-scale competitors providing unbundled access to networks on “just, reasonable and non-discriminatory terms and conditions.” Utilities are in a prime, and possibly unique, position to enter the arena and become a smaller-scale provider, either on their own or in “partnership” with other telecommunications entities.

What does the Act really mean for electric utilities in particular? As discussed above, the Act is intended to allow virtually anyone to compete in the telecommunications arena, including electric utilities, whether public or private. In fact, Section 253(a) of the Act explicitly provides that “[n]o State or local statute or regulation, or other State or legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to

provide any interstate or intrastate telecommunications service.” Consequently, investor-owned utilities and rural electric cooperatives have been given a carte-blanche opportunity to enter the telecommunications market. And with 2,000 publicly owned power systems, 930 rural electric cooperatives, and 240 investor-owned utilities (Fidelman, 1998), the number of potential entrants is quite large. Since 75 percent of municipal utilities serve communities of 10,000 meters or less, municipal utilities are in a position to bring the benefits of the knowledge-based society to smaller, rural, and isolated areas.

A key point to keep in mind is that, in spite of some confusing fine distinctions, for all intents and purposes the Act allows Internet services to be considered as telecommunications. This is important because strategic thinkers almost unanimously believe the future direction of telecommunications is wrapped up tightly in the Internet, and power utility decisionmakers should be guided accordingly.

## ■ Status Of The Electric Utility Industry Since Passage Of The Act

Since the passage of the Act in February 1996, the utility industry has become the “dark horse” in the local, regional, and global telecommunications race. (Richards, 1998)

“Long sidelined by regulatory restrictions, electric utilities (and utilities in general) have the nation’s third-largest telecommunications infrastructure. More than 40,000 miles of fiber-optic cable, much of it unused up to now, links power plants with substations and other energy control points. Only telephone and cable companies have larger systems. The utilities also have ample reason to diversify as deregulation begins to siphon away customers from their traditional power-supply markets.” (Richards, 1998)

Interestingly enough, many electric utilities had already “entered” the telecommunications field back in the 1980s, when they began laying their fiber optic networks to monitor power grids and internally transmit information on power usage. (Levin, 28)

Utilities typically use only three percent of their network capacity, and this mainly for internal communications and load management. This leaves some 97 percent of excess bandwidth available for sale to telephone companies, private networks—or to a new base of customers. (Lamarre, 8) And the beauty of the utilities’ network capacity is that it is primarily fiber optic, the highest-capacity, most reliable media around. With so much quality capacity being used for so little, together with the pressures to innovate and rapidly adapt technologically, and with the threat of shrinking electric utility revenues in an age of deregulation, the utility industry finds itself grappling with a number of derivative issues, challenges, and opportunities:

1. Electric utilities must address decontrol and restructuring. In order to survive, utilities must:

- Become both more competitive and more efficient;
- Offer a much broader range of services at competitive prices; and
- “Justify their existence or face pressure to sell out” to more competitive and technologically savvy utilities. (Baller, 1997)

“Given that the [electric utilities] already run their own wires to almost every house in America, for them to add information-carrying capability to their lines could be cheaper, easier, and more socially constructive than for either the cable or phone companies.” (Rivkin, 9) So, telecommunications can become a new source of needed revenue for the utilities while simultaneously satisfying a social need.

2. Tapping into the telecommunications market can be done in a variety of ways. One attractive way is through cooperation via partnerships, alliances, or joint ventures. Cooperation can be key for both the electric utilities and the telecommunications industry, in that sharing of technology, tools, and infrastructure—rather than separate, competitive endeavors to acquire them—can mean a reduction in the future costs of making power while providing more customer-friendly and efficient services. As the electric utilities’ needs for operational and administrative telecommunications systems grow, the “commonalities that exist [between electric utilities and the telecommunications industry] provide a suitable ground for integration of services over shared transmission facilities and [the] creation of powerful utility telecommunications networks.” (Khademi, 601)
3. With recognition coming from the highest governmental levels that electric utilities are important sources of potential competition and innovation, and with the freedom to enter the telecommunications arena provided by the 1996 Act, the industry is in a position to rapidly become leaders in the new economy, a position not enjoyed for over a century. Electric utilities can become “technology utilities” and help bring together citizens, businesses, and institutions. For the utilities to go into competition using their own existing communications infrastructures as a base, enhancing them as necessary in order to be successful, is obviously a less cooperative approach, since it pits the electric utilities as direct rivals to the telecommunications firms. But the civic benefits remain. Electric utilities get a new source of revenue, thereby becoming healthier members of the community, and citizen-customers reap the advantages of the added competition.
4. Another means of tapping into the telecommunications arena is via acquisition. This may be easier to accomplish for the private electric utility than for the municipally owned utility, but in either case the end result and potential benefits are as already stated.

5. Finally, without regard to external telecommunications ventures, a great many electric utilities are also facing the problems of potentially falling behind in their levels of service during this time of deregulation. In order to combat this, utilities need to operate “highly reliable networks” to deal with internal needs. To do so requires upgrading their telecommunications infrastructure to achieve greater operational efficiency and greater reliability in the provision of services, to stay competitive, and to comply with environmental and conservationist regulatory and legal requirements from many levels. (Baller, 1997; Fidelman, 1998)

As Mr. Baller succinctly puts it in his contribution to the 1997 APPA Legal Seminar, “A window of opportunity exists for public power utilities to take actions that will enable them to reduce infrastructure investment and operating costs, control their own destiny, stay competitive and contribute to [the] economic, educational and social well-being of their communities.” (Baller, 1997)

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## E. Emerging Difficulties With Electric Utility Deregulation

Unfortunately for the advocates of electric utility deregulation, things have not only not gone exactly as planned, but have not gone as well as they have in telecommunications deregulation (although most citizen-consumers might argue the latter contention after answering still one more dinner-hour call to switch long-distance companies).

“With California’s power grid strained to the breaking point and customers outraged over soaring bills, angry officials yesterday urged a ‘ratepayer rebellion’ to challenge the industry in the nation’s first deregulated electric market.... In San Diego and a slice of southern Orange County served by San Diego Gas and Electric Co., bills have jumped 200 percent in some areas, due to factors including deregulation, a sweltering summer and increased power consumption across the Southwest. Deregulation wasn’t supposed to work this way. A complex 1996 state law sought to boost competition in the state’s \$20 billion electrical power industry, then pass on the expected savings to customers.” (Howard, Star Ledger/AP)

“The crisis has forced state officials to take a sobering look at the two-year-old deregulation of California’s electricity market, recognizing that the state may have surrendered powers that it needs, but can’t get back. The state is trying to sort out what to do next. Instead of the centralized, command-and-control structure that was the hallmark of the old regulatory system, deregulation of the retail energy market means control over the most important pulleys and levers has been dispersed to the broader market that extends far beyond California’s boundaries.” (Smith, WSJ)

It is not the purpose of this paper to analyze or propose resolution to the problems caused by deregulation in the electric power industry. But it is within the purview of this paper to argue that these circumstances may in fact add to the message. The pressures on electric utilities to improve their competitive position and increase their revenues are even greater because of the deregulation problems, and the opportunity to enter into telecommunications is a viable means of relieving those pressures.

There is one other effect, however, that electric utilities must consider. This paper also argues that utilities are uniquely positioned as community leaders—and they are. But power deregulation's negative fallout has unfortunately squandered some of the underlying respect on which leadership depends. Utilities would be wise to redouble their efforts, not only in public relations but also in fundamental quality of service, to regain it.

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## **F. Considerations For Electric Utility Entrance Into The Telecommunications Market**

It cannot be repeated enough that electric utilities are in a unique position to contribute substantially to, and enter, the telecommunications arena as leading providers of competitive and high-quality services.

Having a state-of-the-art telecommunications system over which vast amounts of information can flow, both internally and externally, is a bonus for electric utilities. With more and more utilities needing better operational and administrative telecommunications systems, and with the rapid advances in technology and telecommunications, the integration of services over a common network can help turn an electric utility into a “technology utility.”

