Chapter XVI

A Secure Wireless Data Access Service for the Government of Canada

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Abstract

This chapter examines work conducted by Public Works and Government Services Canada, a department of the Government of Canada (GoC), to assess the potential for a Secure Wireless Data Access Service (SWDAS) that is envisaged to be provided as a common service to departments and agencies of the GoC. The main focus of the work has been on Wi-Fi, especially the IEEE 802.11b standard, and its application. Areas examined include technology, security, spectrum management, user surveys, applications, business, finance, service trial, future trends, and recommendations for the implementation of Wi-Fi in government. It is demonstrated that the application of Wi-Fi technology in the GoC would be beneficial for the government workforce from both a financial and a technological perspective.
Introduction

Over the past two decades, cellular telephone technology has been booming, providing people with the ability to communicate with voice virtually ubiquitously. At the same time, data communications has come to the forefront with the explosion of the personal computer and Internet markets. As a result, people want to communicate wirelessly not only with voice but also with high-speed data. In this information technology environment, Wireless Fidelity (Wi-Fi) networks were born. As this technology comes of age at the beginning of the 21st century, it is bound to affect not only the general public and private sector business but government as well.

The application of Wi-Fi services based on IEEE 802.11 standards is an imminent issue facing many government organizations. Equipment manufacturers, such as Intel and Cisco, have published business cases to demonstrate the advantages of using Wi-Fi in workplaces for both private and public sectors (Cisco, 2004; Intel, 2004). There are already many Wi-Fi hotspots on trains and in coffee shops, hotels, airports, train stations, stadiums, and educational institutions all over the world. Like the service industry and private sectors, many governments would like to have access to Wi-Fi services for their workforces in support of the m-government mobility concept. In fact, many governments around the world are undertaking Wi-Fi pilots and trials to demonstrate their competence and leadership in using this technology. For example, in the United States, the Federal Communications Commission (FCC) has installed a public access point in its building in Washington DC (FCC, 2003). In Britain, the UK e-commerce minister has plans for all libraries in Britain to have Wi-Fi access (BBC, 2003). In Australia, the Queensland Government has Wi-Fi hotspot trials in the Central Business District of Brisbane (Australia, 2003).

The Government of Canada (GoC) is likewise assessing the opportunity to apply Wi-Fi in a federal government environment. One such initiative involves a collaborative effort between the Information Technology Services Branch (ITSB) and the Real Property Branch (RPB) of Public Works and Government Services Canada (PWGSC). As part of this initiative, PWGSC has conducted a series of projects over the last few years aimed at assessing the potential of providing a secure wireless data access service (SWDAS) as a common service to departments and agencies of the GoC. The work, which is the focus of this chapter, started with the assessment of Wi-Fi technology in the laboratory, progressed to a series of service trials and pilots of increasingly more complex service scenarios, included a survey of users to determine their mobile computing business needs, and involved studies of technical, security, and operational issues, as well as a business case analysis. Although the service has not advanced beyond the pilot stage, many valuable lessons have been learned from the efforts to date.

Following this introduction, the next section describes the service concept for SWDAS. The third section discusses the technical aspects of Wi-Fi technology, covering the
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