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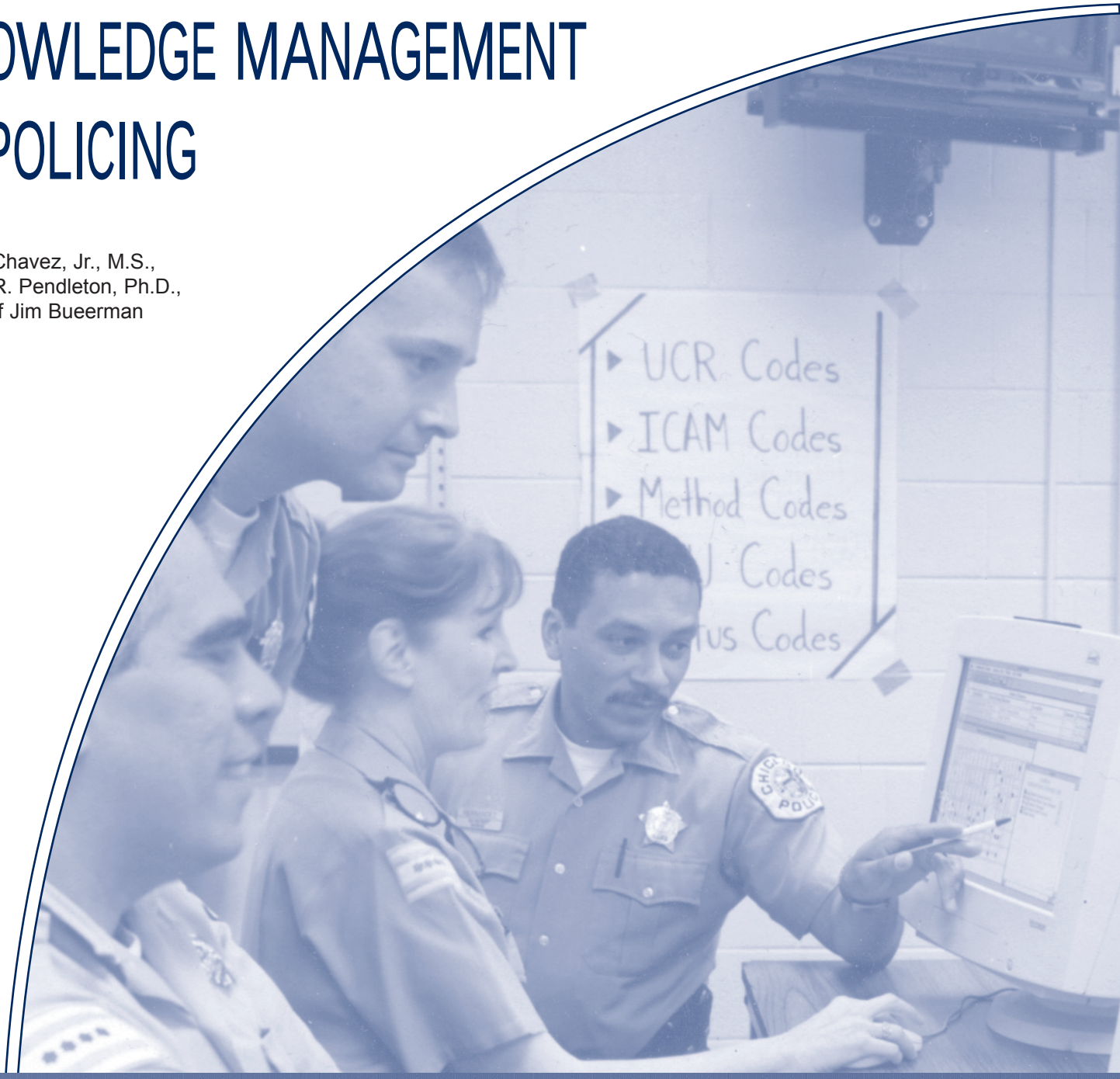
KNOWLEDGE MANAGEMENT IN POLICING

by
T. Dave Chavez, Jr., M.S.,
Michael R. Pendleton, Ph.D.,
and Chief Jim Bueerman



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INTRODUCTION

KNOWLEDGE MANAGEMENT IN POLICING

By T. Dave Chavez, Jr., MS, Seattle Police Department

Arguably, the most neglected topic in the recent era of police innovation has been the central role of "knowledge", particularly "implicit knowledge" or knowledge stored in the minds of rank and file police officers. Such knowledge, usually gained from years of experience, can be crucial in providing an effective means for analyzing problems and efficiently performing various police functions. Operating on the premise that such knowledge represents extremely vital and essentially priceless "intellectual capital", it is suggested that, perhaps, this knowledge should be more strongly considered and managed as part of any law enforcement organization. In the following articles the authors provide information and insights from various research inquiries that may be helpful for any law enforcement organization.

In the article entitled, *"On The Threshold Of An Innovation: Police And The Management Of Knowledge"* the author undertook a study of Knowledge Management (KM) in the arena of policing advanced on the informed assumption that police may be engaged in KM activities and that these activities may actually form what has been termed "innovation clusters", that when taken together, comprise a police model of KM. Results suggest that police are much more involved in collaborative activities (i.e., Knowledge Management) than the conventional view of the police would suggest.

The article entitled, *"Anatomy of A Police Innovator: A Case Study of Knowledge Management In Policing"* the authors undertake a case study of the Redlands Police Department to examine innovation leadership. The research reported addresses the lack of focused research on the process of innovation in policing and specifically addresses the question: What is the nature of innovation leadership and specifically the nature of a police innovator? Results suggest that the police innovator is more than an individual who is intrigued with new ideas, but is an *organizational place* where innovation happens. The study also indicates that the next step in police Knowledge Management is to address the need to integrate the various KM techniques into an interrelated system.

The article entitled, *"Creating An Innovation-Centric Police Department: Guidelines for Knowledge Management in Policing"*, provides a series of guidelines for adopting and implementing Knowledge Management as an organizational development and management strategy for innovation in a police organization.

CHAPTER 1

ON THE THRESHOLD OF AN INNOVATION: POLICE AND THE MANAGEMENT OF KNOWLEDGE

by: Michael R. Pendleton, Ph.D.

EXECUTIVE SUMMARY

The author undertook a study of Knowledge Management in the arena of policing advanced on the informed assumption that police may be engaged in Knowledge Management activities and that these activities may actually form what has been termed "innovation clusters", that when taken together, comprise a police model of Knowledge Management. Study methodology included an extensive review of the literature, field observations and interviews, secondary data analysis and case study analysis. One of the most interesting and universal findings in this research was a three-part response from participants when informed of the nature of the project. First, in all cases police participants expressed a complete lack of awareness of Knowledge Management and its meaning. Second, when more fully explained, participants could quickly identify efforts within their respective agencies and or areas that would "qualify" as knowledge management. Finally, when explained as a potential organizing strategy that could reshape and empower problem solving and other efforts, participants were quickly intrigued and often began to pursue, actively, a more comprehensive understanding of how Knowledge Management might "work" in their own professional venues. The results of this research show that there are Knowledge Management activities occurring within the police profession. These activities can be loosely organized into a Knowledge Management Model, which can be adopted as an organizing management strategy within a police organization. Perhaps the most surprising finding is that the police are much more involved in collaborative activities than the conventional view of the police would suggest.

ON THE THRESHOLD OF AN INNOVATION: POLICE AND THE MANAGEMENT OF KNOWLEDGE

Arguably, the most neglected topic in the Problem Oriented Policing era of policing has been the central role of "knowledge" in problem solving. This omission is significant for at least two reasons. First, knowledge and its management, is consistently viewed as a "bed rock necessity" for innovation in police problem solving (Geller and Swanger, 1995 pp 154). Herman Goldstein, in his seminal work on Problem Oriented Policing (POP) consistently emphasized the critical role of knowledge to the problem solving approach. Goldstein (1990) noted the difficulties of tapping implicit knowledge "stored in the minds of rank and file police officers" to analyze problems (pp 93), the importance of sharing knowledge with citizens as one aspect of solving problems (pp 114), the lack of a "tradition of proceeding logically from knowledge gained…to the fashioning of an appropriate response" (pp 15), and the importance of creating new knowledge through self critique (pp15) cross system knowledge sharing (pp 168-171) and research (pp 171-172). Quite simply, the management of knowledge is at the heart of Problem Oriented Policing.

Second, in an "internet world" where information flows at the "speed of thought," managing knowledge becomes a key determinant in an organizations ability to meet conventional expectations for organizational viability. Failure to effectively manage organizational knowledge can quickly define a public safety organization as inept and in need of reform, as the issuance of student visas well after the September 11th attack to dead hijackers by the Immigration and Naturalization Service clearly illustrated (Ross, 2002). In today's world of "e-government"(Williams, 2001) managing knowledge is no longer viewed as a cutting edge activity; it is now a shared expectation.

THE INNOVATION OF KNOWLEDGE MANAGEMENT

Knowledge management (KM) as an innovation and applied area of expertise has clearly been recognized by the private sector (Hansen, et. al. 1999, Gore and Gore, 1999, Hickins, 1999). While various definitions of KM are found in a rapidly developing literature on knowledge management (Loughridge, 1999), all rest on the recognition that organizations contain vast amounts of untapped knowledge and create knowledge that is not simply a resource, but an essential ingredient for competitive advantage and organizational success. Knowledge management is viewed as a central "management activity" to capitalize on the intellectual assets held by employees, databases, process knowledge, and other organizational expertise (Bukowitz and Williams, 1999). In this respect, the management of organizational knowledge is not a passive activity commonly associated with data storage, or other isolated information strategies, but a proactive strategy that is tightly integrated with operational processes and integrally related to organizational activities (Darwin, 2001). The fundamental management task of KM is the transformation of tacit knowledge into explicit knowledge. In effect, KM is the purposeful and strategic transformation of information and expertise into organizational action. Predictably, computer technology and rapidly developing software specifically to facilitate KM have advanced Knowledge Management as a central management strategy (Goodridge, 2001).

While some observers have been inclined to dismiss KM as yet another transient management fad (Holtham, 1997), there is little evidence that this is the case. In 1996, U.S. business spent $1.5 billion on KM and by mid 1999 it was estimated that this expenditure would increase to $5 billion (Newcombe, 1999). By 2001, it was estimated that expenditures could reach as high as $12 billion by the year 2004 (Williams, 2001). In 2001, a Knowledge Management Certification Board was established, as well as a KM certification program with core curriculums requiring over 60 hours of course study (Knowledge Center, 2002).

Knowledge Management is also becoming evident across the public sector, fueled by the demands of electronic government, a shrinking workforce (Williams, 2001) and social crisis. In the wake of the September 11th, 2001 attacks, several significant KM efforts have been observed. By October of 2001, the Global Knowledge Economics Council had established the Volunteer Organization of Certified Knowledge Managers to work with the Federal Emergency Management Agency (FEMA) to provide training and assistance for the Homeland Security programs to counter the effects of terrorism

(Global Knowledge Economics Council, 2001). In December of 2001, the Central Intelligence Agency (CIA) added $1 million to its ongoing investment in emerging technologies to enhance KM software development designed to track employee expertise via e-mail with the clear potential for application outside the CIA organization (University of Southern California, 1997; Goodridge, 2001).

While the government interest in KM is clearly growing, particularly in the area of national defense and public safety, it is unknown to what extent or if knowledge management as a management innovation has found its way into the policing profession. The research reported below addresses the lack of focused research on knowledge management in policing and specifically addresses the question: What is the nature of knowledge management in the police profession, particularly in a problem-solving context? The theoretical framework for this inquiry is the Diffusion of Innovations Model.

THE DIFFUSION OF INNOVATIONS MODEL AND POLICE INNOVATION

Over the last fifty years, the interest in *innovation* has converged into a field of study best represented by the *Diffusion of Innovations Model*, developed by Everett Rogers (1995). The *Diffusion of Innovations Model* provides a useful model for examining the innovations in policing, such as Problem Oriented Policing and, in this case, Knowledge Management. The model provides a comprehensive framework for understanding how a new idea, technique, or invention is generated, defined and finally adopted. Originally, the model focused upon how innovations were communicated linearly throughout a social system to lead to the adoption of the innovation. The model has evolved, now stressing the importance of the iterative nature of social interaction as an innovation traverses the various stages in an innovation process. The theory rests on the view that "uncertainty is generated by an innovation"("Rogers, 1995, xvii) which creates new, possibly superior alternatives to existing approaches to solving problems, thus leading to the search for information. This search is manifested in a social process that eventually determines the meaning of the innovation. Rather than information flowing in a linear fashion, the theory now stresses a convergence model where "participants create and share information with one another to reach a mutual understanding" of the innovation and its implementation (Rogers, 1995 xvi). Predictably, if not ironically, the theory stresses the central role of knowledge in the *Diffusion of Innovations Model*. Is it possible that the innovation of Knowledge Management is actually a key factor in our understanding, if not determining, the outcome of the innovation process?

POLICE AS INNOVATORS: ON THE THRESHOLD OF KNOWLEDGE MANAGEMENT

It has long been recognized that the most valued police knowledge has been acquired and organized around situational or street experience (Rubinstein, 1973). Goldstein notes both the importance and the difficulty of tapping and processing this tacit knowledge as central to solving numerous police problems (1990, pp93). Strong professional norms operate to constrain the sharing of this knowledge in any overt formal way, making the KM problem in policing not simply a "know how" problem but also a "know who" challenge.

Historically, knowing who to go to in policing was learned as an informal sharing among officers through story telling and other mechanisms. Formal methods, such as the Field Training Officer (FTO) coaching programs, were the outgrowth of informal mentoring systems. The impact of the closed nature of this system was that knowing who had what knowledge required not only time to learn, but also the willingness to tell. Knowledge seeking was linked to knowledge brokers and often held hostage for the empowerment of a police subculture.

In the beginning of the 1990's, the police profession experienced a dramatic shift from what was commonly considered a conservative profession resistant to change to what some see as on the "forefront of innovation in criminal justice" (Weisburd, 2001). Defined as a "philosophical revolution" (Malcolm, 1989) and the "most significant redefinition of police work in the past half century (Wilson and Kelling, 1989), Community Oriented Policing and Problem Oriented Policing became dominant themes in policing. As a dramatic response to a period of crisis where police activities had little impact on the rapid rise in crime, these innovations were diffused and adopted by the profession. Combined with the rapid rise and diffusion of computer technology, this period of innovation has been facilitated by research which in turn, has led to the adoption of even more sophisticated innovations such as computer based crime mapping (Weisburd, 2001). This transformation has not replaced the informal knowledge management system but has clearly expanded it to include a more open organizational system. In effect this move has democratized organizational knowledge.

Rogers (1995, pp 165) notes that the first step in the innovation decision process is not simply an awareness of the need for an innovation, but also the awareness of an innovation. One effect of the period of police innovation has been the increased importance of developing, accessing and applying professional knowledge to police problems (Goldstein, 1990). The knowledge-centric nature of recent police innovations, clearly establishes the need for a Knowledge Management Innovation, but has yet to produce the actual innovation. In effect, KM as a police innovation remains as part of the "untapped potential" in police administrators, for managing the innovations in policing (Geller and Swanger, 1995). It is apparent however, that individuals are beginning to recognize the need for a management commitment to an organizational based strategy for developing and applying knowledge. Geller (1997), in his address to a National Institute of Justice (NIJ) cluster conference, noted the importance of police departments becoming "learning organizations" that capitalize on their own and others experiences. This view is consistent with a now famous quote that summarizes early stages of the Knowledge Management Innovation where the focus was on institutionalizing employee knowledge, then CEO of Hewlett Packard, Lew Platt noted: "if HP knew what HP knows, we would be three times as profitable" (Fryer, 1999, pp 60).

The Diffusion of Innovations Theory treats individual level awareness of innovation as a threshold for adoption, which is a prelude for community or organizational level awareness considered an end point known as critical mass (Rogers, 1995 pp320-321). As the salience of an innovation crosses the individual threshold and is adopted, numerous people adopt and, at a point, reach a critical mass where the innovation has been institutionalized. Is it possible that the police profession is on the threshold of the Knowledge Management Innovation? If so, the next critical step will be to define the nature of the Police Knowledge Management Innovation.

THE STUDY

The Diffusion of Innovations Model has been effectively applied to study police innovation with a particular focus on the process of adoption. Rogers (1993) study of the Los Angels D.A.R.E. program illustrated the need, nature, rate of adoption, and ultimately the reformation of the program. More recently, the model has been successfully applied to study both the rate of adoption and the role of research in the diffusion of crime mapping in police departments (Weisburd, 2001). In these cases, the model was used as a retrospective analysis or what Rogers refers to as "tracer studies" (Rogers, 1995 pp 154) to follow the *innovation development process*. But, as Rogers's notes, very little research has been devoted to the attributes of innovation. As Rogers's points out, "this type of research can be of great value in predicting peoples reactions to an innovation" (Rogers, 1995 pp 204). Research on the nature of innovation is increasingly seen as critical to understanding what factors affect the process of adoption and ultimately the consequences of adopting an innovation.

It is important, however, not to commit what Rogers calls the "empty vessel fallacy" by assuming that potential adopters lack relevant experience with which to associate the new idea. Indeed the police profession has a long history of transferring experience and information into what Muir (1977) terms "judgment and understanding". This educational process "takes place constantly, sometimes formally and authoritatively, sometimes informally and extra-departmentally" (Muir, 1977pp183). Rogers notes that it is important to search these "indigenous knowledge systems" which function as a "bridge for innovations" (Rogers, 1995 pp240). This study is advanced on the informed assumption that the police may be engaged in Knowledge Management activities and that these activities may actually form what Rogers (1995, pp235) has termed "innovation clusters", that when taken together, comprise a police model of Knowledge Management.

METHODOLOGY

A multi-modal methodology was selected to accommodate the emerging nature of the research focus. This approach features qualitative methods that are of particular value when researching issues that are emerging and simply cannot be captured with a quantitative approach such as the issue under study (Atkinson and Hammersley, 1994; Pendleton, 1997). The strategy that guided collection and utilization of data was analytical induction (Glasser and Strauss, 1980), in which a researcher, upon entering the research data field, builds and revises a conception or model as empirical evidence is confronted (Strauss and Corbin, 1990). In this regard, model building was the outcome of a "data journey" guided by the Knowledge Management and Diffusion of Innovation frameworks. Initial data was linked to subsequent data until no new data was confronted and data stability was realized. Data stability is based on the triangulation of both methods and sources (Denzin, 1978).

Literature Review

An extensive review of existing literature on Knowledge Management and its application in a variety of sectors including the police profession was conducted. This review included both electronic and hard copy reviews.