“On the supply side, many new applications can be introduced to squeeze the most out of the existing generating and transmission facilities. On the demand side, the extension of utility communications down to the customer premises for monitoring and control of load in real time, is becoming more attractive and necessary as time goes on. There is also increasing competition in power markets, which in turn results in great demand for communications capacity and flexibility among all the participants. In many situations, there [are] also opportunities available to utilities to enter into joint ventures in telecommunications and ultimately to use it as a secondary source of revenue. Telecommunications is the key component of all these future possibilities and trends. To make the utility telecom infrastructure of the future handle all these applications economically and reliably, the services should be accommodated over the same utility network, rather than continuing to rely on separate systems.”  
(Khademi, 1997)

Becoming a “technology utility” is one step on the evolutionary way to becoming a “smart utility.”

Frequent reference has been made to the benefits expected to flow to the citizen-consumer from the Act’s opening up of the telecommunications market to utilities. Before proceeding with the “how-to” of entry, it is worth articulating these benefits with some added specificity.

The electric utilities’ possession of a state-of-the-art telecommunications system yields the following benefits to their existing customer base:

- Services such as remote meter-reading and activation (Rivkin, 47);
- The ability for both consumers and their respective utility to call up monthly bills at any time (Ibid.);
- The rewarding of consumers for shifting consumption to off-peak hours (Ibid.);
- Power demand adjustments on a moment-to-moment basis (Ibid.);
- Flexible fee structures (Ibid.);
- Outage detection and notification (Ashworth, 24); and
- Fault isolation (Ibid.).

As impressive as is the above laundry list to the existing electric consumer, the benefits to new communities of consumers are perhaps even greater. All the following potentialities flow directly from the characteristics of the utilities’ networks, namely, their enormous unused capacity, the utilities’ advantageous position in terms of land ownership and right of way, and their ability to secure capital funds for building telecommunications infrastructure (Khademi, 602):

- Lower pricing and greater choice from increased competition for the community at large;
- Long-distance learning, including school-to-school and school-to-home links (Ashworth, 24);
- Video on demand (Ibid.);
- Mass electronic publishing (Ibid.);
- Group- and company-level telecommuting (Ibid.);
- Interactive multimedia (Ibid.);
- Electronic town halls (Ibid.);
- High-speed Internet access;
- Competitive local exchange carrier (CLEC) services;

- M-Networks (Metropolitan) for City Community/Neighborhood information;
- Telemedicine (local and nationwide connectivity);
- Wide area networks (WANs) for banks or other business-to-business activity;
- Dark-fiber leasing;
- Home/business security systems (utilizes 24-hour call centers);
- Digital CATV systems; and
- HDTV capable.

Finally, as many readers may already know, there is somewhat of a developing groundswell of formal opposition, at least in certain venues, to the idea of publicly owned utility entry into telecommunications. The outlook is not one of completely smooth sailing; there is some turbulence ahead. This **CONSIDERATIONS** section would be irresponsibly incomplete without some reference to that development, and some advice on how these utility executives might address it.

Included in the **APPENDICES** are a position paper by APPA and a summary of two “Ex Parte” filings by municipal electric utilities regarding the objections raised by traditional telephone carriers and cable companies in Missouri that paint a clear picture of the issues. (In addition to Missouri, similar state-level activity is occurring in Texas and six other states.) On one level, it is only to be expected that any business entity, upon recognizing incursions into its heretofore comfortable space, would react with whatever defensive weaponry is at its disposal; shareholders and customers would properly claim dereliction if it did not. Furthermore, in a case where the rivals are accustomed to operating in a longstanding regulatory environment, it is natural that defenses will be mounted in the legal and regulatory arenas. So in one sense, the telcos and cable TV companies are just “actin’ naturally” (although mistakenly, from the municipal electric utilities’ and this paper’s perspective). In Missouri and Texas, though, opposition efforts have progressed to a new danger point where *state* barriers to municipal utility entry into telecommunications have already been enacted, or are pending, in contravention to the *federal* 1996 Act’s provisions.

This paper is not a legal brief. But it should and can speak to a few salient observations about the situation. First, the language of the 1996 Act is clear in opening up the telecommunications marketplace and inviting utilities to play within it. Second, precedents abound for active participation by utilities in telecommunications since passage of the Act, and these precedents already have on-the-record positive contributions both to the social welfare and to regional economic well-being. And third, the federal Act specifically states that it governs, and that no state or other authority can overrule its provisions.

Regardless, some unpleasant facts do remain for the municipal utility decisionmaker to ponder (alongside the already formidable list assembled for digestion in this paper), now that a new legal front has been opened. Among them are: Are the perceived benefits of entry into telecommunications worth the possibility of an extended legal wrangle? Will the legal and regulatory efforts to overturn the intention of the 1996 Act spread, or will they be contained and defeated? Will the ultimate outcome in the courts reverse an individual utility's good-faith decision made solely on the merits of entry?

The prediction here is that the 1996 Act will prevail. The encouragement here is that publicly owned utility executives go full-steam ahead with confidence, and make their entry decisions on the merits. They should not be blind to the shoals on the charts, but in spite of them should stay focused on steering a safe course to a most desirable objective.

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## **G. Case Studies**

How to synthesize the formidable number of considerations requiring assessment before embarking on a telecommunications enterprise is best illustrated by example. Hence, a number of case studies:

### **■ Case 1: Glasgow, Kentucky**

The city of Glasgow, Kentucky, has, by now, become the primary example of a successful electric utility entrant into the telecommunications market. When Glasgow began considering the possibility, back in 1986, of entering the market by electing to construct a municipally owned broadband network, it did so for one reason: competition. As a small city with a population of around 14,000, the people of Glasgow worried what deregulation would mean for them in terms of the provision of telecommunications-related goods and services. They also wanted to establish a citywide network linking residents, businesses, schools, and government that was not available from either the local cable television or telephone companies. Their fears were not wholly baseless. Too often, and especially in rural areas and smaller cities and towns, it is still not profitable for private telecommunications providers to attempt to establish a solid presence given the lack of infrastructure and low retail base of many of these areas. Thus, private providers are reluctant to offer goods and services, and when they do, it is often at higher-than-competitive rates for the consumer. The hope in Glasgow was not only to offer a competitive alternative to the established private providers, but also to improve the quality of their community, something the private providers could not, or would not, do. Of the handful of goals most important to the Glasgow project, the following three, presented by Superintendent William J. Ray, Glasgow Electric Plant Board, deal primarily with public consideration:

- Provide the citizens of Glasgow with modern, sophisticated cable television service, which is controlled locally and operated on a not-for-profit basis;

- Provide an alternate telephone service with low-cost access to long-distance lines for business and industry;
- Facilitate new economic growth by enabling commerce to take place through the movement of information instead of the movement of automobiles.

The public considerations do not end with citywide or community-wide networks, however. As already mentioned, an electric utility's inherent advantages in terms of land ownership and the control of rights of way, in addition to the ability to secure capital funds for building telecommunications infrastructure, mean that utilities have more incentive to enter the market than ever before as key community leaders in the new economy. For example, about 85 percent of the nation's 2,000 publicly owned, not-for-profit electric utilities provide services to communities with less than 10,000 meters or less than 25,000 population. (EIA, 1998; Baller, Stokes & Meller, 1998) Thus, the incentive certainly exists to become community leaders in places where private providers are reluctant to enter. Other public uses of a sophisticated electric utility-run telecommunications network include those listed a few paragraphs above. Once again, Glasgow illustrates the possibilities.

