



## SMART Policing A Proposed National Initiative

### Introduction

Police strategies and management in the United States have undergone remarkable change during the past 100 years. Many of the changes were stimulated by external pressure (e.g., economic or community expectations) for improved crime control, service, and cost effectiveness. Officers in the first modern police departments were assigned to walk small beats in local neighborhoods to preserve the peace. This policing strategy limited police service and response, so progressive chiefs in the 1920s introduced new technologies, such as the police car, two-way radios, and the telephone, to transform policing into a reactive crime strategy that focused on rapid response to calls for service. These innovations improved efficiency, but simultaneously distanced the police from the community.<sup>1</sup> During the social and political crises of the 1960s, police departments sought to broaden their fundamental mission beyond crime control by improving their relationship with the public and reconsidering their traditional reactive policing strategies.<sup>2</sup>

During the 1980s and 1990s serious crime increased to historic highs and clearance rates declined to less than 50 percent.<sup>3</sup> Local officials and police sought financial and technical assistance from the federal government to develop and enact new strategies for crime control (e.g., community policing, hot spots policing, problem-oriented policing, and crime mapping) and improved management tools (e.g., forensic DNA, ballistics identification, and electronic crime mapping) to help police “do more with less”.<sup>4</sup> The attention devoted to community and urban crime during the 1992 Presidential campaign resulted in the creation of the Community Oriented Policing Services (COPS) Office to support 100,000 additional police in local communities.

Since 9/11, local and state law enforcement entities increasingly carry out new counter-terrorism-related activities within the context of their core mission to protect local communities from crime and violence. They now recognize the need to synthesize disparate data to uncover connections among apparently unrelated activities in an effort to prevent terrorist attacks. A recent focus on terrorism prevention also has given rise to a growing regional network of state and local fusion centers and a redefinition of how intelligence is used and shared in police operations to detect and prevent criminal and terrorist activity.

As part of the recent paradigm shift towards counter-terrorism, police are adopting intelligence-led policing strategies (sometimes referred to as “information-led policing”) which have sought to use information analysis and intelligence more strategically to guide leadership decision-making and law enforcement operations. And more recently, police departments in the higher

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<sup>1</sup> Reiss, Albert J., Jr. 1992. “Police Organization in the Twentieth Century.” Pp. 51-97 in *Crime and Justice* Vol. 15, *Modern Policing*, edited by Michael Tonry and Norval Morris. Chicago: University of Chicago Press.

<sup>2</sup>Weisburd, David and Anthony Braga (Eds.). 2006. *Police Innovation: Contrasting Perspectives*. Cambridge: University of Cambridge Press.

<sup>3</sup>

<sup>4</sup> Willis, James J., 2008, “*Brief History of Police Management*”, unpublished paper, George Mason University, Administration of Justice Department

risk urban areas have also begun to make more extensive use of electronic surveillance. These efforts have been fragmented and generally not part of a comprehensive community-wide public safety plan. Furthermore, the use of the more advanced data gathering and analytic tools, including electronic surveillance, has not been widely applied to date.

This paper discusses the next evolution in policing and public safety strategy. SMART (Strategically Managed, Analysis and Research-driven, Technology-based) policing uses technology, research, and analysis to support the strategic management of police activities. Many jurisdictions are already employing some SMART policing approaches, such as the use of new technologies for more efficient data collection and display, information sharing, and data analysis. SMART policing programs can be grown in law enforcement agencies across the country through a comprehensive, federally-driven, national technical assistance program.

### **SMART Paradigm**

The primary goal of SMART policing is to improve overall police performance (as measured by clearance rates and numbers of reported crimes) through the more efficient use of police resources. Examples of efficiencies include the deployment of law enforcement assets to locations where crimes are likely to occur and improved response times for crimes in progress. SMART policing has three primary components:

- **Strategic Management:** Although many jurisdictions are using some of the new approaches and tools consistent with SMART policing, they are often not employed within the context of a larger strategic plan. Strategic management begins with an assessment of criminal and terrorist activity, threats, and vulnerabilities. This assessment may include a gap analysis or capabilities review, and is followed by the selection of strategic goals and objectives for improving police performance. Next, specific practices, methodologies, tools, and technologies are implemented and deployed to support these goals and objectives. A strategic plan should also include processes for forging community partnerships and garnering public support for policing initiatives. Finally, the program is monitored and assessed for effectiveness to guide adjustments and modifications.
- **Analysis and Research:** Research and the analysis of historical data are important for setting strategic priorities. Ongoing data analysis should also be used to monitor progress against strategic goals. Routine data analyses can also inform police organizations about trends and synthesize data across various sources. As a result, leadership can make better decisions about resource allocation and deployment.
- **Technology:** Recent advances in technology and tools can help police organizations improve data capture, display and analysis, information sharing, and surveillance activities. Tools such as the following are necessary to achieve strategic goals and support data analysis:
  - Artificial intelligence software that uses an array of data to drive deployment of law enforcement assets

- Internet communication programs that enhance situational awareness among law enforcement and community stakeholders
- Link and networking software that fuses disparate information
- Electronic surveillance technologies that employ software capable of identifying behavioral anomalies and facial features of suspects.