Field Observations and Interviews

The author is also a principal investigator on a NIJ funded project known as the Community Mapping, Planning and Analysis for Safety Strategies (COMPASS) Initiative. The COMPASS project features the development and application of a multidisciplinary data "warehouse" within a GIS crime-mapping framework, to analyze crime and disorder problems. Police departments in three different sites in the United States are participating in this pilot project considered to be on the "cutting edge" of data driven analysis and application. In the course of working on this project it became clear that it was directly related to the topic under study and provided both a venue for examination of this issue.

Using standard ethnographic protocols both observations and interviews were conducted with key participants in this project from all three pilot sites. Participants included research colleagues, police personnel, and other professionals. These interviews occurred at several national conferences, and specific project "cluster meetings" where the participants in this project convened to discuss key issues surrounding the project. This approach for studying innovation is supported by recent analysis of crime mapping as a police innovation. In this research, it was found that the "early adopters" (Rogers 1995, pp 264) of this innovation, were more likely to attend professional conferences, have access to academic publications, and were more likely to be aware of recent research (Weisburd, 2001 pp19-21).

Secondary Data Analysis

A Department of Justice COPS Office grant funded a Research Fellowship that was initiated but not completed by another researcher to examine the application of Knowledge Management to solving street level police problem solving across the country[1]. This data was provided by the grantee agency and was used for secondary analysis. Specifically, 58 police departments from around the United States were surveyed using a phone questionnaire methodology. Data from the interview text was reviewed to determine the nature and characteristics of KM techniques currently in use in these departments. In addition, this data was reviewed to identify specific departments that could serve as a case study for this research effort.

[1] A very special acknowledgement and thank you to Ms. Colleen Laing who, as a COPS Fellow, conducted preliminary research on this topic and to the Seattle Police Department who freely shared the data for use in this effort.

In addition, past research and project data were reviewed and analyzed. This method included the analysis of process evaluation data from the now defunct SeattleWatch Program, formerly a Seattle Police Department (SPD) data driven managerial accountability process that was patterned after the COMSTAT process used around the country. Also, data from an organizational analysis of the Research, Grants & Corporate Support Unit of SPD was reviewed. The author, who was the principal process evaluator for both of these projects, collected these data.

Case Study and Interviews

Based upon the findings from the above analysis specific police departments and two outside agencies, the National Park Service and the United States Forest Service were identified as case studies for a more in-depth inquiry on the nature of Knowledge Management in Police and related public safety organizations. These cases were selected based upon either their comprehensive efforts in KM activities, and/or their "goodness of fit" to a particular aspect of the emerging Knowledge Management model. During the case study period, direct observations and interviews were conducted. Finally, written records and materials were collected and reviewed from the case study sites. Individual participants in this portion of the inquiry included the Chief of Police and other command, line and civilian employees within the selected police department. Key participants within the United States Park Service and Forest Service included fire suppression managers, law enforcement personnel, and key leaders in the "lessons learned" program.

RESULTS

One of the most interesting and universal findings in this research was a three-part response from participants when informed of the nature of the project. First, in all cases police participants expressed a complete lack of awareness of Knowledge Management and its meaning. Second, when more fully explained, participants could quickly identify efforts within their respective agencies and or areas that would "qualify" as knowledge management. This response is similar to the initial response when Community Oriented Policing and Problem Oriented Policing were first introduced in that many participants would indicate; "we have been doing that for years". Finally, when explained as a potential organizing strategy that could reshape and empower problem solving and other efforts, participants were quickly intrigued and often began to pursue, actively, a more comprehensive understanding of how Knowledge Management might "work" in their own professional venues.

Although Knowledge Management activities were encountered, and participants could agree that Knowledge Management, in some form was present in the police world, interim analysis suggested a mixed and varied definition of these activities. To facilitate initial data organization and analysis, the *Diffusion of Innovations* Model was applied to the data. Specifically, this model notes that innovations follow a path that ultimately must move beyond individual based adoption and become established within the organizational setting and ultimately the social or institutional system (Rogers, 1995). This transformation from an individual to a system based adoption and access is also at the heart of Knowledge Management where tacit knowledge becomes explicit. The classification of innovations into organizational and institutional categories, when applied to the study of KM, provides a loose organizing framework for the data encountered. In addition, the *Diffusion of Innovations Model* encourages one to be alert for what Rogers's calls innovation clusters which together can be "useful to promote a cluster or package of innovations" (Roger, 195, pp 235). Subsequent pattern analysis of the data using these loosely defined categories (Strauss and Corbin, 1990), revealed four Knowledge Management clusters, that when linked together form a distinct and potentially powerful model.

CAPTURING KNOWLEDGE: KNOWING WHAT WE KNOW

The Diffusion of Innovations Model clearly establishes that most innovations are a response to a basic need or problem (Rogers, 1995, pp 132). The literature on Knowledge Management reveals that the innovation first responded to the simple realization that organizations contain knowledge that is largely unavailable. In part, the lack of availability stemmed from the simple fact that there was little understanding of what knowledge actually exists within and around organizations. In effect, many organizations don't know what they know (O'Dell and Jackson, 1998). Much of the early efforts in KM have been focused upon what has been termed the "yellow paging" or cataloging of organizational knowledge and experiences that reside at the individual level. The purpose of this effort was to identify which individuals within the organization had what type of knowledge and to make that known and available throughout the organization.

Knowing Who: Competency Management

While participants in this study acknowledged that the informal system of individual knowledge is still well established, they consistently noted that computer technology in a web-based format, has produced the ability to expand Knowledge Management from simply an individual based system, to an organizational based approach. Software innovations along with programmatic developments in related professional areas were identified as having significant potential as KM applications in policing.

- **"Yellow Paging."** There is little data to show that police departments have adopted systematic protocols for identifying, cataloging and then making available the special skills, expertise, and experience of police employees. A process approach such as this, often referred to as "Yellow Paging," provides the first rudimentary step in allowing members of an organization to know whom to contact to access knowledge on specific topics. In policing, yellow-paged knowledge can refer to specific skills or expertise and/or specific case or problem specific knowledge. While there is no data demonstrating police application of yellow paging techniques, there is data that suggests that police are moving toward yellow paging and/or the beginnings of a framework for such a system.
- **Software Solutions:** The Internet search identified training management software specifically for police that provides a way to track and manage the training and skill development of police officers. Known as CopTrak, this software allows for documentation and tracking of training and skill development linked to specific officers. There are, however, no indications that this software allows for an indexing and search capability to allow department wide employees access to specific knowledge areas by individual officers.

- **Expertise Data Banks:** The Department of Interior, in cooperation with the Department of Agriculture, has developed a programmatic approach to yellow paging. This program, known as the Shared Applications Computer system or SAC's, is a database that stores data on training, experience and specific federal land management agency for all permanent employees within the Department of Interior. There is a specific focus on fire fighting experience and training. This database is searchable using a key word and indexing system that allows a user to identify and contact specific individuals who have the desired skills and expertise. This system was observed in action during the interview process when the participant received a phone call from a colleague in another state requesting his assistance on a project. The participant was located using the SAC system. The system is web based, and supervisors of employees enter the data when they have completed specific training, received certifications or gained qualified experience.

This system is currently being re-engineered into a web-based application that links both the Department of Interior and Department of Agriculture with possible links to equivalent state agencies that house the national "fire community". This system has both passive and active application where individuals can be accessed for training and other routine projects (i.e., passive) or during times of major fire events when expertise is required (i.e., active).

Police departments identified in the Fellowship survey, report keeping data banks that link officers to specific events over time, which makes possible the identification of officers who are linked to specific police events. While virtually every police department with an automated information system has this capability, only one was identified that actually uses this system as a way to link officer knowledge on related aspects of a problem (suspect, victims, location, time, etc.) to a problem solving strategy. This system allows employee access to this data bank, to search for other officers who have had contact with specific suspects over any specified period of time. This allows for a "mind mining" process, such as face-to-face or electronic discussions between the initiating officer and other officers who have been identified using this system.

- **E-Mail Mapping:** Perhaps one of the most innovative, if not controversial knowledge capturing approaches identified in this study, is the rapidly growing emphasis on e-mail management and specifically e-mail mapping. While initially focused on managing the volume of e-mail, which is expected to increase 40% by 2004, the software applications are now turning to mapping or searching of e-mail content. The Central Intelligence Agency has recently invested in technologies such as Knowledge Mail, that uses

keywords or phrases in employee e-mail to track expertise. When the user seeks colleagues who are knowledgeable about a topic, the system connects the employees by e-mail. Currently there is no data showing that police departments have access or are using this approach to capturing individual level knowledge.

While these individual based knowledge systems provide links to immediate problems and issues, they are clearly "person dependent". Given the current demographic trends and the systematic transition into retirement of large cohort groups from the police profession, police organizations are clearly vulnerable to the "brain drain" effect. As the "baby boomers" retire, the importance of creating organizational based knowledge management systems is becoming clear.

Knowing How: Creating Organizational Memory

Data from this research also revealed several efforts to capture and make available organizational "know how". These efforts focused not only on specific problem solutions that were effective, but also organizational processes that are important to problem solving.

•Problem Solving Case Books and Records. Some departments identified in the Fellowship survey reported using problem solving casebooks to record the nature, interventions, and outcomes of specific problem solving activities. These books ranged from formal 3 ring binders to one-page memos. While considered a mainstay process in the formal Problem Oriented Policing approach, these updated versions of the time honored briefing log, were used in paper form by only 54% of the departments surveyed. Electronic versions to include e-mail based problem solving information sharing were utilized by only 23% of the survey participants. In the Boston Police Department, monthly crime analysis meetings known as CAM, incorporates presentation and data banking of successful problem solving strategies. These 'best practices' are available to the entire department for review in an electronically assessable data bank.

- Process Documentation and Mapping. The importance of documenting and evaluating organizational processes is evident in police programs. In Seattle, a recent effort to create a data driven managerial accountability program known as SeattleWatch included resources to retain an outside consultant to observe, document, and then evaluate the process. Reports and presentations on the process evaluation were built into the on-going process.

The Los Angeles Police Department has recently purchased software known as ProcessBook that maintains a knowledge bank of organizational processes. This system can be applied to both physical process, such as plant systems, or administrative activities, such as budget or personnel processes. This software allows any employee to contribute their experiences, work processes, job procedures, task instructions for specific projects, and allow on-line access to background information. In effect, this system can document all relevant organizational processes and make them available throughout the organization.

PROCESSING KNOWLEDGE: SHARING WHAT WE KNOW

A fundamental feature of the Diffusions of Innovations approach is the sharing or diffusion of the innovation among individuals and eventually throughout the system. Research on Knowledge Management has revealed that a key ingredient to successful implementation, or diffusion, is an organizational culture that practices and encourages collaboration and openness (Greengaard, 1998; Hansen, et.al., 1999; Matway and Andrews, 2000). Conversely, obstacles to effective knowledge management are common in closed organizational cultures where information 'hoarding and 'command and control' management methods are practiced (Botkin, 1999). Given the longstanding view of policing as a closed profession steeped in authority based traditions, it was surprising to find the most evidence of police KM devoted to the sharing of knowledge.

Building Organizational Intelligence: Internal Sharing and the Push for Sharing Knowledge

Numerous police KM systems were discovered that were designed to process information and transform it into knowledge in preparation for application to selected problems. The packaging of these data has logically led to an increased interest in sharing of this knowledge.

- Crime Mapping and Analysis. The evolution of crime analysis from "offender based" knowledge to a "place based" knowledge approach coincides with the diffusion of crime mapping software and the focus on 'hot spot policing'. In a 2001 survey of the diffusion of computerized crime mapping, 65% of the top 100 police agencies with 100 or more officers claim to have adopted computerized crime mapping (Weisburd, 2001). The initial effect of crime mapping in most departments participating in this research has been to 'package' data within a geographic context. Crime mapping has become a very effective way to present data and communicate the meaning of data as it relates to geographic space. In this respect, crime mapping, as it is currently practiced by police agencies, predominately focuses on the 'what, when, and where' of crime. Based on these parameters, crime mapping is used to create descriptive knowledge.

Although some participants report the routine use of maps in shift briefings and other information forums to create knowledge about their respective geographic beats, wide spread sharing on a routine basis was not reported by a majority of participants. In part, attempts to create routine sharing protocols have been defeated by the ability to produce and distribute timely maps. The New York City Police Department has addressed this issue by recently purchasing an internet based software known as *Map Info Map Extreme*, which will allow 40,000 officers across 76 precincts to access and share and map the latest available data. In the Redlands, California Police Department, routine shift briefings are soon to include projected maps with real time data allowing for in-briefing interactive analysis that will inform subsequent deployments. While crime analysis of data has been a long standing tool to support police tactical operations, with the advent of crime mapping it is now clear that multiple data sets can also be analyzed to support a wide range of law enforcement activities. The essential ingredient is the sharing of data both within an organization and between organizations.

- **Data Base Scanning.** A significant portion of police time is devoted to gathering information and banking it within organizational databases. While access to this data is facilitated by software and user access systems, much of the data is subject to the "silo effect" that limits cross-organizational access. New software called *Knowledge Insight* is now available and in use in the Surrey Police Department in British Columbia, Canada. This software learns about a users data requirements the more it is used. By tracking topics in e-mails, frequently visited websites, letters etc, information is continually processed to create a personal profile against which all knowledge delivery from the departments data bases takes place. The system, in effect, second-guesses the users knowledge needs, searches the department data banks and delivers data proactively. This software will also examine current cases that an officer is working, and then automatically search the department databases and deliver the most relevant documents and information sources. This system will perform "modus operandi" analysis on new cases as they are entered and search the organization databases for related cases. The system can also be set to report on crimes that exceed a predetermined number in a certain location on seven-day rolling period and then alert users when these offenses exceed the crime spree number.

- **Lap Top Knowledge Systems.** There is clear data showing a predominate trend to putting knowledge systems into the field setting. The primary vehicle for this effort is the laptop computer. A leader in this effort is the Charlotte-Mecklenburg Police Department in North Carolina. Taking a "systems approach", this police department is integrating custom built databases, an enhanced CAD system, a field interview system, trend alert system, and internal affairs case management system. The basis for this approach is working officers in the field build a long-term view of policing around information management and use. The operating objective is to move from an organizational that simply stores information to an organization that interacts with the data to create operational knowledge on a day-to-day basis in the field (Pilant, 1999). Data sharing is at the heart of this system.
- **Data Warehousing.** Law enforcement agencies have been sharing data for sometime. Specialized databases such as the HITS system in Washington State, for tracking serial killers and sex offenders have been based on the similar sharing agreements that have support national databases such as the FBI's Automated Fingerprint Identification System (AFIS) and more recently the Combined DNA Index System (CODIS). New systems are now becoming evident that center on web-based applications that create data warehouses using data from a wide variety of law enforcement agencies that span virtually all types of data.

In Arizona, a system called COPLINK initially focused upon database consolidation and warehousing for the Tucson Police Department. The software merges stand-alone databases such as mug shot files, vehicle identifications, and crime locations within the department's databases and intra organizational searches. The system creates a new or "mega data base" often called a data mart or warehouse and has evolved to include surrounding police departments enabling inter-organizational sharing and access of each other's data. A subsequent phase of the project has employed artificial intelligence techniques to help users discover hidden links between people, organizations, locations, vehicles and weapons across all the data in the data warehouse. By 2002, COPLINK is expected to cover 70 percent of the police organizations in Arizona. A similar data warehouse system has been in operation in Delaware since 1997, as well as in the Baltimore County Police Department (Groff and LaVigne (1998).

While the Arizona and Delaware cases seem to be successful, other attempts to create data warehouses are still developing. A system developed by GTE, known as the Bastille, also creates a data warehouse from a variety of agencies that share their data. This system is constructed as a subscriber system where participating agencies pay a fee and are linked to each other in a web based

private network. A recent evaluation of this system notes what has been termed the 'chicken and egg challenge'. Until there is useful information in the system it is difficult to get agencies to subscribe. Larger agencies are reported to be joining the system but smaller agencies have yet to become involved (Davis, 1999).

- **Community Internet Access.** Many law enforcement agencies are making selected portions of their data available to the community over the Internet. While the majority of data are crime statistics, several departments are now providing maps on line as well (Boba, 1999). Some departments are now providing user-friendly 'front-end' systems to enable citizens to construct their own maps in conjunction with the department's community-policing program (Rich, 1998).
- **Knowledge Banks.** One of the more important developments in policing over the last 20 years has been the growing participation of the police profession in university-based research. During this period, an extensive knowledge base has developed and is currently available in abstract form through a CD ROM subscription service that is also linked to a standard quarterly hard copy journal. None of the participants in this study were aware of or reported using this service. In a recent national survey of police departments, participants did report awareness of crime-mapping hot spot research and the availability of academic books on crime mapping and analysis within the department (Weisburd, 2001).

While the majority of knowledge sharing has been confined to intra and inter law enforcement agency initiatives, there is a clear move to cross the traditional boundaries of the police profession. The willingness of law enforcement to share data, not just internally within the organization and profession but also to include other government agencies and the community is evident in the findings of this research.

APPLYING KNOWLEDGE: USING WHAT WE KNOW

Innovation-process research stresses the application or implementation stage involved in putting an innovation to use within an organization (Rogers, 1995). Indeed, the ultimate purpose of Knowledge Management is not simply to make knowledge available, but to apply it to reach organizational objectives (Williams, 2001). This research clearly provides data that knowledge derived from K M techniques are being applied to address crime and disorder as well as organizational issues.

Crime and Disorder Applications

There is long standing evidence that Knowledge Management techniques are used in the routine police activities to address crime and disorder problems. The success of using dedicated data base searches such as AFIS or the HITS programs discussed above is well known. Data driven patrol staffing and allocation models have been in place for twenty years. Yet participants universally agree that these applications represent but a small fraction of the organizational knowledge that is available to inform the day-to-day police patrol. The more visible and growing use of Knowledge Management techniques is in the area of targeted crimes.

- **Targeted Crime Mapping:** The use of crime mapping has evolved rapidly and is now used in front line police operations (crime and hotspot analysis) and investigations by officers (Groff and LaVigne, 1998). While crime analysis has always included "categorical" analysis, such as time of day, day of week and location, there has not been a more comprehensive approach that would take into account the 'crime dynamic'. Such an analysis is more detailed, taking into account patterns of movement, types of offenders and offenses within the crime, etc. There is specific case study data that demonstrates the successful use of this Knowledge Management technique to address a wide range of issues from auto theft, burglary, rape, homicide, traffic accidents, and gang activity (LaVigne and Wartell, 1998; LaVigne and Wartell, 2000). Evaluation research reveals significant crime control effectiveness based upon interventions that use the hot spot analysis approach (Sherman and Weisburd, 1995; Weisburd, et.al, 2001)

While crime mapping technologies make such analysis possible, they are yet to be fully developed and implemented. At this point, it is unclear to what extent this knowledge management approach has or will become a routine police practice rather than a targeted or crime specific application. As efforts to create mapping models that predict the location of crime (Weisburd and McEwen, 1997) become viable, it is likely that more departments will follow the lead of the

Redlands, California police department to integrate this knowledge into the routine briefing and deployment strategies currently under development. Direct observations and interviews with participants in the Redlands project reveal, however, the importance of making these applications time sensitive (real time data), effective (place officers at the predicted location to greet the offender) and process efficient (analytical up-front work that reflects the crime dynamic).

