

## Chapter 4.5

# Electronic Policing: A Framework for Crime Control and Citizen Services

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### ABSTRACT

This chapter examines electronic policing (e-policing), which has played an increasing role in government-management reform and has become an important area for e-government research. Firstly, the strategic framework and development of e-policing are reviewed. A framework of mobile policing is introduced that is derived from the system requirements of both police and citizens. We examine how an e-policing system is implementing this framework for improving the effectiveness and efficiency of crime control and also providing services to citizens. The system not only simplifies the collection, storage and retrieval of crime data but also uses Bayesian analysis to give constantly refined predictions of the risks of crime in different localities, along with the factors influencing the risk levels. Finally, evaluations of the system are discussed. User evaluations of the

system allowed us to study the potential of the system for crime control and citizen services.

### INTRODUCTION

Public administrative work has characteristics that distinguish it from business. The public sector provides a wide range of services to society that are different from those provided by business firms. The government uses information and communication technology to improve effectiveness and efficiency to meet the requirements of new forms of government management and accountability and to satisfy the demand of external agencies for information. E-government can facilitate more efficient and effective applications of e-business principles, which could provide citizens, employees, government agencies and businesses with more convenient access to

government information and services (Hernon, Reylea, Dugan, & Cheverie, 2002). Police work can be viewed as being representative of government work as police officers must provide many critical services to citizens, ranging from policing duties (law enforcement, crime prevention, crime investigation, etc.) to nonpolicing duties (search and rescue, public relations, etc.). To modernize police work, a number of researchers and police agencies have emphasized the use of information and communication technology to improve effectiveness, efficiency and transparency, making police work more citizen centered and assisting in local problem-solving initiatives to reduce crime and ensure public safety (Lincolnshire Police, 2003; Liu & Hu, 2005; Pacific Council on International Policy (PCIP), 2002; Police Information Technology Organization (PITO), 2002; Spicer & Mines, 2002; Sussex Police, 2003; Woods, 2001). Crime control is one vital police task that is still problematic from a number of aspects. There is the problem of organizing the crime investigation process. Police have difficulties in crime investigation. They need support from witnesses. In order to motivate the public to interact with police agencies, police need to provide crime information and also convenient methods of communication. There have been a number of research studies and police projects relating to e-policing and crime control. E-policing strategic frameworks also have attracted the attention of police policy makers (Lincolnshire Police, 2003; Spicer & Mines, 2002; Sussex Police, 2003). A number of researchers have covered particular aspects of the application of information communication technology (ICT) to police work, such as information sharing and monitoring (Chen et al., 2003; Falcon, 1998; Zeng, Chen, Hsinchun, Dasput, Shan, Nandiraju, Chau, & Lin, 2003), forensic evidence (Smith, Puch, Wynn, Bates, Evett, & Champod, 2002), burglary prediction (Oatley & Ewart, 2003), crime knowledge management (Pendharkar & Bhaskar, 2003) and geographic information systems (GIS) for crime analysis and monitoring (Bowers, Newton,

& Nutter, 2001; Costello & Wiles, 2001; Gupta, 2001; Rich, 1999). However, in addition to crime control, police agencies also provide other services to citizens. Most of the studies and projects cited focus on only a particular aspect of police operations, without considering citizen services.

In this chapter, we report on our experience in designing and evaluating an integrated system for crime control and citizen services. This approach was implemented in a prototype system. The prototype system provides wireless GIS to support police work and also services to citizens. In addition, the research developed a Bayesian network model for analysis of the factors affecting crime risk. This chapter is organized into four sections: "Background" of e-policing is a review of e-policing systems development with research questions from this study outlined; "Mobile Policing Framework" provides insight into the development of the framework, the application scenarios of the system, system evaluation and implications for practice; "Future Trends" considers developments in technology and areas for further study; and the "Conclusion."

## **BACKGROUND**

### **Defining E-Policing**

Definitions of e-policing abound in the literature. The following definitions characterize e-policing in a variety of ways.

- E-policing refers to the use of the Internet to deliver police services to the public. A Web site, e-mail and fax are contact methods that the public can use in addition to the telephone and face-to-face channels. The ideal is to provide consistent citizen access irrespective of the access channel that is being used (Sussex Police, 2003).

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