“This project has given [Glasgow] access to a completely new set of tools to be used in educating not only the children in the K-12 program, but actually the whole community. The project is used to launch video from any classroom to every other television in the city. The data communications capabilities of the project allow students to utilize the educational software that could previously be used only during the time that the student had available in the laboratory in school, at computers in their home, in public libraries, or any other location that has a personal computer and interface to this project.” (Ray, 1995)

## ■ Case 2: Palo Alto And WebTV Networks

In September 1997, the City of Palo Alto Utilities (CPUA) and WebTV Networks, Inc., entered into an agreement that enabled WebTV Networks to license CPUA's existing fiber optic network to interconnect five of their downtown Palo Alto buildings, while simultaneously establishing a direct link to the Digital Equipment Corporation's Palo Alto Internet Exchange (PAIX). “This agreement is the harbinger of a new era of telecommunications for Palo Alto, made possible by CPUA's fiber backbone, in which local businesses will have unparalleled choices for telecom services, including the unique opportunity to provide for their own telecom needs.” (CMUA news release) Bill Yundt, Vice President of Networking for WebTV Networks, explains: “The [City's] fiber system will permit connectivity among our company's many internal computer systems using Local Area Network (LAN) technology... This means that we will be able to locate servers and client machines flexibly throughout our corporate network, and our diversely routed high speed multiconnection to the Internet will be further enhanced by the addition of a dedicated fiber path to Digital's [PAIX].” (Ibid.)

### ■ **Case 3: Entergy**

In an experiment conducted four years earlier, in 1993, Entergy, the New Orleans-based electric utility, hooked up 50 homes in Chenal Valley, Arkansas, using a “fiber to feeder” concept, whereby the utility used fiber optic cable to connect their main computer to the edge of the test neighborhood, and coaxial cable from there to the home. Arkansas Power and Light Company, Entergy’s local subsidiary, sees real cost reduction in such a concept.

“...[H]itching up its central computer to each house will save it from having to build 1.5 kilowatts of capacity per house. Over 20 years, building and operating that much additional plant would cost \$1.257 per house. But it should cost Entergy only about \$585 per house to install the telecommunications system.” (Rivkin, 47)

This concept has real potential for consumers as well.

“Prior tests elsewhere in the country, with more than 1,000 participants using equipment that is less user-friendly, have realized savings of up to 33 percent on customers’ bills and have won overwhelmingly positive customer reaction. Residential electric bills nationwide totaled about \$76 billion in 1991; saving a third of that is no trivial amount.” (Ibid.)

### ■ **Case 4: Texas Utilities And Lufkin-Conroe Telephone Exchange**

During 1998, Texas Utilities (TXU) fully integrated its wholly owned (since 1997) subsidiary, Lufkin-Conroe Telephone Exchange (formerly LCTX), into its corporate structure. The former independent telephone company, the nation’s 25<sup>th</sup> largest, had been acquired the year after the 1996 Act, a tribute to Texas Utilities’s quick opportunity recognition and decisiveness. LCTX is now part of a new entity in combination with TXU’s other fiber optic network and radio ventures, now known in combination as TXU Communications.

Lufkin-Conroe’s operating territory interestingly enough lies outside the electric utility’s territory, and Conroe’s location, as a northern Houston suburb, puts TXU Communications into direct competition with a major local exchange carrier, SBC. But the geographic separation of the electric utility and local telephone franchises also minimizes some of the concerns about TXU playing dual roles.

After professional due diligence and thorough deliberation, TXU has made a serious commitment to compete as a telecommunications company. TXU Communications is willing to take on the communications major-leaguers not only in terms of geography, but also in terms of product. TXU Communications offers a full range of sophisticated and attractively priced services, including statewide broadband services and/or dark-fiber leasing, ISP (Internet Service Provision), and multimedia services.

Thus far, TXU's embarkation into the telecommunications world has not only been well received by consumers and regulators but also has been contributing to the utility's bottom line. TXU is enjoying the benefits of its timely acquisition action, and its experience vividly demonstrates the potential.

## ■ **Case 5: Tacoma Public Utilities**

In the spring of 1997, the city of Tacoma approved a plan submitted by Tacoma Public Utilities (Tacoma City Light) to build a high-capacity telecommunications network based on a hybrid fiber optic and coaxial cable set up. "Portions of the network would be reserved for the utility's use, for commercial telecommunications services that the utility would provide on a wholesale basis, for the schools and other public services, and for future needs. The rest would be dedicated to the utility's cable TV operation, supplying up to 70 cable channels, as well as movies on demand." (Healey, 3) Additionally, they provide an open-access ISP platform as well as WebTV.

While the plan has met with substantial support, especially from the business community, it has also met with some serious dissent, both from local residents and, not surprisingly, the local phone and cable companies. The main contention has centered on the issue of direct competition. In the case of TCI, Inc., the local cable franchise, the plan puts the city in the conflicting position of directly competing with a company it regulates, a point officials at the local cable and phone companies argue translates to unfair competition, given City Light's inherent advantage in financing and securing right of way. (Healey, 1)

"One potentially troublesome conflict for cities that enter the communications business is their dual role as competitor and regulator. In the case of telephone companies, cities control rights of way and set local tax rates. For cable companies, cities also can impose costly public-service burdens, such as requiring channels for schools and city government, in exchange for granting a franchise." (Healey, 5)

Some local residents are also disturbed by the prospect of competition, but for different reasons. As one resident stated at a public hearing on the matter: "Why invest into something that is a risk, something that is not our area of expertise? ... The city of Tacoma should not be crowding out private enterprise." (Healey, 3)

The point is not lost on elected officials either. Washington Senator Bill Finkbeiner is troubled by the use of public funds for competition with private industry. "The big concern is you have someone competing with no risk or little risk, and they're competing with public dollars." (Healey, 4)

## ■ Case 6: Anaheim Public Utility District And SpectraNet

The Anaheim (California) Public Utility District (APUD), like a number of its contemporaries, built its own telecommunications infrastructure and network to enhance and improve its electric utility operations. Unlike places like Glasgow, however, Anaheim decided not to enter the market by offering telecommunications-related services directly to its customers. Instead, the APUD, after issuing a Request for Proposals for a public-private partnership to expand the network, entered into an agreement with San Diego-based SpectraNet to provide telecommunications services to residents, businesses, and local government. "Under its agreement...the Public Utility District is providing 60 of its 96 fibers to SpectraNet under a 30-year lease, and is retaining 36 fibers to support electric department and public safety applications. SpectraNet is currently constructing local loop distribution facilities that extend the backbone network to Anaheim's commercial districts, and is installing a telephone central office switch." As terms of the agreement, SpectraNet must pay \$6 million to lease the fiber, with interest over the entire 30-year period. The City also receives "5 percent of the provider's gross revenues, with a minimum of \$1 million per year guaranteed starting in 1999, and...will receive 35 percent of net revenues." (Fidelman, 1997)

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## H. Considerations Classified By Objective

From the discussion thus far, and as the case studies amply illustrate, the considerations around utility entrance into telecommunications may be categorized for ease of understanding as:

- **Public**, especially with regard to the consequences of cooperation vs. competition;
- **Practical**, especially with regard to the utility's perceptions of doability, need, and risk;
- **Economic**, especially with regard to the effect on the utility's financial health.

### ■ Public Considerations

Electric utilities must recognize that their telecommunications market behavior influences the potential for local and regional economic growth and enhanced vitality. The entrance of a utility into the telecommunications arena provides residents, businesses, and others in the community enhanced goods and services, and can substantially contribute to the quality of life.

For example, a technology utility can provide citizens with not-for-profit, locally owned and operated cable television services at competitive, often lower-than-average rates, a much wider programming selection, and better local programming accountability and control. Other important service possibilities include, but are not limited to, the following, many of which have already been mentioned: alternate telephone services with low-cost access, remote meter-reading and up-to-the-minute billing information

and access, Internet and other computer services, telemedicine, and the ability to telecommute. The greater access to information, and the enhanced communication available through such access, can have a profound effect on the quality of life for all the members of the community: increased personal interaction, with many-to-many conversation displacing simple broadcast, and discussion displacing propaganda, growth in local and regional pride, and a sense of inclusiveness replacing exclusiveness. (International Center for Communications, 1997)

The issue of whether to mine these benefits through cooperation or competition is a serious one, deserving of additional discussion. According to statistics kept by the American Public Power Association, the number of municipally owned utilities that have chosen to enter the telecommunications field as direct competitors is growing—from about 65 at the beginning of 1997 to over 220 at the beginning of 2000. In 1997 most municipal providers only supplied cable television service, while in 2000 many also offered advanced services, as identified above in Section F. The number of privately owned electric utilities that are telecommunications competitors is proportionately higher, and the problems for this latter class of utilities are far less troublesome.