Administrative and Organizational Applications

Less apparent, but emerging in the data, is the application of Knowledge Management in the administration and operation of the police organization. Within the last five years the use of crime mapping and analysis has been utilized to both inform police administrative decision making about crime and disorder problems, and also as a means to hold upper level police managers accountable for decisions. In addition, there is emerging evidence that crime mapping is being used for other administrative decisions.

- **Accountability Models**
  Initiated in New York City, COMSTAT (computerized statistics) places crime mapping in a 'command and control' role. Mapping is used in conjunction with bi-weekly precinct meetings, whereby; the police commander is questioned on the nature of problems in their area and how they are responding. The COMSTAT process is conducted in an open forum and includes police command staff in a group setting. The G.I.S. presentation is a 'real time' analysis enabling crime analysts to identify crime hotspots, convene a meeting to craft, and explain proposed responses (Groff and LaVigne, 1998). In the Fellowship survey, 43% of the departments reported using some form of a COMSTAT type process. Data is collected, mapped and then presented in the COMSTAT setting as a means to provide knowledge about both the nature of the problem and the efficacy of the response. Initial versions of this program were criticized for focusing only on the manager's relative success often leading to "heavy handed" treatment of managers, rather than on a collaborative approach to problem solving. Subsequent versions have been designed to focus more on developing data and applying knowledge about a problem and its location through the collaborative process in the group setting to create a meaningful solution (Pendleton, 1999).

Evaluations of the COMSTAT process has suggested that while this approach is successful in packaging and presenting knowledge about problems and their solutions, the success of the process has been limited by a lack of leadership, limited application to the day-to-day activities, and limited "process knowledge" (Pendleton, 1999). While one by-product has been increased collaboration and integration between divisions and other units within the organization, the accountability focus seems to have overshadowed the actual problem solving or tactical focus (Pendleton, 1999). As a result, these accountability programs seem to be treated more as an *administrative event* rather than a *routine process* that was part of regular organizational practice designed to address crime and disorder.

The limitations of the "event approach" to COMSTAT has been recognized and addressed within the Boston Police Department (BPD). The BPD has revised their initial program to focus more upon the process before and after each of their monthly meetings, rather than on just the monthly meeting. This process goes beyond simply holding managers accountable, but features problem solving process and a "best practices" approach to presenting and data banking strategies that have proven successful.

- **Resource Allocation Models**
  The Charlotte-Mecklenburg, NC police department was formed in 1994 by combining the Mecklenburg County and City of Charlotte police systems. Using a 'citizen demand for service model rather than an officer per population model (Lumb, 1996), crime mapping technology was utilized to support a process to define, assess, and ultimately select police patrol and resource allocation districts (Neese, 2000).
- **Organizational Philosophy and Structure Models**
  One department in this study, the Redlands Police Department in Redlands, California, has specifically searched existing university based knowledge systems to inform the design and adoption of an organizational philosophy to guide the delivery of police services. In this instance, the Redlands Police Department has relied heavily on the Risk and Protective Factors Model developed at the University of Washington. This approach stresses a community-based approach to crime prevention that focuses on community building and partnerships. This research-based approach has shaped the operational philosophy and organizational structure of the police department. To facilitate this approach the city consolidated the Parks and Recreation and Public Housing Departments into the Police Department. The Chief of Police directs these functions, as well as the Redlands Police Department. The effect of this approach has been to stress problem solving and prevention using a more comprehensive approach to both prevention and the traditional

arrest response.

CREATING KNOWLEDGE: INCREASING WHAT WE KNOW

The creation of innovation is intimately linked to basic and applied research process (Rogers, 1995, pp135). This research and development process not only will focus on new and original knowledge, but on the evaluation of adopted innovations and an adjustment or 're-invention' process to adapt innovations based upon lessons learned during initial applications, often known as pilot programs (Rogers, 1995). The creation of knowledge is clearly identified as a 'core' feature of Knowledge Management (Gore and Gore, 1999).

The Knowledge Management challenge encompasses both how to learn from organizational experience and how to create knowledge through original research and development activities (Davenport and Prusak, (1997). Past assessments of the police professions approach to creating knowledge are consistent, if not encouraging leading one respected analyst to conclude that police departments are plagued with "learning disorders" (Geller, 1997). The prevailing view is that police departments do little to learn from their own experience (Goldstein, 1990) and rarely undertake research that might lead to development (Reiss, 1991). Data from this research, while supporting many of these views, also provide indications that the profession is evolving in this important KM area.

Creating Knowledge: Police and Research

- **Research Guinea Pig vs. Research Partner**
  The 1970's are a benchmark period in the history of policing for many reasons including the opening of the police departments as venues, and subjects of academic research. These early studies not only spawned knowledge, they also laid the groundwork for an on-going involvement of the police in the research activity. While initially the *subjects of research*, the police have evolved into *research partners* sharing the responsibility for selecting topics, managing the process, and disseminating the results (McEwen, 1999). These 'locally initiated research partnerships' are supported by the National Institute of Justice (NIJ) and have produced many of the knowledge management innovations identified in this research (Weisburd, 2001). Several publications such as the NIJ Journal and other federally sponsored publications regularly disseminate the results of this very aggressive research program. In addition, the NIJ regularly sponsors a research and evaluation conference each summer, and numerous other annual professional conferences, such as the Crime Mapping Conference. Survey research indicates that adoption of innovations such as crime mapping is linked to such research based activities as attendance at

conferences, and academic publications (Weisburd, 2001).

- **Research and Development**
  The next logical step in the creation of police knowledge is for the police to take the lead role in the creation of knowledge. The typical organizational model for this role is found in classic research and development units or departments. Little evidence exists to suggest that the police are developing R & D units to go beyond simply providing a statistical description of the department to actually employing trained researchers to both conduct research and liaison with Universities to do the same (Reiss, 1991; Geller, 1997). Yet there are some indications that police departments may be moving in the direction to establish meaningful knowledge creation role. The Seattle Police Department (SPD) recently commissioned a review of its Research, Grants & Corporate Support (RGCS) Unit with an eye toward changing the unit from simply a money acquisition function (grants) to more of a research unit. The assessment advanced nineteen (19) recommendations that would establish a research and development unit that would be directed by a trained researcher who would be elevated to senior leadership status and report directly to the Chief of Police. The work plan for this unit would reflect city police policy issues, anticipated social trends within the city, as well as a linkage to current and future police science issues (Pendleton, 2000a). Additionally, this research, while supported by NIJ, was originally sponsored by the SPD and managed through the RGCS Unit office.

Creating Knowledge: Learning from Doing

- **Police After Action Reviews**
  Data from this study indicates that many police departments conduct After Action Reviews or Critical Incident Reviews in the wake of police events or situations. Typically, these events are large in nature, such as the World Trade Organization (WTO) Riots in Seattle in 1999, or when officers are involved in incidents of a serious nature. In both types of events, the reviews are conducted within the context of pending litigation and/or discipline. While these reviews can produce knowledge, there are powerful incentives to mitigate a full and complete understanding to limit financial, legal, and professional exposure. Predictably, the outcomes of these reviews are rarely accessible and/or deposited in a knowledge repository for further review. In effect, there is little or no evidence that After Action Reviews, as they are currently conducted, have contributed in a visible and meaningful way to expanding police knowledge.

- **Lessons Learned and After Action Reviews**
  The United States Army and federal land management agencies like the Department of Interior for many years have practiced creating knowledge from events or organizational experience. These relatively simple but disciplined learning forums have become standard practice within these organizations and have led to national repositories for lessons learned from events. The National Advance Resource Technology Center (NARTC) has been developed to support Fire Management agencies across the nation. One of their programs is known as "Lessons Learned" and is designed to use after incident reports to create and share knowledge from fire related events. The reporting system is web based and is accessible by anyone. Those wishing to report on an event, fill out a web-based form that includes identifying/contact information and then a response to the following questions:
  1. What was the most notable success at the incident that others may learn from?
  2. What were some of the most difficult challenges faced and how were they overcome?
  3. What changes, additions or deletions are recommended to various training curriculums?
  4. What issues were not resolved to your satisfaction and need further review? Based on what was learned, what is your recommendation for resolution?

This form is then submitted electronically and, along with all other reports, is shared with the 'wild land fire community'. These reports are compiled and used to spot trends or common areas that need more in-depth attention from the fire fighting community. The After Action Review approach is expanding to the corporate and nonprofit sectors (Darling and Parry, 1999).

- **Place Based Learning**
  An interesting version of after action learning that focuses on the location or place of critical events has been in practice since 1906. Known as a 'Staff Ride', the U.S. Army initiated this process as a learning exercise that require new officers to travel to the actual battlefields to learn from the events that took place during great battles. This learning technique features not simply the battle, but the geographic location and dynamics of the battle. This case study approach is highly structured with numerous learning objectives that feature the interaction between the geography and the case dynamics (Robertson, 1987). The cases that are selected for this intensive learning process represent landmark battles that represent knowledge turning points in the profession of war.

- **Integrating Events and Space After Action Reviews**
  On August 5th, 1949, a crew of fifteen elite Forest Service Smokejumpers responded to a remote fire in the Montana wilderness. In less than an hour after they jumped into that fire, all but three of these men were mortally burned. This event represents a landmark case in the long history of the fire management community. Obsessed with this tragedy, the renown Professor and acclaimed author Norman Mclean (A River Runs Through It and other stories) began an exhausting review of this event to answer key fire science and management questions that simply were not addressed in the review that immediately followed the event. Using a multimodal process that included document review, interviews with key participants and finally two site visits to this remote area with two remaining survivors of the fire, Maclean was able to answer key questions which, in turn, have transformed both the science of fire management and operational protocols (Maclean 1992).

While the purpose of Maclean's work was not to advance a knowledge creation model based on critical incident review, a careful analysis of Macleans approach to this event informs such a purpose. While most critical incident reviews occur in built professional environments, and most staff rides occur in the field, rarely are they joined in the way that Maclean conducted his review. This blended approach seems particularly relevant to policing today with the emphasis on a crime and place model that features a more integrated approach to understanding and addressing crime and disorder (Eck and Weisburd, 1995).

Most recently, the Rochester, New York Police Department has developed an *integrated after action review* process to address the problem of homicide within a relatively small inner city area that accounted for over 80% of homicide in Rochester. A stepwise process was used to identify and map homicides to locate the 'target place' within the city. Then an after action review was conducted of all the recent homicides within the target place. All the key participants, both within the community and within the police department, were invited to meetings where a facilitated process was used to analyze the recent homicide cases in the target area. The process was guided by the following questions:

1. Do you know anything about this case?
2. What do you know about the victim?
3. What do you know about associates of the victim?
4. Was the victim part of a group of active offenders?
5. What do you know about the suspect(s) /offenders?
6. What do you know about the associates of

suspects/offenders?

7. What do you know about the relationship between the victims and suspect?
8. What do you know about the location of the event?
9. What do you know about the motive in this case?
10. Was the incident drug related? How?
11. What do you think was behind the event (final summary)?

Following the after action review session, a place based analysis including site visits were conducted to understand fully the nature of the location of each of the homicides. This place analysis included the location of the homicide and visits to the homes of relatives and other key participants within the geographic space surrounding the location.

Based upon this process the *crime dynamic* of homicide in this area was developed that included a focus on motive, relational dynamics and the characteristic of the places in which these homicides occurred. In particular, the criminal career of drug houses was discovered to reveal that at a particular threshold point, a drug house is "out of the control" of the residents, and become inevitable locations of homicides. In addition, prior to the homicides, most of the members of the neighborhood in which the participants lived knew that the event was going to happen, often weeks in advance of the homicide. Finally, the tracking of suspects and victims over a several year period revealed that suspects/offenders in one year were ultimately victims of subsequent homicides in subsequent years. Based upon this analysis, interventions were crafted to address three distinct types of homicides that occur in the target area.

COMPASS: A Total Knowledge Management System

In 2000, the NIJ launched COMPASS, a Community Mapping, Analysis and Planning for Safety Strategies (COMPASS) Initiative. This cutting edge experiment is based on the recent shift in criminal justice policy development toward a more collaborative, strategic approach to analyzing the nature of public safety problems to develop strategic interventions to reduce them. COMPASS has four components: (1) A collaborative policy group spanning a broad array of agencies and community interests; (2) A comprehensive data infrastructure that will house a broad set of data collected from a variety of sources (criminal justice, demographic, social and health, schools, hospitals, physical infrastructure, business data, etc.); (3) Strategic analysis of data both spatially and temporally through the use of a user-friendly information systems; and (4) Research partners to assist in the analysis of data, the development of interventions, and to provide on-going corrective feedback on the COMPASS process and

the impact of the interventions.
The COMPASS project has been under observation since its inception and became a focal point early in this research. Three sites have been selected including Milwaukee, WI, Seattle, WA and the East Valley Project, a consortium of participants led by the Redlands, CA Police Department. It was clear early in the observations as the COMPASS project began to take shape that it was to be a comprehensive approach to Knowledge Management (Pendleton, 2002). As one leading participant noted: "COMPASS is Total Knowledge Management". The following Seattle based data illustrate what is emerging as a total knowledge management system to address crime and disorder.

- **Capturing What We Know**
  The very first phase of the COMPASS project focused on identifying and soliciting large data banks from diverse number of agencies and organizations. In effect, the first step was creating a data center that held vast amounts of data from diverse settings that, when taken together, provides a comprehensive understanding of all the possible factors related to crime and disorder. This data was collected and organized using a G.I.S. format to enable a "crime and place" analytical approach (Eck and Weisburd, 1995). This "capturing process" required detailed discussions, legal analysis, and an access agreement process to include a privacy council review before these data from these very diverse sources was acquired and indexed (Pendleton, 2002).

- **Sharing What We Know**
  Early in the COMPASS process, a leadership team was formed to provide guidance in the design and implementation of the project. Members were selected based upon their representative role in the larger community. This team also facilitated the sharing of data from their respective agencies. As part of this process, a privacy council was formed to review data requests prior to acquiring data to determine both the nature of the data to be acquired and how it could subsequently be shared. Additional access protocols were developed to both guarantee data security and privacy, as well as to facilitate data use. In two of the three sites, web-based access will be developed for the community at large, as well as other agencies within the criminal justice field. In Redlands, over 30 stakeholder agencies have been identified that will actively participate and share information. These agencies cross a broad spectrum from criminal justice, schools, universities, social service agencies, health care agencies, local governments, and the private sector.

- **Applying What We Know**
  Once the basic COMPASS structure was established, and data base acquisition underway, the Leadership Team went through a facilitated process to select a problem for the COMPASS process. This problem was selected from an array of issues that were identified as critical problems for the Seattle area. The Leadership Team selected auto theft. The COMPASS research partner, discussed below, next conducted an extensive literature review using the CD ROM knowledge bank of abstracted research. Over 270 abstracted articles on auto theft were reviewed. Based upon the literature review, a comprehensive analytical plan featuring a crime and place and hotspot approach was designed and followed. This process is currently in progress (Pendleton, 2002). A COMPASS team comprised of the project director, administrative assistant, G.I.S. analyst, a crime analyst from the Seattle Police Department, and the Research Partners selected for the project conducts the analytical process. Based upon the outcome of the analysis, an intervention will be crafted, implemented and evaluated.

- **Increasing What We Know**
  An integral component of the COMPASS initiative is the selection of research partner(s) to participate in all phases of the project as discussed above. In addition, the research partner also is documenting <u>and</u> evaluating the process (Pendleton, 2002) and providing advice in all phases of the project, based upon an on-going assessment. Known as "action research" the partners provide advice as the project is developing rather than waiting until it is completed, thus losing the opportunity to profit from the understanding that the project develops (Lewin, 1948; McEwen, 1999). The project teams from all three COMPASS sites gather on a quarterly basis in 'cluster meetings' to share cross-site experiences and other key project issues. In addition, as the project proceeds, papers are developed, presented at conferences and published to share lessons learned from the project (Pendleton, 2000b; Pendleton, 2001).

INTERPRETATION AND DISCUSSION OF RESULTS

Rogers (1995), in his study of the attributes of innovations, notes that innovations are often not viewed in a singular way but may be perceived as an interrelated bundle of new ideas. The elements that comprise an innovation may be tightly or loosely bundled based on the degree of interrelatedness between elements (Koontz, 1976). The findings from this research suggest that together police Knowledge Management might be usefully viewed as an innovation cluster that is loosely bundled where the boundaries are not necessarily clear cut and distinct, but when taken together form an interconnected Knowledge Management Model as illustrated on page 26 in Figure 1.

