Chapter 4.18
An Evaluation of U.S. City Government Wireless Networks for Mobile Internet Access

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ABSTRACT

The purpose of this chapter is to provide guidelines for city governments considering implementing large-scale wireless networks to provide Internet access for their citizens and businesses. Case studies of cities in the United States that have implemented wireless networks will be evaluated in the context of opportunities and potential challenges. Some key considerations discussed in this chapter involve free versus fee-based models, security considerations, conflicts with local telecommunications companies, and network support. Opportunities to benefit police and emergency services are examined in terms of potential benefits as well as considerations of security in mission critical situations. Strategy guidelines will be presented as a means for providing structure to this decision-making process.

INTRODUCTION

The spectrum used for wireless technology is under FCC control, but is not charged a usage or license fee. This simple fact has many cities looking at the opportunity of providing wireless access to local residents and businesses. Some municipalities have a business model that provides this service for free, while others are considering the options for charging some type of usage fee. Many issues come into play as city government administrators and boards evaluate the opportunities and potential problems associated with taking on the responsibility of implementing and maintaining a wireless network that provides residents with new conveniences and flexibility afforded by mobile Internet use. There is also potential benefit to businesses to enhance visibility and marketing efforts at a cost less than telecom-

munications companies or other profit-oriented businesses might provide.

Evaluation of long-term benefits for the municipality is essential and yet difficult to evaluate given the fast changes in technological developments. Should city governments even get into this business of mobile Internet access? What are the decision variables? This chapter will help simplify the decision process by providing analysis of city case studies and the current state-of-the-art in terms of benefits and potential drawbacks.

The major objective of this chapter is to evaluate the options for U.S. city governments considering the implementation of large-scale wireless networks to provide mobile Internet access to residents and businesses. Several cities within the United States have already successfully implemented these systems for their residents. Case studies of cities that have implemented wireless networks will be examined to provide insights into the opportunities and potential challenges that are unique to government entities. Revenue generation is a key issue in the overall strategy and decision process. This chapter will provide a discussion of the pros and cons of implementing wireless networks in the context of unique issues faced by city governments.

BACKGROUND

Currently, there is very little research and literature addressing the issues of wireless Internet implementation for government entities. The technology is relatively new in this environment and cities have only recently begun experimentation in this arena. Most of the literature currently available is in trade publications and press releases that address current issues of interest to business and government leaders. The focus of this chapter is on city governments in the United States. Similar trends and issues are emerging in other parts of the world as well.

A major issue surrounding municipal ownership of wireless networks involves competition with the telecommunications companies. Most telephone and cable companies oppose community efforts to offer wireless Internet and in many cases have lobbied to stop municipal Internet zones (DeGraff, 2005). Those favoring municipalities in these efforts believe legislation will ultimately impact America's ability to compete globally. It is essential that all Americans have access to Internet services in order to benefit from the higher standard of living afforded by the Internet. Those without access will be left behind in the rapidly evolving marketplace. According to the National Telecommunications and Information Administration, 40% of Americans do not have dial-up access to the Internet at home and 80% do not have high speed access. One out of four Americans do not use the Internet at all. This places the U.S. behind many countries in Europe and Asia. Those without Internet access cannot benefit from online advertisements for job openings and other available information on the Internet. Those who lack Internet access are typically low income, minority, less educated, and unemployed. Affordable or free Internet access could provide these members of society with the benefits of participating in an Internet-based society (DeGraff, 2005).

Income is a major factor in this divide between the Internet haves and the have-nots. Charges run on average $40 to $60 a month and prices continue to rise. Cable and phone companies claim that municipal Internet service is unfair competition. They argue that cities could still provide access to community centers, schools, and libraries through their services. Public interest groups argue that communities have a right to build their own Internet networks to offer more services at a lower cost. School districts could save considerably on current costs for high-speed Internet access (DeGraff, 2005).

Some argue that cities could better spend their money on teaching literacy and computer

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