Addressing first the situation of the municipally owned utilities, one advantage to cooperation is the potential to share the risks and revenues between the public and private sectors. Another is the avoidance of any hint of conflict of interest arising from having a public regulator become a competitor. But complaints against competition by municipal utilities are nothing new to cities. The same objections have been raised over the last 100 years against the municipal utility provision of electric services. Having dealt with them in the electric industry context, cities should be able to answer those objections in the context of the telecommunications industry.

As the inevitable continues to happen, however, there is a strong expectation that rules will be developed that will further diminish any problem of role duality: An acceptable regulatory framework will evolve that will allow cities to compete fairly in the telecommunications marketplace, without yielding or abusing regulatory oversight. The broad outline of this evolving framework is already discernible. One existing firewall is that in most cases the utility operation applies for permits and pays right-of-way fees to the city and is treated subsequently as a separate entity. Another is that often the electric utility has a separate board. A third is that the city usually limits itself to regulation of the CATV system. Such firewalls tend to separate city and telecommunications operations, and can be expected to grow and strengthen over time.

On the other hand, competition may go beyond cooperation and offer the public the potential advantages of additional choice and lower pricing. The threat of a public power utility's entrance into the telecom marketplace itself brings competitive benefits. Incumbent telecom providers frequently meet the potential competition by reducing their prices and improving their services.

In some states, communities must conduct public referenda to enter the business. Where such referenda have been held, municipal utilities usually receive overwhelming support.

But if the avenue to competition chosen by the utility is acquisition or merger, a host of voices can be heard expressing further doubts. Since deregulation in 1996, the world has seen a great increase in the number of small competitors entering the market, accompanied by a simultaneous increase in the number of mergers, both private-to-private and public-to-private. While mergers may be beneficial in any number of situations, many consumer advocates and antitrust experts worry about this trend, especially between public and private entities. The consumer advocates worry that mergers will actually mean less competition. "With fewer players and larger players, we think telecommunications giants will be less responsive to the needs and interests of small consumers who don't have a lot of clout in the marketplace." (Marshall, B1) Similarly, the antitrust experts worry that if mergers are "too freely permitted," the roster of market players could shrink to a few entrenched large firms, rather than broaden into a cohort of smaller competitive firms.

In the final analysis, for large municipally owned electric utilities, cooperation, in the form of partnerships, is probably preferable to competition. These utilities are based in larger markets that have attracted the interest of multiple competitors (see the Anaheim case study) and are also experiencing the interest of overbuilders that would provide competition.

For small to medium municipally owned utilities, competition in advanced services (high speed Internet, broadband, municipal networks, video-on-demand, etc.) is nonexistent. The only way these communities will have these advanced services is if the local municipal utility expands its system and starts providing them (see the Glasgow case study). In the opinion of private-sector providers, this market is too small, and the profitability of rebuilding/overbuilding this type of system is, in their minds, not feasible because of the low potential subscriber-per-mile ratios. As a general rule, private-sector providers are not interested in small cities and towns. Bob Rouse, of Pathnet, in a presentation at the 1999 UTC Utilities Telecom Summit, stated that Pathnet wanted "to be the first full-service, 'Carrier's Carrier' provider in the underserved markets throughout the USA." He later defined Pathnet's strategy as providing service in the "2nd/3rd Tier Market." If Pathnet determined that the second and third-tier cities are underserved, what does this say about the majority of rural America? (Rouse, 1999)

For privately owned electric utilities, choosing between cooperation and competition is probably a toss-up. In all cases, however, competition can be a viable choice, and should not be dismissed out-of-hand.

## ■ Practical Considerations

There are, of course, the inherent advantages that flow from leveraging the telecommunications infrastructure that is already in place in many electric utilities. This investment can be transformed into a telecommunications business to help offset current and future operational expenses. Many, or perhaps more accurately most, electric utilities have fiber optics in place for electric system protection, Supervisory Control and Data Acquisition (SCADA) communication, carrying intracity data and municipal voice traffic, meeting internal data and voice network needs, and so forth. Expanding this into a competitive telecommunications business is a natural progression.

On the other side of the ledger, perhaps most important among the practical disadvantages of the competition route is the fact that electric utilities have their own issues and opportunities to deal with outside of the telecommunications market arena. “Despite widespread and relatively sophisticated utility networks, few utilities have the capacity or the know-how to deal with the incredibly rapid changes taking place in information technology or with the ‘onslaught of data and complex systems integration requirements associated with the info-way.’” (Ashworth, 26)

As electric utilities continue to face competitive pressures to provide quality power goods and services at reduced rates, the need for highly effective load management applications becomes more pressing. A goal of any utility is to minimize usage at peak hours and encourage usage in off-peak hours. The adoption and adaptation of telecommunications by utilities give the industry a unique opportunity in efficient load management by providing the minute-by-minute ability to track usage, coupled with an immediate notification to consumers through a variety of mediums. Load management through telecommunications applications can provide such already-mentioned services as remote meter-reading, moment-to-moment power demand adjustment, fault isolation, outage detection and notification, and the ability to reward customers for shifting consumption to off-peak hours.

Additionally, a great many electric utilities still need to address the issues of reengineering and redeveloping their customer enterprise systems “to aggressively address the marketing and sales functionality that will be necessary for them to become true market-driven organizations.” (Ibid.) Thus, utilities may need to concentrate on internal issues before they try to tackle the highly competitive and lightning-paced telecommunications arena by themselves.

Electric utilities also face legions of other intra-industry opportunities that may or should take precedence over telecommunications. Some of these include open transmission access, exempt wholesale generation, and market-driven pricing, “any one of which could have considerably greater long- and short-term impact on their core electricity business than...large-scale diversification into the telecommunications and multimedia entertainment

industries.” (Ashworth, 25) As the dissenting Tacoma resident pointed out, utilities should consider improving in the field they know best, rather than trying to compete in a field in which they are trailing, more often than not, in expertise, technological capability, and the funding necessary for rapid innovation and change.

There is a powerful logic to the argument that electric utilities should focus on these core business issues, just as a shoemaker sticks to his last, rather than be lured into the distraction of an outside high-tech opportunity.

By any measure, the practical problems associated with entrance into the telecommunications arena via either the competitive or cooperative routes are daunting. But well-managed utilities can not only resolve their internal problems, they can resolve them while simultaneously taking advantage of the new telecommunications opportunity, with its high revenue and high social contribution potential. Because “nothing ventured, nothing gained,” and because high rewards usually come only with high risks, electric utilities should certainly be careful, but they should not shrink from the challenge.

## ■ Economic Considerations

Electric utilities need to make an especially deep dive into the assessment of the economic potential of entering the telecommunications market. Recent estimates place the industry’s aggregate operating expenditures for telecommunications between \$2 and \$4 billion per year. (Baller, Stokes & Meller, 1998) The high proportion of unused utility network capacity available for leasing or selling to private and other providers (97 percent, as already cited) translates directly to a new source of revenue. Since the 1980s, many utilities have actually gotten into the business of selling their excess bandwidth wholesale to cable and telephone companies and private networks. (Flavin & Lenssen, 1994) Today, it is not uncommon to find documented utility business plans that specifically discuss selling or leasing excess bandwidth. Returns and profits obviously depend upon market circumstances, but the potential is there to realize substantial revenue and/or savings streams from the provision of cable television, broadband, and Internet services, Municipal Area Networks (MANs) and other similar networks, security and medical monitoring, and, of course, utility metering and load management. Most municipals expect to break even five to seven years out, and in most cases where telecommunications entry has occurred, the city is ahead of projections.

Better load management, an already-cited telecommunications benefit, yields an additional derivative economic potential. It may actually allow utilities to forego building new power plants for at least 20 years (Rivkin, 1993), or at least facilitate the building of smaller, more innovative, and substantially less expensive plants (Flavin & Lenssen, 1994).