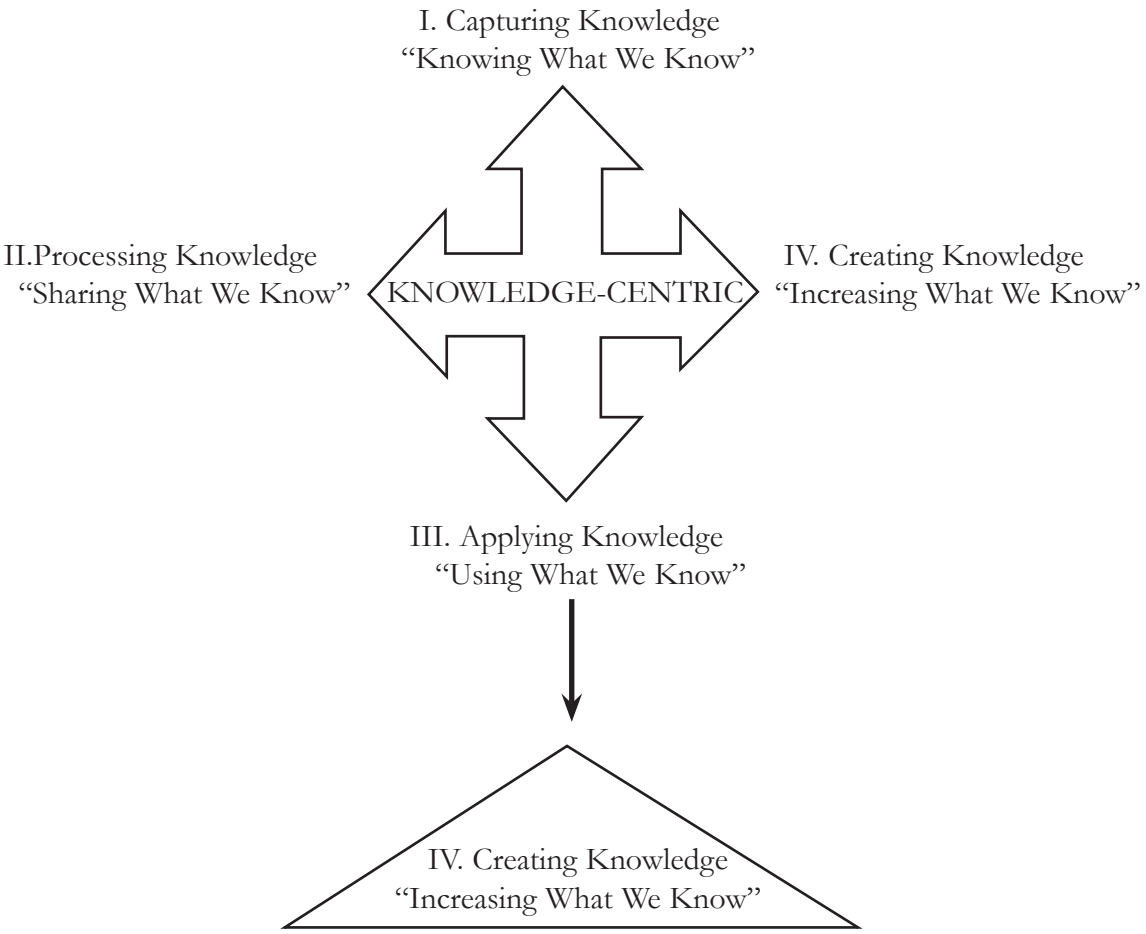
Activities in one area of the model logically connect or lead to activities in another. The data suggests that there are Knowledge Management vehicles that bring together one or more of the four areas in the model. The crime mapping framework and the COMPASS initiative can be viewed as Knowledge Management vehicles as they both include KM activities in all four areas, but then create functional linkages between the four elements of the KM model.

The degree of collaboration and the level of adoption involved in their application can usefully distinguish the approaches to Knowledge Management observed in this study. In effect, the level of collaboration and the number of types utilized by the participants define the stages or types of police Knowledge Management.

Knowledge Management as Levels of Collaboration

Levels of collaboration refer to the amount of sharing and cooperative interaction with others involved in the utilization of KM strategies. Some participants report the utilization of KM strategies, such as problem solving casebooks or particular software solutions that are confined to individual users with little interpersonal or inter-organizational interaction. This level of collaboration is minimal and generally confined to individual users. Another approach to collaboration is intra-organizational and involves sharing knowledge within the organization and often working in teams in one or more of the types of KM observed in this study. The Redlands Police Department's plan to implement real time data sharing in the patrol briefing setting is an example of intra-organizational collaboration and team strategies to utilize knowledge. The COMSTAT approach to data driven decision-making and accountability is another example of intra-organizational collaboration. Collaboration was also observed that involved sharing knowledge and working in teams that cross over organizational and jurisdictional boundaries. The COPLINK project in Arizona, the COMPASS project in the three pilot sites, and the construction of community access websites are examples of a system wide approach to collaboration.

Figure 1.
POLICE KNOWLEDGE MANAGEMENT MODEL



During this research, the degree of collaboration associated with Knowledge Management varied along a continuum from very low to very high. Some participants seem to confine their Knowledge Management efforts to time honored traditional approaches that Muir (1997) and others have identified decades ago. Other participants are strongly committed to sharing knowledge within and between police organizations. Still others have, as one participant stated, taken a "shine the light of day on it" approach to knowledge and are actively sharing knowledge within their entire social system. Redlands Police Department is an example of such an approach.

Collaboration, often viewed as the 'neglected side of KM' (Matway and Andrews, 2000), is not an attribute commonly associated with the police profession that is considered closed. Yet there is clear evidence that the police profession is engaging in cross boundary knowledge management activities. Specifically, data suggest that the police are open to collaborating with other departments, with other institutions, and the community at large. This collaboration, while the continuation of a trend toward openness, is important as it signals a willingness to share information and knowledge that simply has not been part of the long standing police tradition. In contrast, however, the data also suggests that there is less interest in KM strategies that share, apply and create knowledge *within* the police organization.

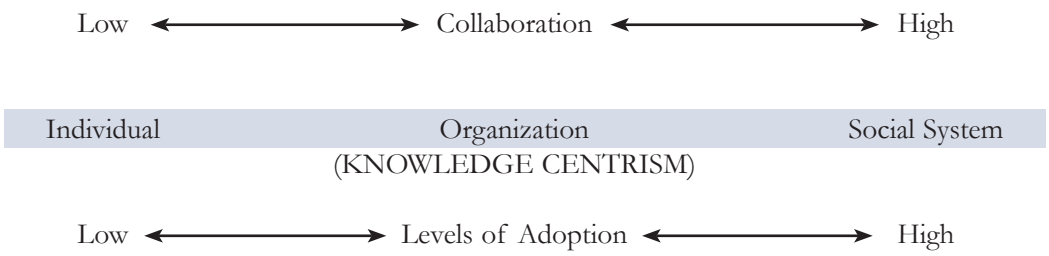
Knowledge Management as Levels of Adoption

While the diffusion of innovations model has addressed the rate and type of adoptions of innovations, there seems to be little evidence of research that addresses the comprehensiveness of adoption that might be associated with innovation clusters. Rogers (1995: 236) notes the need 'to analyze complexes of innovations, to study new ideas in an evolutionary sequence' to determine compatibility among interrelated ideas and adoption rates of innovation packages.

Findings from this research suggest that the number of KM types may define Knowledge Management that police organizations have adopted. Some participants' report the adoption of KM strategies that fall into only one of the four types observed in this study. Others, such as those reviewed in the Weisburd (2001) study of crime mapping, report the adoption of several of the KM strategies. Others report KM activities in all four of the areas observed in this study such as the Redlands Police Department, who is a lead participant in the COMPASS initiative. What was not evident from the findings in this study, but what might be possible is a cumulative or "Guttmann scale effect" where if a participant reports Knowledge Management activities in one area, such as the COMPASS initiative, they will have reported activities in all four areas (Kerlinger, 1973). In this respect, determining police adoption of the KM innovation would not simply refer to *when* it was adopted but by *how* much it was adopted.

As *Figure 2* suggests, the two dimensions of police Knowledge Management can be viewed as an innovation continuum.

Figure 2.
KNOWLEDGE MANAGEMENT CONTINUUM



Using this continuum, it is possible to place or evaluate police Knowledge Management strategies. In addition, these dimensions may be utilized to determine their impact on the rate of adoption and other factors such as the re-invention of the KM model that was observed in the D.A.R.E. innovation (Rogers, 1993).

Implications For Adoption

While the findings in this research suggest that the Knowledge Management Model may be an important innovation for policing, findings from this research seem to have implications for adoption. Rogers (1995) has identified several attributes of innovations that affect their rate of adoption. On factor is *compatibility*, which is the degree to which an innovation is perceived as consistent with existing values, past experiences and needs of the potential adopters. Data from this research shows that very few of the participants were actively engaged in individual based Knowledge Management strategies, such as *e-mail mapping* and *yellow paging*, to track individual officers and their areas of expertise. In part, this approach may simply reflect a lack of awareness or resources to adopt this form of Knowledge Management. Another possibility, however, is that such an approach would be inconsistent with the professional norms against sharing individual officer information and monitoring officer behavior. Throughout the KM literature it is clear that if KM is used to police employees, then adoption will be unlikely (Lim, et.al., 1999). There is a long tradition in the police culture, to resist efforts to monitor police behavior. This cultural tradition would suggest a less than an enthusiastic approach to KM strategies that propose to monitor, even map inter-officer communication (Skolnick and Fyfe, 1993). It is not surprising that data on accountability efforts like COMSTAT show limited success, suggesting that other KM efforts like *e-mail mapping* would not be well received.

Yet another reason that Knowledge Management efforts to capture police knowledge may be slowly adopted is that police culture is based in face-to-face situational interactions. Hansen and his colleagues (1999) identified two strategies for KM that are linked to the nature of the adopting organization. One, known as the *codification strategy* relies on documenting and storing knowledge for reuse by others. The other strategy is tied to person to person sharing and known as the *personalization* strategy. The long standing history of passing along the police culture via word of mouth and situational story telling when combined with the police aversion to 'paper work' suggests that a codification approach would not be quickly adopted in the police profession. Such a view is consistent with the data from this study where there was little enthusiasm for police problem solving "beat books" and other programs requiring the documentation of problem solving outcomes and approaches. Conversely, the data indicating more adoption of Sharing and Application KM strategies seems more consistent with the personalization character of the police culture.

CONCLUSION

The results of this research show that there are Knowledge Management activities occurring within the police profession. These activities can be loosely organized into a Knowledge Management Model, which can be adopted as an organizing management strategy within a police organization. Perhaps the most surprising finding is that the police are much more involved in collaborative activities than the conventional view of the police would suggest. This outward looking approach suggests that the police are open to learning from other sectors in society, such as the private sector and those land management agencies who are currently adopting the KM innovation. The fact that there is much less collaboration within police organizations than between organizations deserves additional study. There is little evidence, however, that the police profession is aware of Knowledge Management as an overall management strategy but is involved in KM activities in an incremental way. In this respect, the police profession might be termed a 'late adopter' using Rogers (1995) categorization of types of adopters.

It would be wrong to suggest however that there are no 'innovators or early adopters' of the KM strategy. Those police agencies involved in the COMPASS initiative are clearly committed to cross system Knowledge Management. In this regard, the Knowledge Management Model may be important to police innovation and innovators given the central nature of knowledge in the innovation process. There are, however, few police participants that were Knowledge-centric in the internal management of the police organization. The Redlands Police Department stands in stark contrast in this regard and seemingly has distinguished itself as a Knowledge Management innovator. A fuller understanding of this Knowledge Management innovator will follow in subsequent publications from this research.

REFERENCES

Atkinson, P. and Hamersley, M. (1994) 'Ethnography and participant observation. *In Handbook of Qualitative Research*, eds. Norman Denzin and Yvonna Lincoln, pp 248-261. Thousand Oaks, CA: Sage.

Boba, R. (1999) 'Using the Internet to Disseminate Crime Information' *The FBI Law Enforcement Bulletin*, 68 (10): 6.

Botkin, J. (1999) *Smart Business: How Knowledge Communities Can Revolutionize Your Company*. New York: The Free Press.

Burkowitz, W. and Williams, R. (1999) *The Knowledge Management Fieldbook*. New York: Prentice Hall.

Darling, M. and Parry, C. (1999) 'Emergent Learning: Taking "Learning From Experience" To A New Level', THE SYSTEMS THINKER. 10 (4): 1-5.

Darwin Magazine (2001) 'Creating Knowledge from Data', *Darwin Magazine*. White Paper.

Davenport, T. and Prusak, L. (1997), *Working Knowledge: How Organizations Manage What They Know*, Harvard, MA: Harvard Business School Press.

Davis, K. (1999) 'Knowledge on the Beat', *Knowledge Management* July, 1999 Issue.

Denzin, N. (1978) *The Research Act: A theoretical introduction to sociological methods*. 2d ed. New York: McGraw-Hill.

Eck, J. and Weisburd, D. (1995) *Crime and Place*. New York.: Criminal Justice Press.

Fryer, B. (1999) 'Intellectual Capital' *Inc. Technology*. September, 16th, pp 60

Geller, W (1997) 'Suppose we were really serious about police departments becoming learning organizations?' Presented at the National Institute of Justice "Cluster Conference" January 27th. Washington D.C.

Geller, W. and Swanger, G. (1995) *Managing Innovation In Policing: The Untapped Potential of the Middle Manager*, Washington, D.C.: Police Executive Research Forum.

Glasser, B. and A. Strauss. (1980) *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York: Aldine.

Global Knowledge Economics Council (2001) Knowledge Management Science and Technology Standards and Knowledge Management For Homeland Security Program Meeting Announcement. October 2nd 2001.

Goldstein, H. (1990). *Problem Oriented Policing*. New York: McGraw-Hill Publishing Company.

Goodridge, E. (2001) 'Intelligence Agency Bets On Knowledge Management', *Information Week*. December, 3rd.

Gore, C. and Gore, E. (1999) 'Knowledge Management: the way forward' *Total Quality Management* July, 554-560.

Greengard, S. (1998) 'How to make KM a reality' *Workforce*. 77 (10): 90-92.

Groff, E. and LaVigne, N. (1998) 'The Use of Geographic Information Systems (G.I.S.) For State and Local Crime Analysis' Presented at the Conference of European Statisticians, Ottowa, Canada, October, 5-7, 1998.

Hansen, M., Nohria, N., Tierney, T. (1999) 'What's Your Strategy For Managing Knowledge? *Harvard Business Review* 77 (2): 106-112.

Hickins, M. (1999) 'Xerox Shares Its KNOWLEDGE', *Management Review,* September: 40-45.

Holtham, C. (1997) "Will business knowledge management survive until the twenty-first century' in Raitt, D., Blake, P. and Jeapes,B. (Eds), *Online Information 97. Proceedings. 21st International Online Meeting*, London, 9-11 December, Learned Information Europe, London, 79-92.

Lerlinger, F. (1973) *Foundations of Behavioral Research*. New York: Holt, Rinehart, and Winston.

Koontz, V. (1976) *Determinants of Individuals' Levels of Knowledge, Attitudes Towards, and Decisions Regarding a Health Innovation in Maine*, Ph.D. Thesis, Ann Arbor, University of Michigan. PS (E).

LaVigne, N. and Wartell, J. (1998) Crime Mapping Case Studies: Successes In The Field, Washington D.C.: Police Executive Research Forum.

LaVigne, N. and Wartell, J. (2000) *Crime Mapping Case Studies: Successes In The Field Volumn 2*, Washington D.C.: Police Executive Research Forum.

Lewin, K. (1948) 'Action Research and Minority Problems,' in: *Resolving Social Conflicts: Selected Papers on Group Dynamics*, edited by Gertrud Lewin, New York: Harper and Brothers, 1948: 219-262.

Lim, K.; Ahmed, P. and Zairi, M. (1999) 'Managing for Quality Through Knowledge Management',*Total Quality Management*. July: 615-617.

Loughridge, B. (1999) 'Knowledge management, librarians and information managers: fad or future? *New Library World* 100 (1151): 245-253.

Lumb, R. (1996) 'Manpower Analysis: Determining Number of Personnel Using the Scientific Method.' Charlotte-Mecklenburg Police Department Report.

Maclean, N. (1992) *Young Men and Fire*. Chicago: The University of Chicago Press.

Malcolm, A. (1989) 'Cities try out new approach to police work', *New York Times*, March 29.

Matway, L and Andrews, L. (2000). 'Collaboration: the neglected side of KM' *KMWorld* 9 (3): 3-4.

McEwen, T. (1999) 'NIJ's Locally Initiated Research Partnerships in Policing-Factors That Add Up to Success,' *National Institute of Justice Journal*. Issue# 238: 2-10.

Muir, K. M. (1977) *Police: Streetcorner Politicians*. Chicago: The University of Chicago Press.

Neese, A. (2000) 'Using GIS for Police Redistricting' in LaVigne, N. and Wartell, J. (eds) *Crime Mapping Case Studies: Successes In The Field Volumn 2*, Washington D.C.: Police Executive Research Forum, pp 109-115.

Newcombe, T. (1999) 'Knowledge Management: New Wisdom or Passing Fad?', *Government Technology*

O'Dell, C. and Jackson, G. (1998) *If Only We Knew What We Know: The Transfer of Internal Knowledge and Best Practice*._ New York: The Free Press.

Pendleton, M. (1997) "Looking the Other Way: The Institutional Accommodation of Tree Theft" *Qualitative Sociology* . Vol. 20, (3), 325-340

Pendleton, M. (1999) *Watching SeattleWatch: An Evaluation of Police Administrative Accountability*. A Summary Report.

Pendleton, M. (2000a) The Seattle Police Department: Research and Grants Unit Organizational Development Project, Summary Report.

Pendleton, M. (2000b) 'COMPASS: The Process of Innovation and The Politics of Accepting Money'. Presented at the Annual Conference on Criminal Justice Research and Evaluation: Change: Past, Present, Future. Washington D.C., July 16-19, 2000.

Pendleton, M (2001). 'Charting a Course: Innovation Amidst the Perfect Storm'. Presented at the Annual Conference on Criminal Justice Research and Evaluation: Enhancing Police and Practice. Washington D.C., July 22-25, 2001.

Pendleton, M. (2002) 'COMPASS *Seattle, Washington Process Research Quarterly Reports #1-#7"*.

Pliant, L. (1999) 'Going Mobile in Law Enforcement Technology' *National Institute of Justice Journal*. Issue# 238: 11-16.

Reiss, A. (1991) 'What is R&D Really?' in William Geller (ed) *Local Government Police Management*. Washington D.C.: International City/ County Management Association, pp 339.

Rich, T. (1999) 'Mapping the Path to Problem Solving', National Institute of Justice Journal, pp. 2-9, October, 1999.

Robertson, W. (1987) *The Staff Ride*. Washington D.C.: Center of Military History United States Army.

Rogers, E. (1993) 'Diffusion and the Re-invention of Project D.A.R.E.', in Thomas E. Backer and Everett M. Rogers (eds.), *Organizational Aspects of Health Communication Campaigns: What Works?* Newbury Park, CA, Sage, pp. 139-162.

Rogers, E. (1995) *Diffusion of Innovations*, 4th edn. New York: The Free Press.

Ross, S. (2002) 'Pair of hijackers granted visas' *The Associated Press in The Sun:* Bremerton, WA: section c pp. 1.

Rubinstein, J. (1973) *City Police* New York: Farrar, Straus, Giroux.

Sherman, L and Weisburd, D, (1995) 'General Deterrent Effects of Police in Crime 'Hot Spots': A Randomized Controlled Trial' *Justice Quarterly* 12 (4): 625-648.

Skolnick, J. and Fyfe, J. (1993) *Above The Law: Police and the Excessive Use of Force*. New York: The Free Press.

Strauss, A. and Corbin, J. (1990) *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park, CA: Sage.

University of Southern California (1997) 'EC2 Welcomes Adventure Online Gaming and Performance Group' *USC In The News*. September.

Webb, S. (1998) *Knowledge Management: Linchpin of Change, Some Practical Guidelines*, Aslib, The Association for Information Management, London.