## **SMART Policing Examples**

New challenges and a growing sophistication and use of technology by criminal and terrorist groups have spawned innovation in law enforcement. The following are examples of approaches that are consistent with components of the new SMART policing paradigm, though none of them represent a full implementation of the concept. These examples indicate the potential benefits of SMART policing.

Absent from these examples are the counter-terrorism programs in place in the New York City Police Department (NYPD). New York's application of SMART policing tools and technologies have already been frequently cited and documented. NYPD possesses a robust counter-terrorism capability that collects and analyzes information from around the world relative to identify potential impacts in its jurisdiction. More recently, NYPD has employed electronic surveillance technologies to prevent and respond to crime and terrorism.

### Richmond, Virginia

Richmond, Virginia has recently seen a drastic drop in crime, reaching its lowest rate in 26 years.<sup>5</sup> In the last three years, violent crime clearance rates in Richmond have increased to 36 percent from approximately 30 percent in 2005 and to 45 percent in 2007. In 2007, the murder clearance rate reached a high of 82 percent. Richmond has achieved these improved clearance rates while holding the number of officers on the street relatively constant.<sup>6</sup> Criminologists have attributed much of this success and cost-savings to the city's implementation of a software application that combines business intelligence, predictive analysis, data mining, and geographic information systems to deploy officers based on the probability of a crime occurring at a specific geo-location and time.

The Richmond application extracts data from the police department's 911 and records management systems and summarizes the data in reports and on aerial photos and maps of the city. The application predicts and displays hot zones for criminal activity based on historical and current data, and incorporates variables such as time of day, weather, and the coincidence of public events. Based on the analysis of the data, officers are deployed to areas vulnerable to crime.<sup>7</sup> The Richmond application may be accessed by officers at the station or in their patrol vehicles and is constantly updated as new crime reports are added to the database, leading to near real-time adjustments in deployments. For example, by using the application on New Year's Eve in 2003, Richmond was able to use fewer officers, but still decrease the number of gunfire complaints by 50 percent and increase the number of violent weapon seizures by 246 percent.<sup>8</sup>

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<sup>5</sup> Perlman, Ellen. "To Catch a Thief." *Governing Magazine*. April 2008.

<sup>6</sup> Dopart, Brianne. "Crime Prediction Possible." *The Herald Sun (Durham-NC)*. October 5, 2006.

<sup>7</sup> Haber, Lynn. "Police Become Crime Predictors." *E-Week Channel Solutions*, January 30, 2006.

<sup>8</sup> Kanable, Rebecca. "Dig into Data Mining." *Law Enforcement Technology*, March 2007.

### London, England

London's violent crime clearance rates are improving. In 2005, London's clearance rate for murder increased by 30 percent, from 75 percent in 1999 to 95 percent in 2005.<sup>9</sup> Much of this success is attributed to the installation of the Ring of Steel, which is an extensive system of Closed-Circuit Television (CCTV) cameras and road blocks circling the city. The Ring of Steel allows law enforcement officials to monitor, detect, and track criminal activity, essentially creating a ring of surveillance and protection around the city. The cameras not only track city ingress and egress, but also are equipped with an automatic number plate recognition (ANPR) capability to screen the license plate on every car that enters the city. The system is used to detect and identify a wide range of potential offenders, from suspected terrorists to tax evaders, and from auto thieves to banned drivers. To date, over 37 million plates have been scanned, leading to the identification of over 91,000 matches for wanted vehicles and nearly 550 arrests. The Ring of Steel also has been recognized for its use in the identification of the 2005 London subway bombing suspects.<sup>10</sup>

In conjunction with the Ring of Steel initiative, as part of the Intelligent Pedestrian Surveillance System, London officials installed over four million cameras positioned on city streets, in the underground subway system, and in public areas. This initiative is useful for detecting suicide attempts, overcrowding, suspicious packages and trespassers, and for detecting developing street crimes before they occur.