But what has driven some local governments to enter the telecommunications marketplace is not so much entrepreneurial spirit as necessity. Those jurisdictions have jumped in to provide services for small towns or rural areas “‘shunned by private industry.’ Thus, they have the market to themselves.” (Healey, 4) Unfortunately, cities that do try to compete outside the framework of a limited market can lose money. Attempting to compete with the “expert” companies can be dangerous. “With hundreds of billions of dollars in capital at stake, none but the strongest and best-positioned companies can afford to tackle the deployment of the info-way. The combined revenues of the top ten telecommunications companies is nearly three times that of the top ten electric utilities.... [And] these companies are not keeping their cash idle.” (Ashworth, 25)

While some proponents claim that mergers can reduce cost through such means as eliminating redundant staff, “theoretical savings don’t always translate into practical efficiencies, given the enormous task of combining and running two disparate firms. Companies might save more by devoting less management attention to mergers and more to whipping their own firms into shape.” (Marshall, B1) The competitive road is risky enough that many utilities interested in seizing the opportunity for entrance into telecommunications may choose a cooperative approach instead.

In the proverbial nutshell, today’s utilities need to consider a number of complex aspects when contemplating entry into the telecommunications market. Considerations of strategic positioning, economic development, quality of life, community distinctiveness, enhanced operations, profitability, and service competitiveness all play key roles in the decision to become a “technology utility.” And overlaying all is whether or not the utility has the stomach for the possible protracted legal battles discussed above in the initial section on **CONSIDERATIONS**.

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## I. The Prospect Of Partnering

“[There] is a need for a consensus-making spirit and recognition that cooperation is a fundamental ingredient in any competitive strategy—cooperation between government and industry, cooperation between governments within a region, and cooperation between heretofore competing industries.” (Eger, 1998)

Up to this point in the paper, an underlying assumption has been of rough equivalence between the “utility as competitor or cooperator” approaches. This section further explores the possibilities in and advantages of each.

For a variety of reasons, electric utilities, just as with any industry, business, or person, cannot “do it on their own.” As the poet said, no one is an island. Communication and cooperation, in some form or another, must take place in any human endeavor. Each entity in a community possesses advantages merely waiting to be exploited positively by

others. For example, large utilities are often better at building, siting, and maintaining. They are also properly recognized for their superior performance in rapid repair of both their electric and internal communications systems when there are outages. Electric utilities' service restoration expertise and staffing resources are on an equal footing with those of conventional telecommunications providers. The telecommunications companies have a complementary edge in experience in their core business (Internet connectivity, dial tone, cable TV, etc.), and may have an advantage in marketing and related skills. Also, electric utilities have an obvious advantage in that they are connected to nearly every house, apartment, and business in the country. "For them to add information-carrying capability to their lines could be cheaper, easier and more socially constructive than for either the cable or phone companies, especially if done in cooperation with others." (Rivkin, 1993) It's a synergistic situation, wherein cooperation between the two could actually attract more customers for both.

Still another advantage that could result from cooperation between electric utilities and telecommunications providers is a sharp reduction in the future costs of making and delivering power, while simultaneously capitalizing the cost of building the Information Superhighway. (Rivkin, 1993) Perhaps M. Khademi summarizes it best:

"With the higher capacity of the newer digital transmission systems, the utilities' advantageous position in terms of land ownership and right of way, and their ability to secure capital funds for building telecommunications infrastructure, it has also become practical for power utilities to consolidate some of their telecommunications requirements, stabilize their ever-increasing costs of telecommunications services, and even form joint ventures in telecommunications and use telecommunications as a secondary source of revenue." (Khademi, 1997)

Cooperation in the form of "alliances" with telecommunications service providers may yield greater long-term benefits as each industry sticks to doing what it does best while using and sharing each other's technology, tools, and infrastructure. Both electric utilities and telecommunications service providers may find it more beneficial to begin—or continue—to explore the use of existing private and public networks, instead of rushing to build new ones. Additionally, outsourcing or "resourcing" all or certain network functions such as implementation, maintenance, and management continues to be a viable alternative to entering the telecommunications arena as a direct competitor. (Ashworth, 27)

Electric utilities are advised to look very hard at limiting investments in often high-risk, "beyond the meter" technologies to those that are "cheaper, easily integrated, stable today, and synergistic with future info-way platforms." (Ashworth, 26-27) Utilities too quick to invest in projects they may not understand, or are not technologically capable of keeping up with, may find their investments have become losses rather than gains.

Although the considerations above by no means comprise an exhaustive list, they help to illustrate the point that cooperation may have more long-term benefits than does direct competition. While there is no denying that competition has been successful under the right circumstances, it may be appropriate for decisionmakers to step back and explore the benefits stemming from the sharing of technology, tools, and infrastructure. Economics and politics play major roles in both the municipal power utilities and telecommunications industries. But officials in both industries, plus elected and administrative officials, should seriously consider cooperation as a strong alternative to the competitive frenzy of the last couple of years that has, in many cases, led to lower service levels, less innovation in areas where it is most needed, and higher costs to both industries and the consumers they serve. For evidence, one needs look no further than the recent troubles with electricity deregulation in California (see SECTION G above).

The message here is that, although many electric utilities are more than capable of becoming effective competitors in the telecommunications marketplace, some others may lack the technology, the know-how, and the business sense necessary to undertake such an endeavor. In the latter cases, the prospect of “partnering” with private telecommunications services providers can mean the survival, growth, and prosperity of an electric utility through the sharing of infrastructure, information, and technology. As with any healthy partnership, the driving forces are the prospects for mutual advantage. The telecommunications partner gains the electric utility partner’s service restoration expertise, infrastructure expertise, and infrastructure itself; the utility partner gains the telecommunications partner’s industry know-how and marketing skills. It’s a win-win.

But interestingly enough, many of the same arguments marshaled against entry by the electric utility as competitor can be upset if the assertions are applied logically against the cooperative entry scenario. That is, those that oppose electric utilities as telecommunications competitors, but accept the idea of cooperation, should ask themselves if the basis of their opposition to competition is logically consistent. Many opponents claim the electric utilities are not equipped to be effective competitors, and therefore should be limited to a partnership role. But if that were the case, would one partner in a cooperative venture want a mate it judged (correctly or not) as deficient? The answer is clearly no. If the perception of the prospective telecommunications partner were that the electric utility partner isn’t up to the task, then the partnership form of utility entry becomes just as ineffective as the competitive form. If the logic behind this point is stipulated, a new rationale then forms that favors a particular technique for entry by an electric utility as a competitor into the telecommunications market—namely, buying in, via acquisition of an outside telecommunications firm that does have the necessary capabilities that are perceived to be, or may in fact be, lacking in the utility. Recall that one of the case study subjects used this method to considerable advantage.

All of this only serves to confirm that there are choices—choices governed by individual circumstance. “It all depends.” Let the utility executive beware, but at least he or she is coming to the arena armed with the background of this paper.

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## **J. The Public Power Utility’s Leadership Role In The Smart Community**

For many, the most promising and exciting dimension of the Information Superhighway [and other telecommunications advancements] is its ability to strengthen existing communities and to create new ones among like-minded people. This capability may, indeed, generate the most lasting effects of the Information Age. (US Advisory Council on the National Information Infrastructure, 1996)

Throughout this paper, the emphasis has been on the legal atmosphere and the practical applications for electric utilities of entry into the telecommunications market. Important considerations have been identified as key determinants of the feasibility of any particular utility’s entrance. However, there are two dominant aspects that must be reemphasized and reexamined: 1) that of the electric utility’s role as a local and regional leader in the community; and 2) the importance of communication among the utility, the surrounding community institutions, and especially the citizens served. These two aspects, leadership and communication, form the basis for the technology utility’s place in the “smart community.” The best way to understand the overriding relevance of these aspects is to first define the “smart community.”