Weisburd, D. (1997) Crime Mapping and Crime Prevention. New York: Criminal Justice Press.

Weisburd, D. (2001) 'Translating Research Into Practice: Reflections on the Diffusion of Crime Mapping Innovation'. Presented at the Fifth Annual International Crime Mapping Research Conference. National Institute of Justice.

Weisburd, D, Eck, J., Ready, A, Greenspan, D. (2001) 'Crime Displacement and Diffusion of Crime Control Benefits: Findings from a Controlled Study. Paper presented at the American Society of Criminology 2001 Annual Conference.

Williams, T. (2001). 'Knowledge Management Initiatives Gain Foothold in Government', *Post Newsweek* , 15, #23.

Wilson, J Q., and Kelling, G. 'Making neighborhoods safe". *The Atlantic Monthly*, 134: 46-52.

CHAPTER 2

ANATOMY OF A POLICE INNOVATOR: A CASE STUDY OF KNOWLEDGE MANAGEMENT IN POLICING

by: Michael R. Pendleton Ph.D. and Chief Jim Bueerman

EXECUTIVE SUMMARY

If the police profession is to remain open to innovation, and remain relevant to the problems of the future, a more strategic understanding of innovation leadership is essential. The research reported here addresses the lack of focused research on the process of innovation in policing and specifically addresses the question: What is the nature of innovation leadership and specifically the nature of a police innovator? The case study approach (selected for this research and which provides the benefit of looking within a specific organization rather than across numerous organizations) has provided valuable insight into the process of innovation and the characteristics of an innovative organization. Utilizing the Police Knowledge Management (KM) Model, the Redlands Police Department (RPD) in Redlands, California was identified as a police Knowledge Management Innovator and was selected as a case study of innovation leadership. The RPD was selected by reviewing data from a COPS funded research fellowship that was initiated but not completed by another researcher to survey how Knowledge Management was applied to street level police problems in police departments across the country. Results from this inquiry suggest that the police innovator is more than an individual who is intrigued with new ideas, but is an organizational place where innovation happens. In this respect, the organization becomes known as the innovator where leadership is but one part of a larger innovation system. Knowledge Management, as a purposeful organizational strategy, is more than an innovation in itself, but is a fundamental part of the innovation process that is essential to sustaining an organizational culture that is based in innovation. The study also indicates that the next step in police Knowledge Management is to address the need to integrate the various KM techniques into an interrelated system.

ANATOMY OF A POLICE INNOVATOR: A CASE STUDY OF KNOWLEDGE MANAGEMENT IN POLICING

Since the early 1990's the police profession has been immersed in innovation. Defined as a "philosophical revolution" (Malcolm, 1989) and the "most significant redefinition of police work in the past half century" (Wilson and Kelling, 1989) Community Oriented Policing and Problem Oriented Policing became dominant approaches to policing. As a dramatic response to a period of crisis where police activities had little impact on the rapid rise in crime, these innovations were diffused and adopted by the profession. Combined with the rise and diffusion of computer technology, this period of innovation has been facilitated by research, which in turn, has led to the adoption of even more sophisticated innovations such as computer based crime mapping. Known as a conservative profession resistant to change the police are now viewed as on the "forefront of innovation in criminal justice" (Weisburd, 2001).

In spite of the transformation of the policing profession and the subsequent role of innovation, little is known about the nature of the police as innovators. This omission is significant for at least two reasons. First, it has been suggested, that this period of innovation may be slowing. As optimistic research and the declining crime trends relieve the pressure for what has been termed 'radical innovation' there are indications that police departments may becoming more resistant to innovation (Weisburd, 2001). Absent an understanding of the innovation process in policing it is difficult to accurately assess and then address barriers to innovation. Secondly, in an "internet world" where information flows at the "speed of thought" keeping pace with a rapidly changing world is not enough. As the September 11th , 2001 World Trade Center attacks illustrate, it is now essential to anticipate and prepare for problems in the future. Innovation is not just about keeping up, but essential to getting ahead on public safety. If the police profession is to remain open to innovation, and remain relevant to the problems of the future, a more strategic understanding of *innovation leadership* is essential. The research reported below addresses the lack of focused research on the process of innovation in policing and specifically addresses the question: What is the nature of innovation leadership and specifically the nature of a police innovator? The theoretical framework for this inquiry is the *Diffusion of Innovations Model.*

THE DIFFUSION OF INNOVATIONS MODEL AND POLICE INNOVATION

Over the last fifty years, the interest in *innovation* has converged into a field of study best represented by the *Diffusion of Innovations Model*. Developed by Everett Rogers (1995), the *Diffusion of Innovations Model* provides a useful model for examining the process of innovation in policing because it provides a comprehensive framework for understanding how a new idea, technique, or invention is generated, defined and finally adopted. Originally, the model focused upon how innovations were communicated linearly throughout a social system to lead to the adoption of the innovation. The model has evolved, now stressing the importance of the iterative nature of social interaction as innovation traverses the various stages in an innovation process. The theory rests on the view that "uncertainty is generated by an innovation"("Rogers, 1995, xvii) which creates new, possibly superior alternatives to existing means for solving problems, thus leading to the search for information. This search is manifested in social process that eventually determines the meaning of the innovation. Rather than information flowing in a linear fashion, the theory now stresses a convergence model where "participants create and share information with one another to reach a mutual understanding" of the innovation and its implementation (Rogers, 1995 xvi).

A central feature of the *Diffusion of Innovations Model* is the role of *innovativeness* in the process of adopting an innovation. Innovativeness is the degree to which an individual or other unit of adoption implements new ideas before other members of a system (Rogers, 1995, 252). Innovativeness indicates observable behavioral change that demonstrates the adoption of an innovation and is considered a "bottom-line" type of behavior in the diffusion process. Based upon an innovativeness score or measure, adopters of innovations can be placed into one of five "adopter categories" ranging from those who have the highest innovation score to those with the lowest. These categories are defined as: 1) Innovators-venturesome; 2) Early Adopters-respect; 3) Early Majority-deliberate; 4) Late Majority-skeptical; and 5) Laggards-traditional. Both individuals and organizations can be located within adopter categories and distinguished by factors such as economic status, personality- traits, communication behavior, organizational size, organizational openness, leadership, etc. (Rogers, 1995).

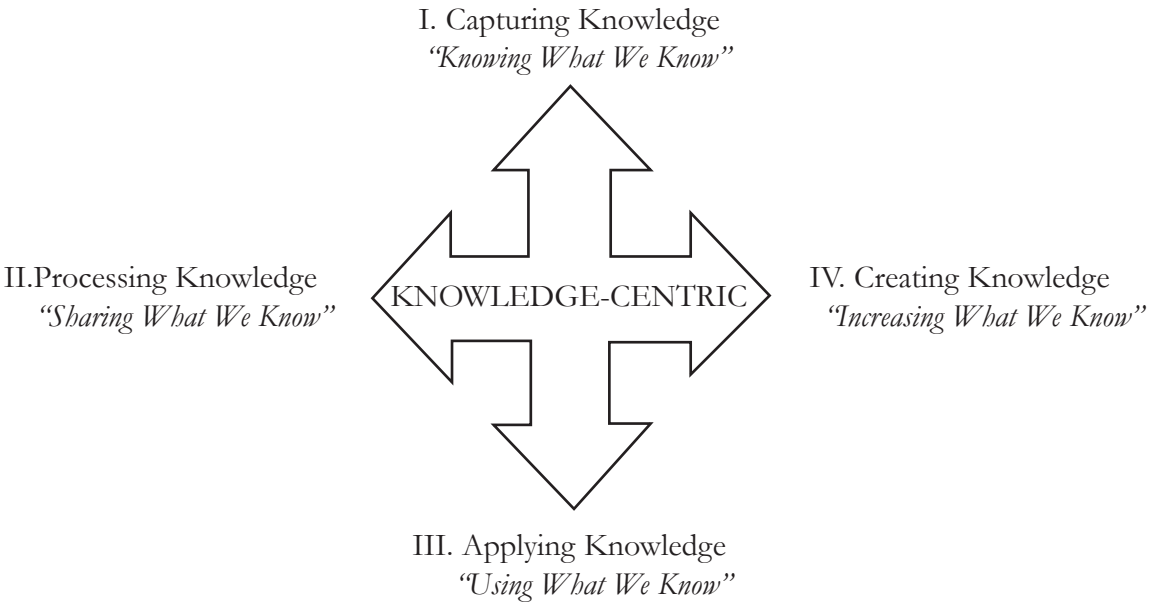
One key factor in the diffusion of innovations process is innovation leadership. This leadership role is generally assumed by an individual or an organization that "launches" new ideas into a system generally from outside the system boundaries. Categorized as the Innovator, this individual or organization plays a gate-keeping role in the flow of ideas into a system (Rogers, 1995, pp 264). Examples of organizational Innovators in policing are the Los Angeles Police Department and their role in launching the D.A.R.E. program (Rogers, 1993), and the New York Police Department in their role in introducing COMSTAT to the police profession (Pendleton, 2002b).

KNOWLEDGE MANAGEMENT AS A POLICE INNOVATION

One effect of the recent period of police innovation has been the increased importance of developing, accessing and applying professional knowledge to police problems. Knowledge and its management, is consistently viewed as a "bed rock necessity" for innovation in police problem solving (Geller and Swanger, 1995 pp 154). Herman Goldstein in his seminal work on Problem Oriented Policing (POP) consistently emphasized the critical role of knowledge to police problem solving. Goldstein (1990) noted the difficulties of tapping implicit knowledge "stored in the minds of rank and file police officers" to analyze problems (pp 93), the importance of sharing knowledge with citizens as one aspect of solving problems (pp 114), the lack of a "tradition of proceeding logically from knowledge gained…to the fashioning of an appropriate response" (pp 15), and the importance of creating new knowledge through self critique (pp15) cross system knowledge sharing (pp 168-171) and research (pp 171-172). Quite simply, knowledge management is at the heart of Problem Oriented Policing.

The *knowledge-centric* nature of recent police innovations, clearly establishes the need for Knowledge Management as an innovation in and of its self. While Knowledge Management (KM) as an innovation has been recognized in the private sector (Hansen, et. al. 1999, Gore and Gore, 1999, Hickins, 1999), it is only now emerging in the police profession. Pendleton (2002b), in his study of knowledge management in policing, has developed a model that seems relevant to innovation leadership. Pattern analysis of the data supports a police knowledge management model that is a loosely bundled but interconnected set of management activities designed to capitalize on the intellectual assets (Pendleton, 2001). Knowledge management in this model is not a passive activity, but a *purposeful organizational strategy* that is integrally related to organizational activities. Known as an innovation cluster (Rogers, 1995), the four-part police knowledge management model provides a useful framework for understanding how knowledge is captured, shared, applied and created in public safety organizations (Figure 1).

Figure 1.
POLICE KNOWLEDGE MANAGEMENT MODEL



THE STUDY

Innovation leadership is not just an individual attribute. Rather, innovation is both an individual as well as an organizational characteristic (Rogers, 1995). Early studies of organizational innovation simply transferred models and methods used to understand individual innovativeness to organizational research with little regard for the differences. While many of the factors that predict innovativeness in an individual also have counter parts within organizations, some, like system openness and formalization, are found only within the organizational context. It is important, therefore, that organizational innovation research is guided by analytical strategies that are sensitive to the nature of organizational innovation. One important feature of organizational innovation is its stage or process nature. Organizational innovations generally follow a multi-step process from initiation to implementation (Rogers, 1995, pp392). The Police Knowledge Management Model, as an innovation cluster, allows for such a phase based analysis because its four parts are *synergistically linked*, so if one part of the KM model is adopted it facilitates adoption of the others (Rogers, 1995, pp 381).

Another useful application of the Police Knowledge Management Model is to assess the degree of KM innovativeness adopted by police organizations. Pendleton (2002), in his study of Knowledge Management in police departments, noted that police departments are distinguished by the level of adoption and degree of collaboration that are utilized within each of the areas in the model. Some police organizations can adopt KM strategies that fall in only one of the four types of Knowledge Management, while others have adopted Knowledge Management in several of the areas. Some police departments may engage in KM activities in all of the areas of the model but do not utilize a collaborative approach in their application. It was rare, however, to find a police department that had adopted Knowledge Management as a purposeful organizational strategy with activities in all four areas of the model with an emphasis on collaboration. Such an organization can be classified as a Knowledge Management Innovator and could provide valuable insight into innovation leadership.

THE CASE STUDY METHOD

One of the most valuable strategies for understanding organizational innovativeness is to look *within* a specific organization rather than *across* numerous organizations. This case study approach (selected for this research) has provided valuable insight into the process of innovation and the characteristics of an innovative organization (Rogers 1995).

By utilizing the Police Knowledge Management Model, the Redlands Police Department (RPD) in Redlands, California was identified as a police Knowledge Management Innovator and was selected as a case study of innovation leadership. The RPD was selected by reviewing data from a COPS funded research fellowship that was initiated but not completed by another researcher to survey how Knowledge Management was applied to street level police problems in police departments across the country . Specifically, 58 police departments from around the United States were surveyed using a phone questionnaire methodology. Narrative data was reviewed to determine the nature and characteristics of KM techniques currently in use in these departments. Since the fellowship research data was collected, the Redlands Police Department was also selected as the lead agency in an innovative pilot project known as the COMPASS (Community, Mapping, Planning, and Analysis for Safety Strategies) initiative. Defined as a *total knowledge management system*, COMPASS is a new criminal justice initiative to address crime and disorder, which involves multiple policy partners, diverse data sources, strategic analysis and interventions (Pendleton 2002).

An ethnographic methodology, the mainstay of the Anthropological Research tradition, was selected to accommodate the (emerging) nature of the research topic and the qualitative nature of available data (Atkinson and Hammersley, 1994). This approach is common in the study of diffusion of innovations research (Rogers, 1995). During a 12-month research period the principal investigator utilized three approaches to data collection. Data collection was guided by specific questions that were organized by the four components of the Police Knowledge Management Model (*see Appendix 1*).

Direct Observation

Three site visits were conducted to observe the social system and organizational setting in which knowledge management occurs. Specific Knowledge Management activities such as COMSTAT meetings, staff meetings, and COMPASS meetings were attended and observed. In addition, a police ride along was conducted to observe the community in which policing occurs.

Key Informant Interviews

Numerous interviews and informal conversations were conducted during site visits, phone conversations, and meetings at jointly attended conferences in which participants from the organization under study attended. Participants included the Chief of Police, command officers, patrol officers, professional staff, and community members.

Secondary Data

Numerous reports, maps, crime data, and documents within the Police Department library, were collected and reviewed.

THE COMMUNITY AND ORGANIZATIONAL CONTEXT FOR INNOVATION

The Redlands Police Department (RPD) is located within a population of 70,000 people that is located in San Bernardino County, the largest county in the United States (20,000 sq. mi.), 60 miles east of Los Angeles. It has contiguous boarders with five other cities and together this area known as "East Valley" has a population of approximately 350,000 people. Located within Redlands, or within the immediate vicinity are four universities, two junior colleges and the world's largest producer of geographic information system (GIS) software. These institutions create an environment rich in learning opportunities as each has a different emphasis. For instance, the University of Redlands, a nationally acclaimed liberal arts school, has a strong emphasis on the use of GIS as a community-wide endeavor to create sustainable communities and provides the RPD with a endless supply of interns. Loma Linda University' School of Public Health has a focused interest in crime and public safety as a component of its holistic orientation to "community health." California State University at San Bernardino has a strong criminal justice program as does the University of California, Riverside. Finally, while Redlands-based Environmental Systems Research Institute (ESRI) is a private corporation, it has a distinct emphasis on learning within the context of developing more powerful and useful software tools.

Innovation As An Applied Professional Philosophy

The RPD has a long-standing commitment to innovation. This commitment is formally established in Department documents as a written organizational value that is further articulated by written belief statements. This self-description of the Department and its natural inclination for knowledge management illustrates this commitment:

> "The Redlands Police Department's commitment to the city is best captured in a quote by Albert Einstein: 'The world we created today has problems which cannot be solved by thinking the way we thought when we created them'. Determining new and innovative techniques based on research that drives strategies we pursue is an integral aspect of Risk-Focused Policing (Community Report, 2000 pp6)."

The Department was an early adopter (1993) of Community Policing and Problem Oriented Policing innovations. In 1998, these innovations were further developed with the implementation of Risk Focused Policing. Risk Focused Policing is defined as "data and results-driven, community oriented policing and problem solving strategy which focuses on those factors in a community which places its youth and families most at risk for criminal and other problem behaviors" (Bueerman, 2000, pp26). This approach relies on the extensive research on adolescent behavior and the application of assessment and intervention techniques that address the risk factors that underlie most youth problem behaviors. The adoption of the Risk Focused Policing innovation is based on *collaboration*, the first of five formally stated core values of the Department. In 2000, the Redlands Risk Focused Policing Program was selected as one of the 25 finalists from 1300 applicants to the Innovations in American Government Award Program. The Program started in 1986, is administered by the Harvard University's John F. Kennedy School of Government in partnership with the Council for Excellence in Government to honor innovative public service.

The RPD is unique in its organizational structure. In 1997, the Department initiated a proposal to consolidate the city's Human Services Department into the Police Department as a means to advance Community Policing. This restructuring placed the Housing Division and the Recreation Division under the structure and control of the RPD. This innovative organizational structure reflects a "front-end" public safety philosophy that is directed at the causes of crime rather than the traditional reactive approach that relies solely on command and control techniques. The inclusion of recreational programs and housing resources gives the Department the ability to direct resources at preventing youth crime and attacking neighborhood blight. This organizational structure explains the unusually high number of civilian employees (85) relative to sworn police officers (86) that respond to 45,000 annual calls for service, of which approximately 7,000 are reported crimes.

THE NATURE AND ROLE OF INNOVATION LEADERSHIP

The innovation process in organizations consists of two broad sets of activities known as Initiation processes and Implementation processes. Initiation processes include the activities leading up to the decision to adopt an innovation such as information gathering, conceptualizing and planning. Implementation processes are those events, actions and decisions involved in putting the innovation to use (Rogers, 1995). In most innovation processes, the decision to adopt an innovation creates a "bright line" between these two sets of processes.

One key factor in the diffusion of innovations process is innovation leadership. This leadership role is generally assumed by an individual or an organization that "launches" new ideas into a system generally from outside the system boundaries. Categorized as the Innovator, this individual or organization plays a gate-keeping role in the flow of ideas into a system (Rogers, 1995, pp 264). The research on innovations in organizations is consistent and clear, that innovation leadership is determined, in part, by the involvement of an innovation champion (i.e., one who overcomes resistance to a project and leads in the design and adoption of an innovation) (Rogers, 1995). A Knowledge Management champion is a charismatic individual who throws his/her weight behind the innovation to overcome resistance to become an effective organizational sponsor for adoption of the idea.

