

promising approaches to addressing crime

University of Pennsylvania
Jerry Lee Center of Criminology
Forum on Crime & Justice
1015 - 18th St. NW, Wash. DC 20036
Laurie Robinson, Director



December 2001

Use of Information Technology by Law Enforcement

By Kent Reichert

Over the last decade, computer and telecommunications technologies have developed at an extraordinary rate. Increased computing power, advances in data transmission and attractive and user-friendly graphic interfaces present law enforcement agencies with unprecedented capacity to **collect, store, analyze and share** data with stakeholders inside and outside of government. **Ultimately, information technology represents a tool to help local law enforcement achieve its broadened and increasingly complex mission.**

But whether this capability is fully realized, and at what pace, is not a foregone conclusion. Preliminary studies suggest that if its integration is not well managed, some aspects of information technology may meet with resistance among officers and other staff, particularly when such technology is perceived as unfairly intrusive or technically cumbersome. In addition, questions about privacy, security and cost need to be addressed.

Because of the speed of advances in the field in recent years, independent studies on the impact of information technology on policing are only now getting under way. It seems particularly important, in this respect, to examine the experiences of some of the pioneers in information technology in the field of policing.

Background

Historically, technological innovation has served as the catalyst for dramatic changes in the organization of police work and has presented both opportunities and challenges to police and other criminal justice practitioners, according to Janet Chan, a social scientist who has studied how information technology affects the way police do their jobs.¹ Noting that "information is the stock-in-trade of policing," Chan has identified three general imperatives driving law enforcement's investment in information technology:

1. A **Technology**-driven imperative to improve effectiveness and efficiency by
 - Increasing the capacity to store and process large volumes of data;

- Improving intelligence and investigative capabilities; and
 - Providing ready access to criminal records and other kinds of relevant data.
2. An **Information**-driven imperative to satisfy increasing demands to share data with external entities, including other government agencies, the public and other outside entities such as insurance companies and other businesses; and
 3. A **Policy**-driven imperative to meet the requirements of new forms of police management and accountability, in terms of probity, cost effectiveness, and procedural regularity, including systems designed to provide early warning for police use of force complaints. Under this new order, police are being scrutinized internally by management systems, surveillance technologies, internal audits and investigations and externally by watchdog agencies, public complaint systems and central auditors. As Chan notes, information technology provides a tool not only for policing citizens, but also for policing the police.

Two areas in which information technology in policing has attracted a great deal of attention are **crime mapping** and **information integration**.

In the last ten years, **computer crime mapping** has emerged as a crucial tool for law enforcement agencies. Advancements in computer technology and Geographic Information Systems (GIS) have coincided with theoretical and practical innovations in crime analysis, investigation, and crime prevention. GIS and mapping software and desktop computers now provide mapping and data analysis capabilities beyond what was possible with backroom mainframe computers as recently as the early 1990s. This technology is inexpensive and affordable for even small and budget-constrained police departments. The innovations demanded by community policing strategies increasingly adopted by U.S. police departments require that those departments incorporate a geographic, spatial, or local focus, and emphasize the importance of integrating crime mapping techniques into departmental management, analysis, and enforcement practices.

Information technology integration has received nearly as much attention as crime mapping. Advances in information technology hold out the promise that all information – taking into account need-to-know and privacy concerns – will be stored and shared electronically among all elements of the criminal justice system, including law enforcement, prosecutors, public defenders, the private defense bar, state trial and appellate courts, federal courts, corrections, probation, and parole. This promise is already being realized today. A fully integrated information system, however, requires careful planning and coordination among agencies to ensure that technological inconsistencies don't result, in the words of California Supreme Court Chief Justice Ronald M. George, in an "electronic Tower of Babel."

Highlighting Innovation: The Chicago Police Department's Use of Information Technology

The Chicago Police Department (CPD) has been at the forefront of the information technology revolution in law enforcement. Over the last decade, the CDP has introduced a number of information technology innovations centered on a policing strategy that aims at making the community a partner in the policing process.

The CPD's **Citizen and Law Enforcement Analysis and Reporting (CLEAR)** program, introduced in the mid-1990s, seeks to harness information technology to more effectively manage

the department, strengthen community partnerships, and share data with other criminal justice agencies

CLEAR's stated goals are to:

- Reduce crime and create safer communities;
- Promote proactive community involvement;
- Anticipate resource allocation needs;
- Reduce human administrative functions;
- Increase management and officer accountability

How Does CLEAR Work?