A “smart community” is a community in which members of local government, business, education, and healthcare institutions, and the general public, understand the potential of information technology, and form successful alliances to work together to use technology to transform their community in significant and positive ways. (International Center for Communications, 1997)

Public power utilities are definitely members of their respective communities. However, communication between and among the utility and others has often been limited to service and business contacts, or has been nonexistent. This must change if utilities, their community, and their region are to survive in the new global economy. Those utilities that want to survive must immediately take the lead in establishing a dialogue with community, political, and economic leaders, and the general public, to facilitate comprehensive, unified action among all. This is the key to success as a smart community. Unified efforts enable the community to leverage resources and projects to develop and benefit from telecommunications infrastructure and services much earlier than otherwise would happen. Instead of incremental change, a transformation occurs that increases choice, convenience, and control for people in the community as they live, work, travel, govern, shop, educate, and entertain themselves. (International Center for Communications, 1997)

The real key to survival for all in the Information Age is to keep up with the advances in telecommunications, and to take advantage of, on larger community and regional scales, the abundance of applications and uses. The only way to do this is to talk to each other and work together to ensure prosperity and the best quality of life possible. The “trick” in telecommunications is communication.

To accomplish such effective communication, utilities must see that what is most important on their parts is the desire to become participants. In the smart community, utilities take on dual participatory roles. On the one hand, they are “influencing organizations” that work together with other members of the public sector, advocacy groups, and nonprofit institutions and organizations in the coordination of various community resources. Their motivations may be many, but they have three principal reasons for becoming involved. First, they have the need “to find effective, inexpensive ways of disseminating information to citizens.” Second, they understand the “renewed importance of community and local initiatives as focal points for problem solving and identity.” Finally, utilities and other influencing organizations see the need to find new avenues of economic development. (International Center for Communications, April 1996)

The second participatory role that utilities take on is as “infrastructure providers” who are involved in supplying particular goods and services to their community. By working together with private telecommunications services providers, utilities can leverage the motivations of these entities. First, by their profit-driven nature, telecommunications services providers have a powerful interest in exploring, entering, and growing new markets that require the use of existing telecommunications infrastructure, the self-same infrastructure readily available through electric utilities and their networks. The advantage to electric utilities comes from the sharing of that interest in constantly moving forward and innovating, even if, as in the case of municipal utilities, the drive is not for profit *per se*, but for sufficiency in the revenue stream to assure accomplishment of their mission. Since many electric utilities are experts in their own field, and not in telecommunications technologies, the ability to “piggyback” on the telecommunications industry’s expertise is there for the asking (or even taking, should electric utilities want to buy the firms that possess it). Second, local and national entities within the public broadcasting networks, as well as local cable access providers, continue to explore new ways of entering cyberspace. (International Center for Communications, April 1996) Electric utilities have a vast amount of bandwidth infrastructure available for both themselves and these other interests. Since it uses only three percent of its network capacity, the utility industry can work with the private sector not only to promote exploration but also reap its rewards.

None of this can be successfully accomplished without electric utilities becoming active and proactive, as leaders and as participants, in the smart community. Utilities must learn to continually improve their services, become more accessible and citizen/customer oriented, and do their part to ensure the economic and communal development of their community, their region, the nation, and the world. In the interest of local and regional

survival in the Information Age, it is imperative that utilities find ways to embrace and enhance technological and economic development through cooperation. “Communities marshaling these requisite human and economic resources to become ‘smart’ will become the models of enlightened urban development in the early 21<sup>st</sup> century... [even if their] transformations may be less motivated by a desire to be innovative than by a desire to survive.” (International Center for Communications, April 1996)

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## K. Conclusion

“[The] new competitive environment...will not come about automatically. Communities must develop a coherent and compelling vision that makes it clear how the new information networks are going to promote job growth, economic development, and improved quality of life within the community; and communicate that vision broadly.... [This] is the most essential [element]: for unless a community knows precisely where it is headed and how it hopes to get there, it is unlikely to reach its destination, to its detriment and all of us who are stakeholders in this new but uncertain future.” (Eger, 1997)

“Public power systems are in a unique position to foster the rapid deployment of advanced telecommunications infrastructure in a manner consistent with the underlying goals of the Telecommunications Act and Section 706. Public power entities are directly responsive and accountable to the people that they serve, and are therefore inherently focused on providing the necessary infrastructure and capabilities that their communities need to flourish.” (Baller, Stokes & Meller, 1998)

The overall argument of this paper should by now be clear. In an age that is bearing witness to the globalization of the economy, the growing irrelevance of national borders, the resurrection of viable and powerful regions as centers of wealth, success, and innovation, the commodification of information, unprecedented advancements in telecommunications and information technologies, and the increased “wiring” of “smart” communities, the public power utilities industry needs to move more rapidly in becoming a leader in the new economy of the Information Age.

Like those regions unwilling or unable to become participants, electric utilities that lag behind will soon find themselves supplanted by the new “technology utilities.” They will lose out to those that have embraced and endeavored to improve (whether as competitor or partner) their internal needs, the delivery of an expanded variety of both entertainment and life-sustaining goods and services, the economic development and prosperity of their community, region, nation, and world, and, perhaps most importantly, the quality of life

of their citizen-consumers. The power utility of today will become the technology utility of tomorrow by becoming a key leader, facilitator, and participant in their Smart Community.

“Think globally, act locally” persists in relevance. All you have to do is get Smart, and the password is “action.” Whether the entry is via cooperation or competition, or via alliance, partnership, joint venture, acquisition, or merger, the advice is “Do something! Pick one and go for it!” The opportunity is out there, and it’s too good to pass up.

# APPENDIX I: A HISTORY OF DEREGULATION IN THE UTILITIES AND TELECOMMUNICATIONS INDUSTRIES

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## A. Deregulation In The Electric Utility Industry

Official deregulation in the utility industry has not been seen for nearly a century, not since the two decades following Edison's breakthrough. "The opening era of the electric industry was characterized by competing franchises and 'regulation by competition'...." (Thierer, 1997, quoting Robert L. Bradley, Jr., 1996) This "free market experience" lasted only from 1882 to 1907, the year in which nearly two-thirds of the states enacted legislation that created the first state commissions tasked with regulating the utilities. (Anderson, 1980) Such regulatory oversight continued to grow in scope and authority as the federal government began, especially during the New Deal era, not only to regulate the industry, but also to directly provide power itself through such federal entities as the Rural Electrification Administration (REA), the Tennessee Valley Authority (TVA), and Power Marketing Administrations (PMAs). (Thierer, 1997) This trend of more and more regulation would last until nearly the end of the 1970s, when the emergence of "independent power producers" (IPPs) marked the beginning of a new approach to power generation and supply.

The IPPs of the late 1970s and onward have their roots in the U.S. Public Utility Regulatory Policies Act (PURPA) of 1978, which encouraged them to become the leading builders of new power plants that were smaller, more innovative, and substantially less expensive than their ancestors. (Flavin & Lenssen, 1994) Although intended to encourage energy conservation through federal environmental regulation, PURPA had the ironic effect of increasing competition. "As prices fell and supplier options multiplied, it became increasingly obvious to industry watchers that a viable free market might exist in the electric industry." (Thierer, 1997) The benefits of PURPA would be further enhanced with the passage of the 1992 Energy Policy Act, which introduced wholesale "wheeling," and Orders No. 888 and 889, which "provided specific guidelines on how transmission lines [were] to be opened up to competitors on a non-discriminatory basis," and required "vertically integrated monopolistic utilities to offer access at a single-tariff rate comparable to what they would charge themselves for similar access." (Thierer, 1997)

What is most important to realize about the history of deregulation in the utilities industry is that it took less than two decades to undo what had been built up in a century.

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## B. Deregulation In The Telecommunications Industry

The history of regulation and deregulation in the telecommunications industry is rather similar to that of the electric utilities industry. As regulation of the latter focused primarily on electricity providers, the former saw the telephone companies as the principal targets. Alexander Graham Bell's invention of the telephone in 1876 would mark the beginning of the rise and fall in the levels of regulation of the industry.