The Knowledge Management Champion may or may not be the person who first encounters the innovation. The distinction between initiation leadership and implementation leadership is important to the ultimate application of an innovation. The selection of a Knowledge Management Champion can be purposeful to reflect the demands of both the initiation phase (decision to adopt) and the implementation phase. Yet the leadership demands during the initiation phase may be quite different than those required during implementation. If the RPD Knowledge Management Initiative was to be adopted it would require both initiation and implementation leadership.

Initiation Leadership: The Chief As An Innovation Champion

In 1998, the City of Redlands retained a new Chief of Police who had served for twenty years in the RPD. The RPD police chief has acted as the Department's change agent since his promotion to captain in 1993. Among the core principals of the new Chief's leadership philosophy was a commitment to collaboration, data driven decisions, knowledge based service, and innovation. As such, considerable effort has been focused developing the personal skills necessary to promote organizational innovation and change. The Chief, as an innovation leader, has shaped his approach around three key beliefs: 1) It is better to define your own future than allow outside influences to do it for

you; 2) Albert Einstein's belief that "the problems we face today cannot be solved using the same thinking we employed at the time they were created" became his professional, innovation anchor; and 3) The principle of "displacement of concept", which is the notion that ideas in one discipline can be applied in another field to yield new learning. Central to this last principle is the "scanning" multiple sources of information to identify new ideas that can be "displaced" to policing.

Two specific areas of interest have defined innovation leadership within RPD: community policing and the use of geographic information systems. By finding analogies in public health services to policing the chief has become involved in discussions and projects at the regional, state and national levels relative to developing "healthy cities" and "livable communities." When the Chief initiated the move to consolidate housing, recreation and senior services within the police department, and then adopting "risk and protective focused prevention" as a community policing paradigm, he became networked with innovators in health, community development, recreation, senior services, education, drug rehabilitation, prisoner re-entry and family strengthening. This innovation network became a source for ideas that could be appropriated as part of the evolving RPD's community policing strategy.

Central to RPD's innovation leadership strategy is the commitment to partnerships, collaboration, researched-based and data-driven decisions, and the belief that a lack of immediately identifiable funds with which to accomplish innovative organizational goals is not a valid excuse for not pursuing the innovation. This latter point has helped the RPD explore a wide breadth of funding sources that range from state and federal grants, foundation funds, community resources and an aggressive orientation to the department's budget simply as a "tool" to be used to expand organizational horizons and not as a controlling end onto itself.

The displacement of concept scanning includes searching for possible applications of for-profit business practices and paradigms to the non-profit, governmental enterprise of policing. This has resulted in the introduction into the department's culture of value alignment, the identification of value drivers as a way to increase organizational effectiveness, knowledge management, personal strategic development, customer surveys, and multiple marketing approaches to community safety.

Finally, the chief has clearly accepted the role of "chief marketer" of innovative ideas and frequently employs stakeholder analysis and building critical mass techniques for moving more public innovations across the community's social-political landscape. For example, when the Chief became aware of the number of seniors that lived alone, with alarmingly little contact with the community, he setout to create a senior transportation bus system operated by the Community Service Division of the RPD. Initially, this idea met with extensive opposition from a faction of the City Council and other city staff. Their opposition focused on funding and the expanding role (e.g. power base) of the police department. To counter this opposition, the chief analyzed the relevant stakeholders and their position on the issue. He then developed a strategy designed to move the individuals constituting the project's "critical mass" to positions where they minimally allowed the project to go forward. For example, to counter the "lack of funds" issue, he brokered an agreement with the local transportation agency to supply two used buses to the RPD, at no cost - instead of selling them at auction - and he used budgetary salary savings to fund the drivers. To counter the role expansion argument he spent considerable time marketing the concept to service clubs, retired citizen's groups, etc. so that by the time the proposal came before the City Council there was a groundswell of support that made it acceptable for the police to implement the project. This strategy has worked on a variety of other Department issues that range from the introduction of automatic external defibrillators in patrol cars, to employing business practices in recruiting experienced police officers, to purchasing a motel to open a city-operated prisoner re-entry facility as a means of controlling parolee-related crime.

From Innovation Leader To Innovation Liberator

While the Chief of Police is personally engaged in innovation leadership, there is a clear recognition that innovation is not simply within the purview of "management" but often has its roots in many other areas within an organization. To tap this vital source of innovation, the Chief of Police routinely joins patrol team briefings once-a-month, meets with individual officers over coffee, and does ride-along with officers to tap into the knowledge individuals "at the line level" about how to do things better. During a recent "ride-along" with a new officer, the Chief asked how they might improve operations. The officer then demonstrated a very unique street location tool he put together to help him find his way through the very confusing south side of Redlands. The Chief asked the officer why more people didn't use it and he said as a new officer he was told by a veteran that he could not propose the idea. With the officer's permission and ensuring that the officer received the credit, the Department has now issued his system to all new officers. This is but one example of how the Chief is increasingly serving as an "innovation liberator" of ideas from employees who find innovation barriers within the organization.

Innovation Implementation Leadership: The Deputy Chief As An Innovation Champion

One of the more common complaints expressed by police chiefs of small and medium sized police departments is their lack of time to focus on strategic, innovative or course altering organizational issues. A frequent metaphor invoked by these chiefs is that they have become more like firefighters than police officers, constantly "extinguishing" organizational or political "fires" that ultimately consume tremendous amounts of their time - and perhaps more importantly - their creative energy. The majority of these organizations have a management position directly subordinate to the chief - typically a captain or lieutenant. However, the organizational focus of these positions is usually division-specific (e.g. field operations or administration) and precludes their systemic view of the day-to-day operations. In smaller departments, where there may only be one manager between line operations and the police chief, the culture of the department or city is typically such that there is an expectation that the chief will personally oversee these daily activities, thereby dooming him or her to the role of organizational firefighter rather than innovation or change agent.

The RPD's Deputy Police Chief plays an integral role in pushing the Department's orientation toward innovation and knowledge management. The police chief's intent has long been to inject private sector business practices into the governmental model of policing. Accordingly, the relationship of Police Chief and Deputy Chief is akin to that of a Chief Executive Officer to a corporate President. The RPD Deputy Chief, acting as the "President" of the RPD "corporation," focuses the majority of his energies on managing the day-to-day activities of the department, "putting out" unavoidable organizational "fires" that must be dealt with but do not generally advance organizational development. This allows the Chief, as CEO, to focus on issues that move the Department forward in an innovative, strategic direction.

As an added bonus to the RPD, the Deputy Chief also acts as the Department's Chief Technology Officer (CTO). As a personal interest he has been involved in the use of computer technology as a means of leveraging the community's investment in the RPD. Since assuming the role of CTO, he has also been tasked with examining and experimenting with other types of innovative technology to increase the Department's effectiveness. To facilitate this role, he spends a considerable amount of time researching innovative approaches to the use of technology by reviewing publications, technology-focused websites, visiting a diverse range of public and private organizations and attends a variety of trade shows. It is clear that without the Deputy Chief's contributions, the RPD's ability to innovate would be significantly limited. He directly facilitates the Police Chief's ability to consider and implement innovative organizational and community strategies.

Innovation Implementation Leadership: Change and Organizational Resistance

Like most law enforcement organizations, the RPD experienced internal resistance to change prior to 1998 when the current police chief was appointed. By appropriating the concept of "self examination" from the field of psychology and applying it to the RPD, along with many of the techniques used by family-marriage therapists, resulted in many, and sometimes uncomfortable, discussions at multiple levels within the Department about the organization's tolerance for ambiguity, change and innovation. The outcome was a collective understanding of the Department's present capacity for tolerating change and more importantly, an awareness and acceptance that the department, 1) was going to change; 2) it was absolutely acceptable to express frustration, concern and even fear of the organizational "unknowns; and 3) with frequent opportunities for input and non-judgmental dialogue about the state of the Department's progress, each member would be able to understand where he or she fit into the Department's future. The police chief ensured that Department members knew that there would be considerable change in the Department's orientation, what the nature of the change was likely to be, and what values and skills members would be required to exhibit to be successful in the new organizational environment. The Chief repeatedly articulated the notion that not everyone would find this level of change acceptable. It became clear that there would be no organizational consequence or ill will if any member found these changes unacceptable and chose to seek employment elsewhere. Further, assistance was provided to those members who chose to leave the Department and it was made clear they would be welcome as part of the extended "RPD Family" anytime. As a result, several police officers left the Department for a nearby, more traditional department, with the chief's assistance, and remain friendly and welcome at the RPD. Interestingly, it was only police officers that chose to leave during this 18-24 month evolutionary period.

One of the skills the Department's managers had to learn was their own tolerance for dealing with the frustrations and fear of department members who behaved in ways inconsistent with the Department's direction. They had to learn to deal with the behaviors by first understanding that they were usually the result of the members' confusion, frustration and fears that were driven by the organizational change. In every case, this lead to Department members making decisions that were "good for them" and resulted in either better, happier performance on their part or moving to another department where they believed they would be more content.

Today, entry or lateral candidates for the Department, and employees competing for promotions, must demonstrate a high tolerance for ambiguity and change to be successful. This has dramatically reduced the natural tension associated with organizational change and has resulted in the RPD developing a reputation as "being about change." This allows most candidates to self-select relative to seeking employment in a change-friendly organization.

Innovation Implementation Leadership: A Shared Organizational Strategy

Central to the philosophy of innovation leadership is the view that innovation is a shared value among groups within the Redlands Police Department. Accordingly, the Chief has instituted Department focus groups (i.e. women officers, lateral officers, dispatchers, records clerks, etc.) to determine ways to improve Department operations. A recent "women's officer" focus group was convened to learn 1) what is it like to be a woman cop at the RPD; 2) what could we do to improve their professional experience and, 3) what could be done to recruit more women. This resulted in an interesting discussion about how women officers are frequently made to make a choice between careers and having children. During the meeting officers indicated their intention to resign within the next two years so they could start families. Their belief was that the RPD would not allow part time work and they would have to put their careers on hold, or abandon them, in order to become mothers. As part of this effort it was decided to figured out how to allow officers to work part time (as little as two days per week) to keep their careers going and deal with family issues such as having/raising Children or dealing with illnesses. An outcome of the focus group was a series of policies such as flex scheduling to better enable women police officers to balance their family and career demands. These policy innovations are now used as recruiting tools to attract women officers that had to leave the field because the paradigm of California police departments is such that they do not allow officers to work part time.

THE REDLANDS POLICE DEPARTMENT'S KNOWLEDGE MANAGEMENT INITIATIVE

The Redlands Police Department in northern California agreed to serve as a case study site for this research after reviewing a participation proposal. While reviewing the proposal, the leaders in the Department recognized that the Department had been involved in a variety of activities that are clearly Knowledge Management in their nature and purpose. While many of these knowledge management activities had been established for a period of time, and others were under development, these efforts had yet to be recognized or formally defined as Knowledge Management innovations. The convergence of this study with the on-going Department activities led to the specific adoption of the Police Knowledge Management Model (Pendleton, 2002) as the primary organizing vehicle for a subsequent purposeful knowledge management strategy. As this case study began, the Redlands Police Department launched the RPD Knowledge Management Initiative.

STAGE I

CAPTURING KNOWLEDGE: KNOWING WHAT WE KNOW

The starting point for the Knowledge Management Initiative is making knowledge that exists within and around the organization both known and available. This fundamental task is built on assessment and collaboration that transcends a knowledge management continuum (Pendleton 2002) from individual knowledge to organizational knowledge and finally community or social system based knowledge. Knowing what others know is at the heart of this first step in the Knowledge Management Model.

Knowing What We Know, Recruiting What We Don't

One of the least discussed but more profound trends that is impacting policing in America, is the retirement of large groups of officers from the policing profession. This group of officers, who were hired in the sixties and seventies, are now eligible for retirement. This rather large cohort of police professionals will be leaving en masse over a relative short period of time. The impact of this *cohort effect* is the loss of a large body of professional knowledge and experience. Interim measures are currently being considered by state legislatures, such as California's proposition 350 which will allow retiring police personnel the option to collect both their retirement pensions and return to their departments for a specified period to stem the tide of this professional "brain drain". The leadership in the Redlands Police Department has recognized this problem and has crafted a portion of their Knowledge Management Initiative to address this issue over a long period of time.

The RPD has started a two-step process called the Knowledge Inventory. Using a knowledge inventory form, supervisors will interview each of the personnel under their assigned areas and record the various skills, experience, and expertise of all the employees in the Department. The form collects information directly related to Department-sponsored training of its members as well as information about their non-traditional expertise. For example, the form asks members what licenses, certificates or ratings they hold that may or may not relate directly to their duties (e.g. scuba diving, martial arts, racing, etc,), what skills they may have that they feel proficient in (e.g. wood working, language skills, photography) and even asks what special talents they possess (e.g. musical, artistic, etc.). This data will be entered into a searchable data-base for use within the Department allowing others to identify and access their colleagues when there is a need for particular types of knowledge and experience.

The second step in the process is to create a knowledge profile of the Department to determine the areas of knowledge strengths and weaknesses. This analysis will be conducted and then formally integrated into the recruitment and selection process for new personnel within the Department. Based upon the knowledge profile the Department can implement in an *organizational engineering* strategy (Pendleton, 1999) that would include targeted hiring and targeted training of personnel to fit the needs of the organization as a whole. As a starting point for both the assessment and subsequent selection of new employees, new candidates must demonstrate abilities in 10 core competency areas that include a collaborative orientation, knowledge seeking, and a sense of vision, all of which support innovation.

Knowing Who Knows Who: Case Knowledge Teams

The leadership of the RPD has known for some time that the Department actually has much more data and knowledge stored than is ever harnessed for the delivery of police service. The underutilization of data is common in the policing profession and in many departments has rendered existing data banks as dustbins of data far removed from daily problem solving. The Community Analysis Unit (discussed below) of the RPD has reversed this professional phenomenon by making both the unit and existing data banks accessible. One innovative application of the data centers on knowing who in the Department has had contact with specific individuals and/or places of interest in the delivery of police services. All reports and calls for service are stored in data banks as "event fields" that correspond to numerous characteristics of the case or event. Officers who want to know who in their department knows the people related to the case are harnessing this standard data acquisition and storage protocol. In some instances, investigators can actually identify in chronological sequence which of their colleagues has had contact with an individual of interest and then convene this group of officers for a discussion concerning the case. The searching of the Department data banks and creation of knowledge teams about cases is but one of several applications of the ability to identify and link police personnel to a wide range of case characteristics. Another innovative use of this data is to create "after action knowledge teams" which will be discussed below.

Knowing Who Knows What: Utilizing Knowledge Management Vehicles

The leadership of RPD recognized that most data systems in existence are not linked and most collaborative partners are not yet familiar with the notion that their data may be of extreme value to others and vice versa. For instance, the schools in the Redlands community have long collected data of at risk youth in the forms of suspensions and expulsions. But it was not until the East Valley went through the Communities That Care ® community building process, and introduced the Risk and Protective Focused Protection as a "community operating system" that school officials realized the police had a vested interest in student data. As a result, the school district reworked some of its data fields and now shares data with RPD.

Using this community collaboration model, the RPD is utilizing its participation in the COMPASS initiative as a *knowledge management* vehicle for introducing the concept of integrated community data and learning what data these agencies and institutions have that already collaborate programmatically, but do not yet share data to identify and analyze problems related to public safety. This first step in the COMPASS process was a "stakeholder analysis" to identify and then approach over 34 entities spanning the criminal justice system, local governments, health care providers, housing officials, social service providers, schools, and other community based organizations to learn more specifically the nature of their data and the requirements for data sharing. This assessment will provide the first data framework for the COMPASS data system.

STAGE II

PACKAGING KNOWLEDGE: SHARING WHAT WE KNOW

The second step in the Knowledge Management Model is packaging and sharing of knowledge to empower its application to problems and issues. The Redlands Police Department utilizes a range of approaches to sharing knowledge that, again, ranges from individual to community level applications.

Organizational Knowledge Places

The Department conference room has been selected as a repository for key articles, reports and other documents that provide a knowledge frame of reference for the organization. The conference library is more than just a place for information, it is a place that is purposefully intended to communicate very specific organizational messages. A memorandum from the Chief of Police entitled "Suggested Reading List" serves as a prelude and organizing document for the library. The defining nature of the library and related literature is clear:

> "It is my intention that we develop a common understanding of the organizational values that are important to the citizens of Redlands and the members of this department and that these values are reflected in our promotional processes. To this end, I have modified our existing ***Suggested Reading List*** to clarify our focus on critical values and beliefs. This list will serve as the official 'study guide' relating to the philosophical aspects of each promotional opportunity within the department. It will be modified annually to reflect the evolution of our understandings and the advances in these pertinent fields of study."

The roster of 36 books and articles cover major topics such as Problem and Community Oriented Policing, Leadership, Organizational Change, and Creativity. Numerous articles in the library that promote innovation such as "How to Think Like An Innovator", "Managing Creativity", and "The Advantages of Partnering" signal and support the expectation of innovation and collaboration within the Department. Finally, historical documents that trace the development of organizational programs, structural changes and other key aspects of the Department are located in the conference room. Timely research documents, and publications of contemporary police articles along with monthly and annual reports are placed in the conference room library for easy reference.

From Crime Analysis To Community Analysis: The Community Analysis Unit. As a result of innovation leadership the RPD has adopted the view that "crime" is more accurately a result of multiple social dynamics and that "crime analysis" should more appropriately be a subset of "community analysis." Based on this view, the RPD transformed and broadened its Crime Analysis Unit to become a Community Analysis Unit. The community analysis unit (CAU) plays a prominent role in the Department and is a place where data is transformed into knowledge. The CAU produces a set of standard monthly crime reports that are eventually compiled into a year-end report. These reports do much more than simply document Department crime activities, but go beyond to summarize significant events, repeat calls for services by each event, and trends over time. A central feature of the CAU is the production of crime maps using the latest crime mapping technology. The mapping function supports both standard report production and specialized knowledge management process such as COMSTAT and COMPASS, discussed below. The CAU is more than a function, however, it is also a knowledge place where people go to obtain specific analysis of data that can be used on specific projects, cases and issues at hand. The location of CAU near the investigative units seems to facilitate use, although it is reported that many officers request CAU assistance. Officers and other Department employees were observed constantly in the CAU offices working with the staff to develop additional knowledge on specific projects and cases.

