

Chapter LII

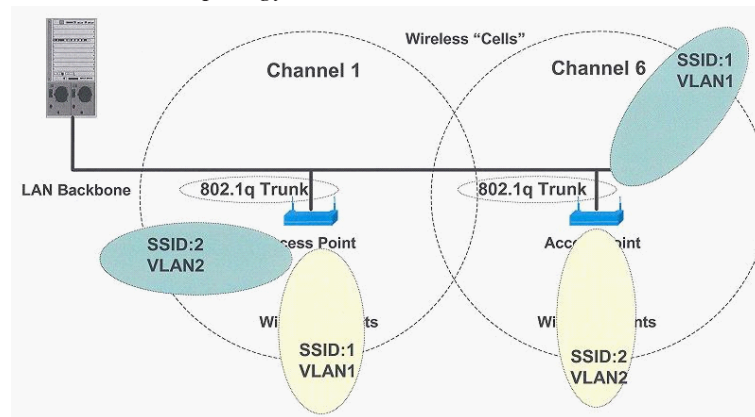
Successful Implementation of Emerging Communication Technologies in a Mobile–Intense Organization: A Case Study of Sydney Airport

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ABSTRACT

Wireless Technology is growing at a phenomenal rate. Of the many present challenges highlighted by the author, increased security is one of the main challenges for both developers and end users. This chapter presents this important security aspect of implementing a mobile solution in the context of Sydney International airport. After tackling initial challenges and issues faced during the implementation of wireless technology, this chapter demonstrates how security issues and wireless application were implemented at this mobile-intense airport organization. The decision to deploy and manage the wireless spectrum throughout the Airport campus meant that the wireless LAN had to share the medium with public users, tenants and aircraft communications on the same bandwidth. Therefore, this case study also demonstrates invaluable approach to protect unintended users from breach of existing security policies adopted by their corporate network. Authentication and data privacy challenges, as well as complete WLAN connectivity for tenants, public and corporate usage is presented in this case study.

Figure 1. Typical wireless LAN topology



INTRODUCTION

Sydney's International Airport forms the hub of aviation in the Pacific region. It is an 85-year-old site, approximately 8 kilometers from Sydney CBD. With 5 terminals with 34 international, 31 domestic, and 5 airfreight gates, it is the largest airport catering to 8.7 million international and 15.5 million domestic passengers per year (McCubben, 2003). As such, an acute need was felt to ensure a high level of timely and quality service to the entire infrastructure of the airport. Mobile technologies were considered as a crucial ingredient in provision of this service. This need continues to be corroborated worldwide; for example, at the Airport Council International (ACI) World Assembly in Santiago in November 2000, the airport community expressed the importance of a wireless infrastructure at airports managed by the airport authority (Sydney Airport Corporation Limited, 2000). The following resolution was agreed upon:

Airport Operators should assert control over the use of Wireless Infrastructure at Airports, both inside and outside terminal buildings. Tenants, concessionaires and others should use a common infrastructure for wireless managed by the Airport Operator. In return

for this exclusivity, Airport operators should constantly evaluate competing technologies, so as to maintain low costs, increased capacity and security in line with demand for the benefits of all tenants, concessionaires and others.

Meanwhile, in 1998, with the impending Sydney Olympics 2000, Sydney Airport Corporation Limited (SACL) was formed. SACL took it upon itself to embark on the challenge of becoming the sole provider of wireless infrastructure at the International Terminal and Airfield. Past experience indicated that business customers preferred to install their own networks, and wireless—still an evolving technology with no ratified security standards and ease of deployment—gave SACL a unique challenge. This chapter discusses in detail the successful deployment of mobile applications at the Sydney International Airport.

WLAN Architecture and Security Challenges

With a typical wireless LAN (WLAN; see Figure 1), transmitted data is broadcast over the air using radio waves. With a WLAN, the boundary for SACL's network has moved and is now located in many airfield remote sites. In

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