With these initiatives, London police have not increased staff or the number of officers on the streets. Rather, they are leveraging technology and software. The success of these systems has led other cities to implement similar initiatives in their own communities. For example, the New York City Police Department is investing in the Lower Manhattan Initiative (based on the London Ring of Steel model).<sup>11</sup>

### Tucson, Arizona

The Tucson Police Department estimates that the investigative performance improvements resulting from the consolidation of information sources into a system called "CopLink" produced results that would be the equivalent to adding 100 detectives to the force. CopLink, nicknamed "Super Google" by the Tucson police officers, is now fully operational in 1,600 jurisdictions across the U.S.<sup>12</sup>

CopLink was developed in 1997 when researchers at the University of Arizona discovered that fragmented law enforcement databases around the State were leading to unnecessary hours and costs spent investigating criminal cases in local jurisdictions. Researchers and law enforcement officers alike recognized the need for a more effective and efficient method for law enforcement agencies to share information and collaboratively analyze problems.

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<sup>9</sup> <http://www.met.police.uk/crimefigures/>. Last accessed October 2008.

<sup>10</sup> Stecklow, Steve, Singer, Jason, and Patrick, Aaron. "Watch on the Thames." *The Wall Street Journal*, July 2008.

<sup>11</sup> Mullin, Justin. "Ring of Steel II." *IEEE Spectrum*, July 2006.

<sup>12</sup> McDevitt, Katie. "COPLink data sharing program aids crime-solving." *East Valley Tribune*. September 10, 2007.



To address this need, the Tucson Police Department piloted the new CopLink system, developed by the researchers at the University of Arizona, which integrates the agency's multiple, isolated data sources, such as its mug shot database, gang database and records management system, with similar data from neighboring police departments. This system bridges gaps between law enforcement agencies' records systems and facilitates inter-jurisdictional information sharing. Given the integration of so many isolated databases, CopLink uncovers hidden relationships and associations across multiple data sources, whether they are available locally, regionally, or nationally. Officers in the Tucson area are able to access all of the data compiled by CopLink through a user-friendly database that becomes a more powerful resource for data mining as more agencies are added to the system.<sup>13</sup>

CopLink allows officers and detectives to search the database by a suspect's name, nickname, known aliases, height, weight, color of hair, and even the placement of a tattoo. It also contains a comprehensive global database on all vehicles and firearms, and has the capability to correlate DNA information. CopLink is able to quickly run searches and display its results in a manner that is easy to read and understand. Based on an officer's need, they may use the system to create graphs and charts of CopLink data in order to visualize different affiliations among criminals and create a criminal network map.<sup>14</sup>

### **A Proposed National Initiative: SMART Policing Technical Assistance Program**

There are increasing indications that sophisticated technologies and quality analysis can improve organizational performance and control personnel costs at a time when all levels of government are experiencing severe budget constraints. Best practices and lessons learned from the highlighted cities and other communities that also are taking advantage of new analytical approaches and technologies need to be effectively transferred and made available to all of our nation's law enforcement agencies through a national initiative.

Innovation takes time and police commanders are already overwhelmed with growing responsibilities and demands for service. However, a national SMART policing technical assistance program could provide seed funding to state and local jurisdictions to procure technologies and analytic tools along with technical assistance support. Jurisdictions participating in the program would work with Department of Justice officials to produce a comprehensive public safety strategic plan that incorporates SMART policing concepts. The program should include an operational test and evaluation component to validate and improve these new techniques and approaches so they are available to communities nation-wide.

The SMART policing technical assistance program is the next logical step following the Community Oriented Policing Services (COPS) initiative that put 100,000 more officers into our communities, as it leverages technology to make those officers more effective through analysis-driven decision-making and new technological capabilities. The U.S. Department of Justice COPS Office may be the logical sponsor of this important national initiative.

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<sup>13</sup> Sink, Mindy. "An Electronic Cop that Play Hunches." *The New York Times*, November 2, 2002.

<sup>14</sup> <http://www.coplink.com/overview.htm>. Last accessed October 2008.



The community's full support is essential for the implementation of SMART policing. The national SMART policing initiative should outline the standards and protocols necessary to ensure that privacy rights are protected in accordance with the U.S. Constitution. In the examples cited above, the local community was included in the planning and implementation of the components of SMART policing. Likewise, the implementation of the national SMART policing initiative should include community outreach to emphasize the benefits of SMART policing, as well as the stringent information and privacy protection measures in place to guarantee the integrity of all operations.