Knowledge Sharing Processes and Forums

RPD has, for some time, recognized the importance of sharing knowledge, particularly between individuals within the Department. One approach to individual sharing has been the policy of mandatory "post conference" and/or training presentations to the Department. This policy requires employees attending conferences to make a formal presentation on the nature of the conference, including knowledge gained by the experience. These presentations can take many forms with no limits on the forums within which they occur, ranging from Department-wide presentations, to unit or squad based sharing of lessons learned and knowledge gained.

Leadership Forums

The unique structure of the RPD that includes the Housing and Recreation-Parks divisions of the City of Redlands creates a unique forum for knowledge sharing. Weekly leadership staff meetings include members from not just the police, but also directors of Parks and Recreation and Housing. Information is blended during these meetings to form a more global view of leadership issues that redefine classic crime and disorder issues into community safety and well being issues. This approach transforms information into knowledge that places arrest and other command and control approaches at the service of often, larger strategies that emphasize prevention.

Tactical Forums

The RPD is currently in the process of implementing a crime mapping based format for patrol shift briefings. The goal is to utilize data that is current within 3 hours, to map, analyze and discuss crime in the different geographic locations within Redlands. The standard shift briefing will be an analytical forum focused on projected maps, which will lead to discussions designed to inform patrol officer assignments across the City. While still in the formative stage, this approach to knowledge management will bring a new perspective to the traditional patrol briefing on crime and disorder data.

Computer Statistics

The RPD has also adopted the COMSTAT process to address large-scale crime and disorder issues. Initiated in New York City, COMSTAT (computerized statistics) places crime mapping in a 'command and control' role. Mapping is used in conjunction with bi-weekly precinct meetings whereby the police commander is questioned on the nature of problems in their area and how they are responding. The COMSTAT process is conducted in an open forum and includes police command staff in a group setting. The G.I.S. presentation is a 'real time' analysis enabling crime analysts to identify crime hotspots and convene a meeting to craft and explain proposed responses (Groff and LaVigne, 1998).

COMSTAT in the RPD has just been initiated and is in its formative stages. The process is a facilitated review and discussion of projected maps and other crime data that is focused on a particular problem. Sworn police managers currently attend the process from the rank of sergeant and above, crime analysts, and specific employees that have a relevant role in the Department. One such employee is a state probation officer who is a member of the Department but carries a state caseload. This employee works closely with the police in the supervision and monitoring of known offenders that are living within the community. The COMSTAT process in Redlands is different than other programs as it places a higher value on creating knowledge about an issue over the heavy handed even demeaning approach to accountability that characterizes other such programs around the country. As this process is evolving the need for a much more structured and step-wise approach to the mapping and analysis of data has emerged along with the need for specific facilitation strategies during the process.

COMPASS

The sharing of knowledge that crosses organizational boundaries occurs freely in the RPD. The COMPASS process, which is also just in its formative stages, will include data from a wide range of agencies and their participation in the formation and implementation of the project. The plan for data sharing includes the formation of an "Information Management Committee" comprised of representatives from the Initiatives partners. The key to this collaborative partnership is in the unique nature of the long-term relationships among the participating partners, which is centered on trust and respect. Information Management Committee meetings will be an essential forum for crafting data sharing agreements, privacy protocols, and data use guidelines.

East Valley Community Analysis Center (EVCAC)

As part of the COMPASS process, the RPD will lead the way in developing the EVCAC. This center will be staffed full time to provide technical assistance to the members of the COMPASS project to facilitate timely exchange and analysis of COMPASS data. The purpose of the center will be to train and assist participants in the use of the COMPASS data.

Redlands Neighborhood Improvement Teams (RNIT)

The RNIT is a multidisciplinary team of City representatives that meet monthly to identify problems throughout Redlands that requires a "whole patient" approach to diagnosis and intervention. The RNIT consists of Community Policing Officers, Fire Inspectors, Code Enforcement Officers, Building and Safety Inspectors, the City Attorney, Housing Specialists, the Department Crime Analyst, and the Municipal Utilities Department. The RNIT meetings are used to both nominate and then share knowledge about a specific problem. Field tours of the problem location follow the initial meeting as a means to gain additional knowledge based upon the geographic space of the problem. A knowledge profile of the problem is crafted which then leads to interventions.

Community Service Policy

The RPD has implemented a policy that requires Department employees, Lieutenant rank and above, to join the board of directors of a community organization of their choice. This requirement is designed to not only provide service to the community, but to create linkages with community agencies to facilitate the sharing of knowledge and perspective on community issues. In effect, the community boardrooms become forums for sharing of knowledge across the entire community.

Web-based Knowledge Forums

The RPD has constructed a website that provides detailed information about the Department and its activities. A specific page has been devoted to CAU and provides the community with the ability to both view and/or request maps of crime and other police related activities throughout the community. The plan for the COMPASS project is to develop a "Citizens COMPASS" website that can be utilized using appropriate software to provide public access to community and public safety information deemed appropriate from the COMPASS data warehouse. Additional software and protocols will be provided to guide citizens in an intuitive approach to access and map COMPASS data.

STAGE III

APPLYING KNOWLEDGE: USING WHAT WE KNOW

The central feature to the RPD's Risk Focused Policing is the application of knowledge to inform intervention and problem solving strategies. Indeed, the ultimate purpose of Knowledge Management is not simply to make knowledge available, but to apply it to reach organizational objectives (Williams, 2001). In this case, the application of knowledge is focused on both external public safety problems, as well as internal organizational issues.

Applying Knowledge To Morph the Organization

As indicated earlier, the RPD is basing future recruiting and hiring decisions, in part, on the existing and desired knowledge inventory within the Police Department. One example of this process has been the recent hiring of a correctional probation officer as a member of the Department. It was determined that one approach to addressing the chronic offender was to link correctional probation officer knowledge with police knowledge. This employee carries a caseload of convicted offenders that have been released back into the Redlands community. In addition to providing guidance to the offenders, the officer also monitors their location and behavior. As an employee of the Department, the officer meets regularly with police officers to assist in crime analysis (see COMSTAT discussion below) to determine the relationship between offender behavior and current public safety problems.

Resource Allocation

One of the central features of Risk Focused Policing is the use of Geographic Information System software to map community risk factors to identify those neighborhoods with highest risk profiles and effectively focus on those areas with the greatest potential for change. Based upon this information, strategies have been developed to both prevent problems as well as to respond to problems. Recreation programs, under the control of the Police Department, are now taken into these neighborhoods, and a police officer is now assigned to drug court to assist with effective parental involvement. In addition the crime mapping G.I.S. system, has resulted in the Department eliminating static patrol districts traditionally utilized in the allocation of police patrols. Based upon crime mapping data, street level supervisors now establish street patrol assignments to fit the ever-changing crime map.

Crime and Disorder Applications

The application of Knowledge Management processes is evolving in the RPD. The use of both internal and cross boundary knowledge management vehicles such as COMSTAT, and COMPASS are in various stages of development.

- **COMSTAT**
  Although the COMSTAT process is just in its development stage, it has been used to address persistent crime trends. One such application was focused on the problem of commercial burglaries. The CAU unit completed a series of standard analysis of this rash of burglaries and a COMSTAT forum was convened to analyze, discuss, and then craft an intervention to apprehend the offenders. The presentation included location, time of day, and other standard crime analysis assessments. The facilitated discussion including over 20 officers probed the nature of the crimes to include a discussion led by the RPD probation officer on the possible role of known offenders in the community. Based upon the analysis and discussion, patrol officer special assignments were crafted to optimize the potential of apprehending and/or preventing the suspects from continuing the trend.
- **COMPASS**
  While still in its developmental stage at the time of this research, the RPD's selection as a COMPASS site is based, in part, on the commitment to identify a problem to be solved by using the COMPASS process. Once again, the guide for this effort is the RPD's Risk Focused Policing, which is centered on solving problems

STAGE IV

CREATING KNOWLEDGE: INCREASING WHAT WE KNOW

A critical component of the Police Knowledge Management Model is creating new knowledge. This commitment to increasing what we know is clearly evident in both the philosophy and practice of the Redlands Police Department. Creating knowledge in the RPD includes both learning from experience and from involvement in an independent research process.

Experience as Research and Development

There has been a long-standing police tradition of valuing experience. This tradition has been focused upon individuals and the experience they gain throughout their careers. More recently, there has been a recognition that organizations can also learn from experience if they have a commitment to continuous improvement. The Redlands Police Department is actively involved in creating knowledge in both of these areas.

Creating Knowledge Depth and Knowledge Breadth

The value of police experience, at the individual level, has been diluted over time by a primary focus on the general principal that time in the profession equates automatically to expertise. This view has failed to take into account that the road to promotion has featured a 'get your ticket punched" approach to career development. The effect has been to create, in many police departments, a cadre of dilatant's who have a breath of experience as they move rapidly through assignment, but no depth. RPD recognized this problem and has implemented a 'time in assignment' policy that requires officers who are promoted or assigned to a specific role, to remain in that role a minimum of 3 years and no more than 5. This policy has been implemented to assure that employees acquire both knowledge depth and breadth.

Creating Knowledge Linkage

RPD has also addressed the problem of knowledge silos. When officers transfer to another assignment they take with them all the experience and specific knowledge gained in their past assignment. To address this problem, RPD has a transition management protocol that requires transition assessments and briefings between the outgoing and incoming employees to a particular position. This process is designed to create both an understanding of the issues at hand but also a working relationship between the employees based on the understanding that they can call when experiential knowledge would inform subsequent efforts to manage issues.

After Action Reviews

One of the nine principles of management adopted by the RPD is creating a learning organization by seeking new knowledge as the result reviewing and assessing organizational activities and events. Accordingly, the RPD has developed an After Action Review process to learn from key events that occur within the organization. An After Action Review Form has been created that provides a basic outline of the information needed to learn from an event. A synopsis of the event is created to include descriptive information (time, location etc.). Key questions guide the process such as, what did we do right? What could we do better next time? How do we share this learning? One of the constraints on this process is the legal liability and the related personnel actions that often accompany reviews of difficult actions. These constraints often impede a complete and full understanding of an event (Pendleton, 2002) because of legal and personnel exposure. Redlands has recognized these constraints and is developing protocols to limit exposure to the Department and its personnel.

Creating Knowledge Through Research

The recent period of police innovation has been a journey from a closed profession with little research involvement, to being the subject of research, to being a partner with researchers. The next logical step in the police research experience is to move into a leading role, where the police conduct their own original research (Pendleton, 2002).
It is important to note that the Risk Focused Policing context for innovation within the RPD is grounded in a long program of research and features a research component in virtually all of the process related to its application. The RPD has been involved in both local and national research projects and as part of the Knowledge Management Initiative, there are plans to either employ or retain a department researcher.

- **The Innovation Exchange**
  The leadership of the RPD has recognized the opportunity to learn from other organizations and the expense associated with "re-inventing the wheel". While many police organizations are plagued with a bias of rejecting others approaches because it was "not invented here", that is not the case in Redlands. The leadership of RPD has sponsored and implemented a program called the Innovation Exchange. This is a collaborative program involving the law enforcement agencies of San Bernardino County. The purpose of the program is to allow employees from each of the participating departments to conduct a site visit to any department for 5-6 hours to observe how other departments operate and/or provide law enforcement services in areas that have been problematic in the employees department. The intent is to maintain "our competitive edge" by discovering how "our colleagues" are doing things better than "we are". Employees are

specifically instructed to abandon the mind set that "I know we do this better than they do" but to focus how "they do things better than we do". The program material provides a guide of potential areas for examination to help employees focus on specific areas during the observation.

- **The Staff Researcher**
  Historically, police have partnered with researchers at universities and other research organizations. Redlands has had a long history of work with both the local University of Redlands, and other organizations like the police foundation. The COMPASS project has a research component in which the RPD and other participants will participate as partners. However, the leadership of the RPD see the need for taking the lead on research and are making plans to address this need. Currently, the Department is planning to employ an "in house" Ph.D. researcher to conduct police research. While the specifics of this role and the type of research to be conducted is currently being developed, it is clear that the purpose is to create both an R& D function within the Department, as well as taking a lead in conducting original research applicable to the larger police profession.

INTERPRETATION AND DISCUSSION OF RESULTS

Data from this case study adds to our understanding of organizational innovation in policing and also provides additional insight into the nature of the Knowledge Management Innovation. The adoption of the Knowledge Management Initiative is related to the specific leadership of the Chief of Police, the organizational philosophy and structure of the Department, and the desire to collaborate effectively with the community within which RPD is located. The adoption of the Knowledge Management innovation, however, was not just a response to a specific need or problem to be solved, but also to the more global goal of being an innovator. In effect, the potential of the Knowledge Management innovation as an overt or purposeful management strategy was recognized as a way for the organization to effectively institutionalize its core values and beliefs about being innovative.

In some respects, this case departs from other research on organizational innovation. In the vast majority of research the size of an organization has consistently been positively related to innovativeness. Larger organizations are more innovative (Rogers, 1995, pp. 379), yet the Redlands Police Department can be considered to be a medium to small police organization. In this respect, data from this case study may usefully be applied to distinguish the difference between the *initiation phase* of the innovation process and the implementation phase. In this case, the data suggest that Innovation Leadership is weighted toward initiation of innovation, while a balance between initiation and actual implementation may actually better serve Organizational Innovativeness.

INNOVATION LEADERSHIP AND THE INITIATION OF INNOVATION

Innovation Leadership As Opportunistic Surveillance

It is common for innovative organizations to engage in what is termed *opportunistic surveillance* by scanning the environment for new ideas that might benefit the organization (Rogers, 1995, pp 393). One characteristic of innovation leadership is the active seeking of *awareness knowledge*. Rogers (1995, pp 165) notes that the first step in the innovation decision process is either an awareness of the need for an innovation or the awareness of an innovation. Awareness knowledge soon blends with what Rogers terms "how to" and "principles" knowledge and together creates a knowledge management role for the innovator as the process of innovation progresses through its various stages (Rogers, 1995)

In this case, the discovery of the Police Knowledge Management Model occurred because the Chief of Police was alert to new innovations. Rogers (1995) terms these surveillance behaviors as cosmopolitan in nature, which take the Chief far outside the organizational boundaries of the police department. Innovation leaders, like the Redlands Chief of Police, are characterized by vibrant communication networks that include a high degree of exposure to mass media, extensive interpersonal contacts, internet connectivity, and a range of other activities that place them at the forefront of knowledge about new ideas (Rogers, 1995; Weisburd, 2001). Data from this study show that a long-standing interpersonal network of multi-discipline leaders within the Redlands community facilitates many of the Knowledge Management activities. This network is characterized by collaboration, mutual trust, and joint efforts at problem solving within the community. Both the Chief and numerous members of the RPD are members in this vibrant network. Accordingly, data from this study demonstrates a willingness to successfully appropriate ideas from a variety of sectors within the network.

The Innovation Champion and The re-invention of innovation

A central factor to innovation process within organizations is the role of an Innovation Champion. The innovation champion is often the most powerful person in the organization such as a CEO, or in this case the Chief of Police. An innovation Champion can champion a specific innovation and/or create an organizational environment that nurtures innovation (Rogers, 1995). Data from this case study show that the Chief of Police was active in both respects.

The Chief did more than simply discover and adopt the Police Knowledge Management Model; he re-invented it to fit the nature of the Redlands Police Department. Termed the RPD's Knowledge Management Initiative, the original innovation was reinvented to both organize and link what had been separate activities, to capture, share, apply and create knowledge as a means to advance the organizations commitment to innovation. Specifically, the Knowledge Management Initiative stressed the linkage between components of the model, and how activities in one area would segway into activities in another. This re-invention process is common particularly among "loosely bundled innovations" like the Police Knowledge Management Model because of the inherent flexibility for adaptation to suit the unique conditions of the adopters (Rogers, 1995, pp. 178).

The Innovation Champion, Organizational Engineering and the Decision To Adopt

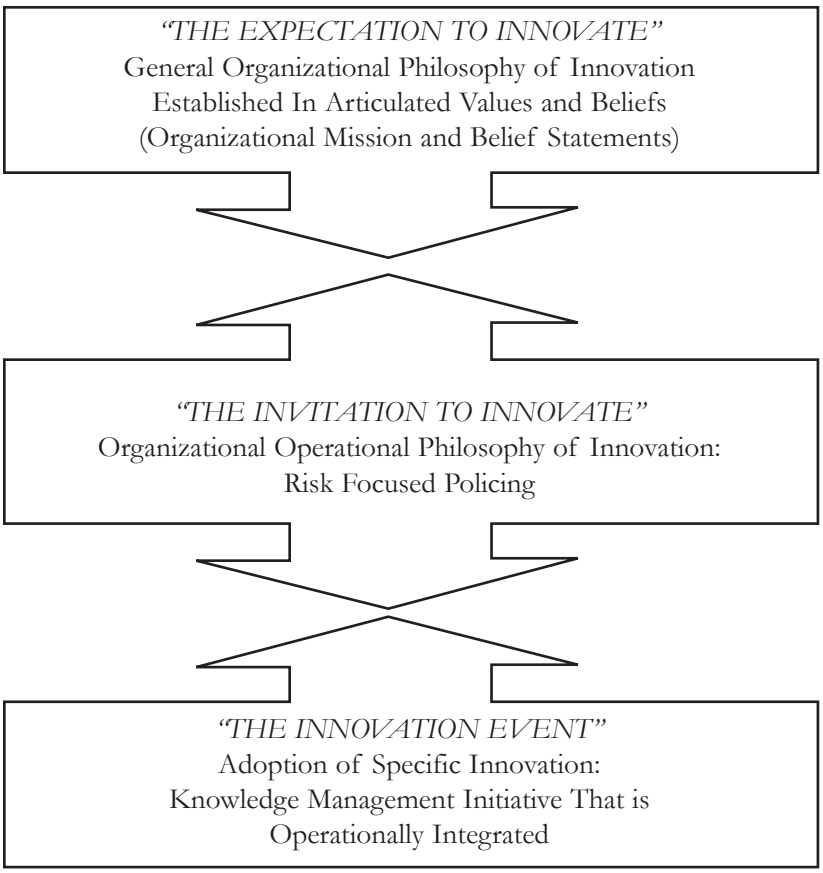
In organizations, the decision to adopt an innovation can be characterized be the number of individuals making the decision and the degree to which the decision is mandatory or optional (Rogers, 1995). In this case, the decision to adopt the Knowledge Management Innovation was made by the Chief to advance his vision of innovation within the organization. While the power to make organizational decisions is inherent in the role of Police Chief, without an organizational recognition of the Chief's *innovation expertise* both the desire to innovate and the implementation of innovation would be seriously undermined. In part, the "authority innovation-decision" (Rogers, 1995, pp 372) is possible because of the Chief's past success as an innovation leader. The successful re-organization of the police department to subsume the parks-recreation and housing functions in the city to facilitate the full application of the COP and POP innovations is both locally and nationally recognized as a unique accomplishment. The adoption of the Risk Focused Policing, which is also recognized nationally as unique within the profession, has led to a wide variety of innovations such as enhanced crime mapping, and the COMPASS project that have advanced the organization. These past accomplishments have combined to generate an influx of federal grant funds to further advance the development of the police department.