The expiration of key Bell patents in 1893-94 ushered in enormous growth in the number of non-Bell service providers. From 1894 to 1907, more than 3,000 non-Bells captured 51 percent of local markets, while Bells' average returns dropped from 46 percent to 8 percent. (WRC, 1997) This lightning-fast "takeover" of the local marketplace prompted the first antitrust case, in 1913, against American Telephone & Telegraph (AT&T), which, in turn, led to the landmark "Kingsbury Commitment." "The deal framed the conditions for the telephone industry for decades to come. The company embraced federal regulation (as it would state regulation over the next several years)...." (WRC, 1997) Two decades later, the Communications Act of 1934 established the Federal Communications Commission (FCC), which simply added to the anti-competition federal policies by giving the "FCC...authority over interstate telephone service; state commissions retained responsibility for intrastate activity. This basic framework remained intact until the Telecommunications Act of 1996." (WRC, 1997)

Although the Telecommunications Act of 1996 officially ushered in the new era of deregulation, competition in the industry could be seen as early as the mid-1970s. Following nearly a decade-long legal battle against a second antitrust suit, AT&T signed the "Modified Final Judgment" (MFJ) in 1982, resulting in the spin-off of seven regional Bell companies (RBOCs) tasked with providing local exchange service around the country. The result was the growth of a new competitive market for long-distance services.

The MFJ prohibited the RBOCs from entering the long-distance market. The RBOCs' service areas were divided into a total of 160 Local Access and Transport Areas (LATAs) to define the boundary between local and long-distance calls. The independent local telephone companies, notably GTE, were not prohibited from entering the long-distance market since they were not parties to the MFJ. (WRC, 1997)

What becomes apparent when examining the histories of both the utilities and telecommunications industries is that the movement towards deregulation and the resulting competition had been building for a number of decades prior to the Telecommunications Act of 1996. The electric utilities saw the growth of effective and competitive IPPs, while telecommunications saw the breakup of virtual telephone monopolies and the subsequent (or, perhaps, simultaneous) rapid advancement in telecommunications technologies and services. This buildup would set the stage for federal action in 1996.

## APPENDIX II: FEDERAL TELECOMMUNICATIONS ACT OF 1996

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### A. Definitions

Any discussion of the Act and its meaning for the utilities industry is dependent on exactly what the Act sees as a “utility,” and what it defines as “telecommunications.” Section 224(a) (1) defines a “utility” as “any person who is a local exchange carrier or an electric, gas, water, steam, or other public utility, and who owns or controls poles, ducts, conduits, or rights-of-way...used, in whole or in part, for any wire communications.” Thus, those public or private entities providing the above-listed service(s), and having ownership and/or control of various methods of providing and supplying utility-related goods and services, may be deemed a utility for the purposes of the Act.

In its “First Report and Order (R&O) on the Implementation of the Local Competition Provisions in the Telecommunications Act of 1996,” the Federal Communications Commission (FCC) defines “telecommunications” in such a way as to include, but not be limited to, the following services, all of which focus on the transmission of information: “Cellular telephone and paging services; mobile radio services; operator services; Personal Communications Services (PCS); access to interexchange service; special access...wide area telephone service (WATS); toll-free services; 900 services; Message Toll Service; private lines; telex; telegraph; video services; satellite services; and resale services.” (Baller, 1997) What is interesting to note, although understandable given the FCC’s definition, is that Internet services are not included within the “telecommunications” definition. Instead, Internet services are defined as “information (or enhanced) services.” “The [FCC’s] justification for this distinction is that providers of ‘telecommunications’ do not change the form or content of the information designated by the user, but providers of Internet service generally alter the format of the information through computer processing applications such as protocol conversion and interaction with stored data.” (Baller, 1997) For purposes of this paper, however, Internet services may be considered within the realm of telecommunications.

## APPENDIX III: OPPOSITION TO ENTRY INTO TELECOMMUNICATIONS BY UTILITIES

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### A. Summary Of *Ex Parte* Filings

The context is that SBC Communications is bringing action before state regulatory commissions and state courts to bar entry into telecommunications by electric utilities. SBC contends that Congress was not thinking about publicly owned utilities when it stated in the Joint Conference Report accompanying the Telecommunications Act that “explicit prohibitions on entry by a utility into telecommunications are prohibited under [Section 253].” (SBC Submission at 6, quoting S. Conf. Rep. 104-230 at 127) SBC is motivated by its claim that it has now lost 17 percent of the business access lines to competitors in Missouri.

The American Public Power Association has joined a group of Missouri municipalities in filing briefs with the Missouri commission and the Federal Communications Commission to reject the SBC actions (the first was filed on September 14, 1999, and the second on July 31, 2000). APPA represents the interests of approximately 2,000 public power utilities located in all states except Hawaii. Approximately three-fourths of these utilities serve rural communities that have less than 10,000 residents.

In APPA’s words, “Many such utilities have stepped forward to fill voids in communications services left by the private sector, just as they stepped forward to provide electric power decades ago when privately-owned electric utilities literally left their communities in the dark while focusing on more lucrative urban markets. In the absence of state barriers to entry, many additional public power utilities could help our nation overcome the growing ‘Digital Divide’ between urban and rural areas.”

A summary of the main points made in the briefs follows.

- Section 253(a) of the 1996 Telecommunications Act does not authorize a state to allow entities to provide some telecommunications services but not others. It prohibits states from enacting measures that may have the effect of prohibiting the provision of “*any* interstate or intrastate telecommunications service” (emphasis added).
- The July 31, 2000, brief contains the powerful statement that “...Congress repeatedly and unequivocally manifested its intent to subject public power utilities to the same burdens and to afford them the same benefits and protections as all other electric utilities seeking to provide telecommunications services.”
- Relevant Congressional statements on the issues are cited in the briefs:
  - From Congressman Dan Schaefer to FCC Chairman Reed Hundt: “Section 253 requires the Commission to “reject any state or local action that prohibits entry by *any utility, regardless of the form of ownership or control;*”

- Letter from Senator J. Robert Kerry to FCC Chairman Reed Hundt: “By using the term ‘any entity’ in section 253, *‘Congress intended to give entities of all kinds, including publicly-owned utilities, the opportunity to enter these markets;’*”
  - Observation from Senator Trent Lott (R-MS): “The 1934 PUHCA is amended to allow registered electric utilities to join with *all other utilities* in providing telecommunications services, providing the consumer with smart homes, as well as smart highways.”
- Any supposed “perceived conflict of interest” (regarding regulatory bias) simply does not exist, as telecommunications providers, including municipal providers, are regulated by the Missouri Public Service Commission rather than by local governments.
  - Importantly, in a related case in Texas, that state’s Commission rejected this very argument, finding that:
 

“[W]e recognize that entry by municipalities into telecommunications may raise issues regarding taxpayer protection from the economic risks of entry, as well as questions concerning possible regulatory bias when separate arms of a municipality act as both a regulator and a competitor. We believe, however, that these issues can be dealt with successfully through measures that are much less restrictive than an outright ban on entry, permitting consumers to reap the benefits of increased competition.”
  - The Texas Commission expressly declined to decide “whether section 253 (of the 1996 Act) bars the State of Texas from prohibiting the provision of telecommunications services by a municipally-owned electric utility.” (Order ¶ 179)
  - In upholding the *Texas Order*, the *City of Abilene* court took pains to point out that its holding was limited to municipalities, such as Abilene, that do not operate their own electric utilities and that the legislative history applies only to public power utilities.
  - Members of the Texas Commission have repeatedly and uniformly stated that, from a policy standpoint, they support the provision of telecommunications services by public power utilities. Indeed, in paragraph 179 of the *Texas Order*, the former Commission urged other states not to do what Texas had because “[m]unicipal entry can bring significant benefits by making additional facilities available for the provision of competitive services,” and laws such as the Texas ban on municipal entry are also unnecessary, because any concerns about taxpayer protection or possible favoritism “can be dealt with successfully through measures that are much less restrictive than an outright ban on entry, permitting consumers to reap the benefits of increased competition.”
  - Having dealt with the electric power industry for more than a century, Congress was well aware at the time it enacted the Telecommunications Act that public power utilities are much more like investor-owned utilities than they are like municipalities that do not operate electric utilities but merely exercise regulatory functions. As a

result, with one limited exception, Congress made no distinction between public power utilities and other electric utilities.