CLEAR has been designed within the context of the CPD's widely-recognized community policing program, **Chicago Alternative Policing Strategy (CAPS)**. CAPS, introduced in 1993, brings the police, the community, and other city agencies together to identify and solve neighborhood problems, rather than simply react after a crime has been committed. Problem solving at the neighborhood level is facilitated by a variety of strategies, including the assignment of neighborhood-based beat officers; regular Beat Community Meetings between the police and residents; extensive training for both police and citizens; more efficient use of city services that impact crime; and new technology to help police and residents target crime hot spots.

A key technological component of CAPS is **Citizen ICAM** (Information Collecting for Automated Mapping.) Citizen ICAM, based on the automated crime mapping system used by police officers to target crime hot spots, has been available to the general public over the Internet since October 2000. It contains a searchable database of maps, graphs, and tables of reported crime. The database contains 90 days of information and is updated daily, with a one week delay for processing new data.

Clearly, the success of CAPS depends on a reliable, accessible and current supply of information, and the CDP created CLEAR in part to manage that information flow. Under CLEAR, the CPD has developed a **Records Management System** that employs nine operational modules, including fingerprints, mug shots, criminal history record identification, internal inspections and external complaints.

Data collected and organized under CLEAR are designed to be used as:

- Predictive resource allocation to deploy officers when and where they are needed;
- Unprecedented information for management analysis and officer accountability;
- Shared problem solving information for community policing partners;
- "Pre-packaged" information to support decision making of all members;
- Information integration to manage offender flow through the criminal justice system.

Does CLEAR Make a Difference?

Prof. Wesley Skogan of Northwestern University recently began an independent evaluation of CLEAR. It will be the first independent study of the program.

According to the CPD, however, CLEAR is already bearing fruit. CLEAR eliminates redundant data entry and yields labor savings in developing management reports. And because there will

ultimately be only one information system, all stakeholders will need to learn only one system. In addition, policy changes that require new information to be captured need only be modified in one system. As a result, police personnel will have more time to solve crime. The department said that one of its divisions realized a net savings of \$8.7 million over an 18-month period. A significant savings is expected in avoided settlement costs for police abuse allegations alone. Community feedback on Citizen ICAM has also been positive.

Challenges

Creative uses of information technology have the potential to increase the capacity and effectiveness of law enforcement in fulfilling its complex mission today – including increased demands in the post-September 11 world. Implementing such systems, however, involves a host of challenges, ranging from acceptance by established bureaucracies to privacy and security concerns to practical questions like how to pay for them. No technology provides magic tools for solving complicated problems like crime. But attention to the work of pioneers in the field - like the Chicago Police Department – can provide helpful guidance for policymakers as they consider moving ahead in this promising area.

To Learn More:

- <http://www.ci.chi.il.us/CommunityPolicing/>. Chicago Police Department Web Site.
 - <http://12.17.79.6/>, Chicago Police Department, Citizen ICAM webpage.
 - <http://www.ojp.usdoj.gov/cmrc/>, Crime Mapping Research Center, National Institute of Justice.
 - <http://www.usdoj.gov/cops/home.htm>, Community Oriented Policing Services (COPS), U.S. Department of Justice.
 - <http://it.ojp.gov/index.html>, *Information Technology Initiatives* web site, OJP.
 - <http://www.nascio.org/events/1999AnnualConference/ExecSumm991004.doc>, *Toward National Sharing of Governmental Information*, National Association of State Information Resource Executives.
 - <http://www.policefoundation.org/>, Police Foundation, Crime Mapping Laboratory.
 - Kelso, J. Clark, *Integrated Criminal Justice Technologies: An Introduction*, McGeorge Law Review, Vol. 30, Fall 1998, p. 1-4.
 - Skogan, Wesley G., Harnett, Susan M., *Community Policing, Chicago Style*, Oxford University Press, 1997.
 - Chan, Janet B.L., University of New South Wales, Australia, *The Technology Game: How Information Technology is Transforming Police Practice*, Criminal Justice, Sage Publications, Vol. 1(2): p.139-159.
 - Prisoc, Steve, *Integration of Criminal Justice Systems: Plenty of Pains, But Everyone Gains*, Compiler, Vol. 19, Issue, ¾, Winter/Spring 2000, p. 4-8.
-

Kent Reichert is an editorial consultant with the Jerry Lee Center of Criminology. Mr. Reichert is a past editor of the Fels Center of Government Journal of City and State Public Affairs. He received a Master in Government Administration degree from the University of Pennsylvania in 1999.

¹ Chan, Janet B.L., University of New South Wales, Australia, *The Technology Game: How Information Technology is Transforming Police Practice*, Criminal Justice, Sage Publications, Vol. 1(2): p.139-159.