Becoming a Smart City

Is it right for everyone?

By: Daniel Peterson

An Enticing Vision

As the information age continues to connect the world in ways we never thought possible even just a decade ago, local governments have found themselves often on the outside looking in. As municipalities seek to catch up, there is a growing and increasingly enticing notion building amongst municipalities: that of becoming a “smart city.”

But, what exactly is a “smart city?” The answer to that question often times depends on who you ask. Generally speaking, a smart city is one able to manage its assets and improve efficiencies by using information and communication technology. The assets of a city include law enforcement, fire and rescue, traffic and mass transit, water and sewer, waste management, and other community services. Becoming “smarter” includes pursuing strategies to connect hospitals, schools, libraries, electrical and communications networks, parking meters, etc. The overall goal is to improve taxpayer value by streamlining services in ways available through the advent of technology and wireless connectivity.

Smart cities can employ thousands of computerized sensors to gather and transmit information along fiber optic cables that have enormous capacity to contain and transmit data. Based on the use of technology at near light-speed to transmit data, inefficiencies can be corrected, future planning can be maximized, and the quality of citizens improved. The vision is, in theory, intoxicating.

A Realistic Look

A municipality’s desire to become a smart city raises two questions. First, what does the city want? In other words, to what degree are the value and benefits truly needed and desired by residents? Some cities may only need to enhance communications between city management, first responders, law enforcement, and infrastructure such as road and sewer maintenance. Other cities may perceive a need for more elaborate smart services. What a city needs and why are important questions for taxpayers.

Balancing the desire-need proposition is a critical second question: How much will improvements cost taxpayers and what is the best way to meet their needs? As an example, the expenses of laying “backbone” fiber optic cables and connecting sensors are only the first (and perhaps, in the short term, the most costly) expense. On-going maintenance of such a system and on-going staffing needs are recurring costs requiring additional consideration. Within this context, it is prudent for a city or county to consider whether or not private market providers already have (or would provide) the infrastructure, expertise, and experience to meet the need. Such a “look before you leap” approach to government can save enormous sums of taxpayer dollars, avoid unforeseen future problems, and show elected leaders as responsible financial stewards and effective managers of physical assets. Where such potential private “partners” exist, local government would be wise to clearly define need and utilize the public procurement process to determine whether or not private sector providers would be the best alternative.
**A Tantalizing Temptation**

Some cities have launched their own more comprehensive vision to not only employ fiber optics technology for city use, but also to become a utility/communications provider. In the mid-2000’s in Florida, some cities considered providing their own telephone communications services. Many thought by becoming a provider, they could create a new, consistent, and profitable revenue stream. When some cities failed to generate a profit, taxpayers paid for bail outs through additional taxes (or by government back-filling deficits with money designated for other city needs). The results were negative local economic impact, poor service and unhappy constituents. In response, the Florida Legislature passed laws to protect taxpayers from government services gone bad. The Legislature enacted a law requiring a potential government market entrant to first obtain a “certificate of necessity” or a “certificate of authority” through the Florida Public Service Commission. An applicant is required to show it has “sufficient technical, financial, and managerial capability to provide such service in the geographic area proposed to be served.”

Additionally, a municipally-owned provider can only operate if it:

1) Separately accounts for the revenues, expenses, property, and source of investment dollars associated with the provision of such services;
2) Is subject, without exemption, to all local requirements applicable to telecommunications companies; and
3) Notwithstanding any other provision of law, pays, on its telecommunications facilities used to provide two-way telecommunications services to the public for hire and for which a certificate is required pursuant to chapter 364, ad valorem taxes, or fees in amounts equal thereto, to any taxing jurisdiction in which the municipality or other entity of local government operates. Any entity of local government may pay and impose such ad valorem taxes or fees.

**The Data of Experience**

In a study published by the University of Pennsylvania’s Center for Technology, Innovation, and Competition, authors Christopher Yoo and Timothy Pfenninger identified 88 municipal fiber projects. Only 20 of the 88 projects even separated broadband operations from the financial results of other utilities (a major red-flag for public accounting). The remaining findings were not a stellar endorsement:

“Of the 20 municipal projects that report the financial results of their broadband operations separately, 11 generated negative cashflow. Unless these projects substantially improve their performance, they will not be able to meet the costs of current operations let alone generate sufficient cash to retire the debt incurred to build the project. For the nine projects that are cash-flow positive, seven would need more than sixty years to break even. Only two generated sufficient cash to be on track to pay off the debt incurred within the estimated useful life of a broadband network, which is typically projected to be 30 to 40 years. One of the two success stories is an industrial city with few residents that is unlikely to serve as a model for other cities to emulate. Regression models based on the data and the case studies of individual projects underscore the difficulty that municipal fiber projects face in becoming financially viable.”

**A Cautious Approach**

For municipal organizations, great caution should be used before deciding to use technology in becoming a smart city, much less a competitor with private companies. The experience of other public organizations documents how fiscally risky it can be. Once the door is open to mass information gathering, it can often be difficult (or impossible) to close. Data collected from devices and individuals can be used for good, but it can also be used to invade privacy. Cameras can be used to solve crimes, and they can be used to surveille people. Sensors can be used to track individuals via their mobile devices, with or without their knowledge. Government efficiencies are commendable. Nevertheless, we must give tremendous weight to the potential negative consequences. Are we willing to pay the price to have cameras or sensors recording our every move and decision? The issues surrounding such decisions are serious, deep, expensive, and complex. Making wise policy choices requires solid community leadership, an awareness of the risks, a commitment to fiscal responsibility, and strong safeguards against government abuse. The issues need to be researched, discussed, and debated in an open forum. The future we end up with depends on it.

Dan Peterson is the Director of the Center for Property Rights at The James Madison Institute.