- As a general matter, public power systems and investor-owned electric utilities have common features that municipalities, as such, do not have. Specifically, both investor-owned utilities and public power utilities have:
  - Substantial need for advanced telecommunications services and infrastructure in their core business of providing electric power;
  - Excess telecommunications capacity that has been built, or is contemplated being built, at incremental cost, and that would lend itself to immediate use in providing or facilitating the provision of competitive telecommunications services;
  - Decades of experience in providing high-technology services to industrial, commercial, and residential consumers;
  - Substantial experience with customer billing, technical assistance, and maintenance;
  - Commercial enterprise operations that are expected to earn revenues over and above costs;
  - Payment histories to local governments. Investor-owned utilities pay local taxes, whereas public power utilities make payments that are in lieu of taxes, and are often at rates that exceed the tax rates that investor-owned utilities pay.
- More specifically, regardless of their status under Missouri law for other purposes, municipal electric utilities in Missouri also operate like investor-owned utilities. We illustrate this by reference to City Utilities of Springfield.
- The briefs do not challenge SBC's claims about the "estimated lines served by CLECs" and "percentage of business lines lost to competitors" in SBC's chart submission entitled "Missouri Competition Numbers." The briefs do note, however, that even if SBC's figures were correct, they would be of minimal value because: (1) they include resold lines and thus do not reflect the true extent of facilities-based competition in Missouri, even for business access lines; (2) they include only business access lines and thus say nothing about competition in the residential market; and (3) they do not separate urban and rural access lines and thus do nothing to disprove the existence of a Digital Divide in Missouri.

"For all of these general and specific reasons," say the briefs, "we submit that the Commission should find that Missouri's municipal electric utilities operate in ways that are virtually indistinguishable from the operations of investor-owned electric utilities and that Congress intended that Section 253 protect all utilities, however owned, from state barriers to entry."

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## **B. APPA Article On Barriers To Entry**

“Overcoming Anticompetitive State Barriers to Entry for Municipal Utilities in Telecommunications,” January, 2000.

### **■ Summary**

For more than a century, public power utilities have played a vital role in furnishing essential local competition in the electric power industry. This competition has kept prices low and quality of electric service high in the communities that operate their own electric utilities. In the absence of barriers to entry, public power utilities can now play a similar role in telecommunications.

Clearly, in enacting the Telecommunications Act of 1996, Congress envisioned that utilities, with their existing internal communications infrastructure, could help to further the goals of competition by providing an alternative means through which new competitive communications services could be offered.

Yet, in an effort to undermine this objective, existing cable TV and local telephone interests are working to prevent municipal utilities from providing telecommunications services within their own communities. These entities are utilizing their vast resources and longstanding relationships with state legislatures to inhibit the development of competition at the state level. In an effort to achieve in the states what they could not obtain at the federal level, they have pushed legislation in eight states to create barriers to entry for municipal utilities in telecommunications.

This unfortunate trend is expected to grow unless Congress and the Federal Communications Commission (FCC) make it clear that such statutes are out of step with the intent and language of the Telecommunications Act of 1996.

The FCC now has before it an opportunity to address this problem. Several municipalities in the State of Missouri have jointly asked the FCC to override a Missouri state statute that conflicts with the Telecommunications Act by prohibiting the provision of most telecommunications services by municipalities and municipal utilities. A plain reading of the language of the Telecommunications Act, and accompanying report language related to utilities in particular, makes it very clear that this barrier to entry must be nullified. A strong preemptive FCC ruling in this case will effectively bring an end to this ongoing effort to frustrate the goals of the Telecommunications Act through enactment of restrictive state statutes, and will reinstate the long tradition of local control that has been the driving principle behind municipal utilities since the inception of the electric industry over a century ago.

## ■ Regulatory And Legislative Background Regarding State Barriers To Entry For Municipal Utilities In Telecommunications

In the Telecommunications Act of 1996, Congress sought to open the telecommunications marketplace to all potential competitors, including electric utilities without qualification. To ensure that those interests with existing market control over various aspects of the telecommunications industry would not be able to undermine the Act's procompetitive policies at the state and local levels, Congress included the following language in Section 253(a) of the Act:

“No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service.”

In enacting Section 253(a), Congress was well aware of the vital role that public power utilities could play in bringing competition to telecommunications markets, and took steps to include explicit language in the Act's conference committee agreement that reaffirmed the drafters' intention that all utilities be free from state barriers to entry. The Conference Committee Agreement specifically noted the conferees' clear understanding that “electric, gas, water or steam utilities” might “choose to provide telecommunications services,” and they confirmed their understanding and intent that “explicit prohibitions on entry by a utility into telecommunications are preempted under this section [253(a)].”

Several recent letters to the FCC from Congress have reaffirmed that this provision was designed to ensure electric utility involvement in the provision of telecommunications services.

The petition that has been filed by the Missouri municipals asks the FCC to examine closely this legislative history that supports the involvement of municipal utilities in telecommunications. Senator Trent Lott (R-MS) commented upon passage of the Act that its goal is to “construct a framework where everybody can compete everywhere in everything.” To fully achieve this objective, the FCC must take action to eliminate any state-enacted barriers to entry for any potential competitor.

## ■ How State Barriers To Entry For Municipal Utilities In Telecommunications Hurt Communities And Consumers

The vast majority of public power utilities in the U.S. are located in cities with less than 10,000 residents. Many of these municipal electric utilities developed largely due to the failure of private utilities to provide electrical service in many rural areas because they were viewed as unprofitable. In these cases, communities formed municipal electric utilities to do for themselves what they viewed to be of vital importance to their quality of life and future economic prosperity.

Once again, public power utilities are well-positioned to bring the infrastructure of the future to their communities by helping to facilitate the development of competition in the telecommunications industry, and the offering of new services in the very areas that may not receive them otherwise. Ultimately, preventing municipal utilities from providing telecommunications services within their own communities will not only inhibit competition in telecommunications, but it will also unfairly limit the telecommunications services available to residents of smaller communities, and impede economic development and growth in numerous rural communities throughout the country.

Moreover, this debate is not strictly related to competition between public and private sectors, despite the local telephone and cable TV companies' efforts to cast the issue in that light. In fact, a large percentage of municipal utilities are planning to provide communications services through partnerships with private companies, or by outsourcing the provision of these services entirely. It is here that many new market entrants will have the opportunity to bring enhanced competition to many communities. If those who currently control local telephone and cable services are able to inhibit the ability of municipal utilities to provide the means for these new market entrants to provide competitive services, customers will be left with less choice and higher costs. If the goal of Congress and the FCC is to ensure that the benefits of competition flow to consumers, it is clear that municipal utility involvement in telecommunications can only help to achieve and further this end.

Finally, it is important to note that municipal utilities are directly accountable to the communities they serve. Thus, the decisions made by locally owned utilities reflect the needs and demands of their citizens.

Given the importance of telecommunications infrastructure and services to the future of our nation's communities, it is vital that the principle of local control is not eroded by the efforts of the large regional incumbent monopolies who are arguing to take these decisions out of the hands of communities and their locally elected officials.

## ■ **Congressional Action**

Several members of the House and Senate have weighed in with the FCC to oppose state barriers to entry for municipal utilities in telecommunications, and urge expeditious approval of the Missouri municipals' preemption petition. In addition, this issue was raised by the Senate Judiciary Subcommittee on Antitrust, Business Rights and Competition Chairman Mike DeWine (R-OH) during an oversight hearing on the development of competition in the telecommunications industry, which included FCC Chairman William Kennard.

## ■ **APPA Position**

The FCC, in implementing the Telecommunications Act of 1996, should resolve all questions of interpretation in ways that would permit and encourage public power systems to become fully engaged in providing telecommunications services or in facilitating the provision of such services by others. Specifically, APPA urges the FCC to take expeditious action to approve the preemption petition that has been filed with the Commission by the Missouri municipal utilities to override state barriers to entry for public power utilities in telecommunications, and prevent further state action in this regard.

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