It is important to note, however, that the Knowledge Management Initiative is, in part, designed to shape the nature of the police department. As an organizational development tool, the Knowledge Inventory will be used to recruit and hire future police personnel while the Innovation Exchange is designed to advance the operations of the organization. The restructuring of the RPD to accommodate COP and POP innovations is consistent with other *knowledge-centric* recommendations for changing police department structure. Such ideas include turning Research and Grants Units in police departments into Research and Development Sections (Pendleton, 2000a) and changing the traditional police "training officer" into an Organizational Development Administrator (Pendleton, 1999). Both of these functions would report directly to the Chief of Police to facilitate an organization that is intrinsically innovative.

Organizational Innovativeness and the Implementation of Knowledge Management

As a social system, organizations provide the context within which organizational innovation occurs. Data from this case study show that the context for the Knowledge Management innovation in the RPD can be viewed as a three-part system that progresses from a general to specific orientation to innovation see Figure 2 on next page. The organizational context for innovation in the Redlands Police Department is fundamentally established as a general philosophy that is articulated in the written value and belief statements. A second tier of context is the defined operational philosophy of Risk Focused Policing that determines and empowers the organizational structure of the police department. Finally, the specific innovation of Knowledge Management along with others, are initiated within this context, but more importantly are measured within the criteria established by these organizational frames of reference. While the general organizational philosophy establish the expectation of innovation, the specific operational philosophy determines the nature of innovation.

Figure 2
ORGANIZATIONAL CONTEXT OF INNOVATION



Beyond Initiation: The Implementation of Innovation

Rogers has noted the importance of distinguishing between the initiation phase of innovation and the implementation phase. Many of the same factors that actually facilitate initiation in organizations can operate to defeat implementation of the innovation (Rogers, 1995, 381). In this study, the adoption of the Police Knowledge Management Model is too new to determine the final adoption outcomes. Yet the nature of the Knowledge Management Initiative as a cluster innovation that links both existing activities with new knowledge management activities suggest a strong likely hood that the activities in the model will ultimately be developed and utilized.

There is data, however, that suggests the implementation process will be impacted by limited resources and in particular the time necessary for implementation. Several organizational participants interviewed in this study noted that the organization is involved in so many innovative activities that there is a backlog of work to be accomplished to implement the innovations. In effect, the ability to implement is being outdistanced by the ability to fund and initiate innovations. In part, this may be the outcome of the "authority innovation-decision" style that can translate newly discovered innovations into directives, but without sufficient uncommitted resources, the innovations must wait in an implementation "take-off line" before becoming operational. The results of several organizational innovation studies show that the degree of *organizational slack*, or uncommitted resources is a causal factor in high levels of organizational innovativeness (Rogers, 1995, pp381).

As other Knowledge Management activities were being launched, several "bugs" have been identified that need to be addressed before meaningful implementation is possible. For example, the use of crime mapping in briefings and as a daily staffing tool has been limited by the time required to utilize the technology. In addition, the analytical facilitation process that was utilized in the COMSTAT process was awkward and needed refinement. These issues were being address as this study was being conducted.

Finally, as is the case with many cluster innovations, the implementation of one suggests the need for yet another. As the various components of the Knowledge Management Initiative have been linked, there is a clear need for an integration of the various components of the model. This integration model is currently being designed as an outcome of this research, and will feature a process that links, COMPASS, COMSTAT, Investigative Unit Analysis and Shift Briefings. In addition, there is a clear need for an Investigative Unit Knowledge Management Problem Solving Model that uses a four part strategy to address crime and disorder under consideration.

Data from this study has also provided a more specific understanding of Knowledge Management as a purposeful strategy within a police organization. Data suggest the importance of understanding and managing the linkage of the various components of a Knowledge Management strategy. Specifically, the Knowledge Management Initiative in the RPD illustrates the importance role of *Knowledge Management packages*.

Knowledge Management Process as Vehicles of Innovation

A fundamental feature of the RPD's Knowledge Management Initiative is the packaging of the knowledge management process within programs or projects. Several programs such as COMPASS, COMSTAT, RNIT, and After Action Reviews are utilized as knowledge management vehicles that create an occasion and processes for implementing one or more features of the Police Knowledge Management Model. In the case of COMPASS all of the components of the Knowledge Management Model are contained in the project, while others like After Action Reviews focus only a particular part of the model. Again, COMPASS is perhaps the complete Knowledge Management Vehicle not only because it contains all four of the elements of Knowledge Management, but its process is also designed to traverse agenda setting, matching, restructuring, clarifying and achieving a level of routine operation, that are the five stages of the organizational innovation process (Rogers, 1995,pp 392).

Knowledge Management Places

This study has also demonstrated that Knowledge Management is not just a process but it also can be a place. The RPD Library and the CAU office area are places in the organization where knowledge "happens". The linkage of the library with the conference room is interesting as it has both a static feel of a repository of documented organizational knowledge, but also a dynamic quality where decisions are made by putting knowledge into action.

In the case of the CAU, its central function, combined with its location in a pathway, facilitates the "place" nature of knowledge. Unlike the conference room, where one must "belong" in meetings, CAU is a completely open place where anyone can go during all hours of operation. As the Department becomes increasingly *knowledge-centric* it is likely that the CAU will become more of a gathering place as its role becomes increasingly more prominent.

It is also possible, however, that the knowledge places of the future for the RPD may be more individualized as web-based and other computer technologies are utilized to store data and create knowledge. Such a possibility seems to highlight the importance, or not, of an interpersonal process in the development of knowledge. During this study, numerous "spontaneous discussions" were observed between the staff of the CAU and officers around the meaning of data and its ultimate application. This iterative exchange seemed vital to both an understanding of information and its ultimate application. This same exchange was observed as a critical component of the COMSTAT process and in the COMPASS project (Pendleton, 2002a, Pendleton, 1999), although in both cases was viewed as a weak area in need of development.

CONCLUSION

This study suggests that the police innovator is more than an individual who is intrigued with new ideas, but is an *organizational place* where innovation happens. In this respect, the organization becomes known as the innovator where leadership is but one part of a larger innovation system. Knowledge Management, as a purposeful organizational strategy, is more than an innovation in itself, but is a fundamental part of the innovation process that is essential to sustaining an organizational culture that is based in innovation. The study also indicates that the next step in police Knowledge Management is to address the need to integrate the various KM techniques into an interrelated system. Such a system would link very specific crime type analysis with daily patrol strategies, monthly COMSTAT process and the larger COMPASS process that extends beyond the boundaries of the police department. Such a system is currently being designed and will be the focus of the next paper from the on going study of Knowledge Management in Policing.

REFERENCES

Atkinson, P. and Hamersley, M. (1994) 'Ethnography and participant observation. In *Handbook of Qualitative Research*, eds. Norman Denzin and Yvonna Lincoln, pp 248-261. Thousand Oaks, CA: Sage.

Bueermann, J. (2000) 'Neighborhood Safety with Risk Focused Policing', *The Neighborhood Works Journal*. 18 (2): 25-31.

Geller, W. and Swanger, G. (1995) *Managing Innovation In Policing: The Untapped Potential of the Middle Manager*, Washington, D.C.: Police Executive Research Forum.

Goldstein, H. (1990). *Problem Oriented Policing*. New York: McGraw-Hill Publishing Company.

Gore, C. and Gore, E. (1999) 'Knowledge Management: the way forward' *Total Quality Management* July, 554-560.

Groff, E. and LaVigne, N. (1998) 'The Use of Geographic Information Systems (G.I.S.) For State and Local Crime Analysis' Presented at the Conference of European Statisticians, Ottowa, Canada, October, 5-7, 1998.

Hansen, M., Nohria, N., Tierney, T. (1999) 'What's Your Strategy For Managing Knowledge? *Harvard Business Review* 77 (2): 106-112.

Hickins, M. (1999) 'Xerox Shares Its KNOWLEDGE', *Management Review*, September: 40-45.

Malcolm, A. (1989) 'Cities try out new approach to police work', New York Times, March 29.

Pendleton, M. (1999) "Understanding Organizational Change: The Achilles Heel of the Contemporary Executive". Presented at an Executive Leadership Seminar for the Washington State Criminal Justice Training Commission, April 22nd, 1999

Pendleton, M (2001). 'Charting a Course: Innovation Amidst the Perfect Storm'. Presented at the Annual Conference on Criminal Justice Research and Evaluation: Enhancing Police and Practice. Washington D.C., July 22-25, 2001.

Pendleton, M. (2002) 'On The Threshold Of An Innovation: Police And The Management Of Knowledge'.

Rogers, E. (1993) 'Diffusion and the Re-invention of Project D.A.R.E.', in Thomas E. Backer and Everett M. Rogers (eds.), *Organizational Aspects of Health Communication Campaigns: What Works?* Newbury Park, CA, Sage, pp. 139-162.

Rogers, E. (1995) *Diffusion of Innovations*, 4th edn. New York: The Free Press.

Weisburd, D. (2001) 'Translating Research Into Practice: Reflections on the Diffusion of Crime Mapping Innovation'. Presented at the Fifth Annual International Crime Mapping Research Conference. National Institute of Justice.

Wilson, J Q., and Kelling, G. 'Making neighborhoods safe". *The Atlantic Monthly*, 134: 46-52.

APPENDIX ONE

DATA COLLECTION QUESTIONS

I. CAPTURING WHAT WE KNOW

1. Do you use a "yellow paging" system for tracking and sharing employee expertise, experience, training etc.? Is it indexed and searchable? How does it work?
2. Do you use a searchable data base system for entering, indexing and searching documents related to specific police projects such as problem solving, neighborhood improvement teams, etc.? How does it work?
3. Do you use computer-based technology such as Lotus Notes, Intraspect, or other programs to record, track and re-use documents, e-mails etc.?
4. What face-to-face protocols are used to share information?
5. Is there a formal personnel transfer/transition protocol to pass along learning/information/knowledge?
6. Do you have a mentoring program?
7. Other questions as identified through a collaborative process with the department.

II. SHARING WHAT WE KNOW

8. Do you use intranet communication/chat rooms/communities of interest to share knowledge among members of the department? Nature of this system?
9. Do you use Lotus or some other e-mail mapping system or other systems to establish communities of interest? Nature of this system?
10. Do you use a COMSTAT process? Nature of this process?
11. How does CAU share data?
12. Do you have web-based access of police data for the public? Nature of this system?
13. What are other formal and the informal ways that knowledge is shared?
14. How are you linked to other city departments/agencies to share knowledge?
15. Other questions as identified through a collaborative process with the department.

III. USING WHAT WE KNOW

16. Does the department use the COMSTAT process to determine tactical and/or policy responses? Nature of this process?
17. What is the role of CAU and crime mapping in determining tactical and/or policy decisions?
18. Does the department have a systematic way to search, review and use prior efforts, solutions, research, evaluations, approaches etc. in specific areas to inform current-future policy-tactical decisions? Nature of this system?
19. How will/does COMPASS propose to use cross organizational data/processes to address selected issues?
20. What is/will be the police role in the COMPASS project/process?
21. Other questions as identified through a collaborative process with the department.

IV. INCREASING WHAT WE KNOW

22. Is there a systematic sharing of individual based knowledge such as performance analysis, conference report backs, problem solving debriefs and solution sharing etc.? Nature of these efforts?
23. What formal problem solving assessment protocols exist and how are they applied and shared?
24. Is the organization actively involved in professional research? Nature of the involvement?
25. How will the efforts of the COMPASS project be documented and shared?
26. How is existing research in the police and related fields utilized to inform on going and future tactical and policy issues?
27. Is/how are assessment efforts used in the COMSTAT process?
28. Is there a critical incident and/or case study review process used within the organization?
29. What is the relationship between the knowledge community (universities, private sector, etc.)?
30. How is city-community wide department/agency integration utilized to create knowledge, learning and additional understanding within the police department?
31. Other questions as identified through a collaborative process with the department.

CHAPTER 3

CREATING AN INNOVATION-CENTRIC POLICE DEPARTMENT: GUIDELINES FOR KNOWLEDGE MANAGEMENT IN POLICING

By Michael R. Pendleton Ph.D. and T. Dave Chavez, Jr., MS.

EXECUTIVE SUMMARY

If the police profession is to remain relevant to the challenges of the future, a more *innovation-centric* approach to organizational design and process may be required. One approach and supporting guidelines for designing an innovative police organization are offered. Specifically, this paper advances twelve guidelines for adopting and implementing Knowledge Management (KM) as an organizational development and management strategy for innovation in a police organization. These guidelines are based upon an extensive body of research of innovation and recent research on the nature of Knowledge Management and its potential application in the police profession. The guidelines are presented as a five part purposeful organizational strategy focused on: A.) Creating an Environment for Organizational Innovation; B.) Capturing Knowledge and Knowing What we Know; C.) Packaging Knowledge and Sharing What we Know; D.) Applying Knowledge and Using What We Know; and E.) Creating Knowledge and Increasing What We Know. Knowledge Management, as a purposeful organizational strategy, is more than an innovation in itself, but is a fundamental part of the innovation process that is essential to sustaining an organizational culture that is based in innovation. If the police profession is to sustain its position on the "cutting edge" of innovation, there is a need to integrate the various KM techniques into an interrelated system within the police department framework.

CREATING AN INNOVATION-CENTRIC POLICE DEPARTMENT: GUIDELINES FOR KNOWLEDGE MANAGEMENT IN POLICING

It is surprising, in an era of unprecedented innovation, that it is suggested that American police departments are showing signs of resisting innovation and change (Weisburd, 2001). While this view may seem to support conventional views of the police profession as intransigent and monolithic, it is inconsistent with the recent history of policing. Since 1990, the police profession has been immersed in innovation. Defined as a "philosophical revolution" (Malcolm, 1989) and the "most significant redefinition of police work in the past half century" (Wilson and Kelling, 1989) Community Oriented Policing and Problem Oriented Policing have become the dominant approaches to policing. Fueled by a crisis in policing these philosophical innovations along with management innovations such as COMSTAT and technological innovations such as crime mapping, have vaulted the police profession to the "cutting edge of criminal justice innovation" (Weisburd, 2001, pp 22). How then, could such a transformation be reversed?

David Weisburd (2001) has argued that such a reversal may be the result of declining crime rates and research evidence indicating police success in addressing crime and disorder. This view suggests that the crime and disorder problem is no longer the problem it once was to police. In effect, there is no longer a need to innovate. While aggregate measures of crime might suggest the police have mastered their craft, the relentless occurrence of high profile events sustains quite an opposite view. The 9-11 (2001) World Trade Center catastrophes, the Washington D.C. sniper, WTO riots and other high profile events are but a few of the on-going reminders that policing is an ever changing environment requiring a constant commitment to innovation. An alternative view of why police might appear less committed to innovation may be found not in what causes an organization to be innovative, but in the distinction between adopting innovation and implementing innovation.

Over the last fifty years, the interest in innovation has exploded to make this area of research one of the most comprehensive fields of behavioral science study in history (Rogers, 1995 pp. xv). One outcome of thousands of studies has been the clear finding that innovation occurs as a process with distinct stages or phases. The innovation process in an organization is a five-stage process that is broadly segmented into two areas that focus upon initiation and implementation. This process begins and is subsequently advanced by the acquisition and use of knowledge and is formally known as the Knowledge Stage (Rogers, 1995). Discovery of innovations require organizations to constantly scan their environment to create awareness knowledge as the first step in the organizational innovation process. Implementation of an innovation requires "how to" knowledge especially in the case of complex innovations. While most organizations focus upon developing awareness knowledge, "how to" knowledge is essential to effective implementation of innovation (Rogers, 1995, pp 166).

Absent organizational structures and processes that facilitate innovation, organizations can operate in ways that defeat innovation, often at the implementation stage (Van de Ven and Rogers 1988)). Such may be the case with recent police innovations such as Community Oriented Policing and COMSTAT type accountability programs where there are indications that these innovations struggle to move beyond rhetoric (decision to adopt) to reality (meaningful implementation) (Pendleton 2002,Weisburd et.a.l, 2001, Pendleton, 1999, Taylor, Fritsch and Caeti 1998). In effect, police resistance to innovation may be more the result of inattention to building organizational policy and processes that effectively link the initiation and implementation process of innovation. If the police profession is to remain relevant to the challenges of the future, a more *innovation-centric* approach to organizational design and process may be required.

The purpose of this paper is to offer one approach and supporting guidelines for designing an innovative police organization. Specifically, this paper advances twelve guidelines for adopting and implementing Knowledge Management as an organizational development and management strategy for innovation in a police organization. These guidelines are based upon an extensive body of research of innovation and recent research on the nature of Knowledge Management and its potential application in the police profession (Rogers, 1995: Pendleton, 2002; Pendleton and Bueermann, 2003).

INNOVATION AND KNOWLEDGE MANAGEMENT: BUILDING AN INNOVATIVE POLICE DEPARTMENT

Arguably, the most neglected topic in the recent era of police innovation has been the central role of "knowledge". This omission is significant for at least two reasons. First, knowledge and its management, is consistently viewed as a "bed rock necessity" for innovation in police problem solving (Geller and Swanger, 1995 pp 154). Herman Goldstein, in his seminal work on Problem Oriented Policing (POP) consistently emphasized the critical role of knowledge to the problem solving approach. Goldstein (1990) noted the difficulties of tapping implicit knowledge "stored in the minds of rank and file police officers" to analyze problems (pp 93), the importance of sharing knowledge with citizens as one aspect of solving problems (pp 114), the lack of a "tradition of proceeding logically from knowledge gained…to the fashioning of an appropriate response" (pp 15), and the importance of creating new knowledge through self critique (pp15) cross system knowledge sharing (pp 168-171) and research (pp 171-172). Quite simply, the management of knowledge is at the heart of Problem Oriented Policing.

Second, the recent adoption of innovations in policing, have followed rapidly growing trends that are knowledge-centric. Such trends include the expansions in computer based technology that facilitates processing and accessing vast amount of information to facilitate "data driven" decision making (Anselin, et.al., 2000). Tactical innovations have been implemented based upon the growth of knowledge about "what works" in addressing crime and disorder (Braga, 2001, Sherman, et.al., 1998), and the trend of research based knowledge dissemination which has been a central factor in the diffusion of police innovations (Weisburd, 2001).

The *knowledge-centric* nature of recent police innovations, clearly establishes the need for Knowledge Management as an innovation in and of its self. While Knowledge Management (KM) has been recognized as an innovation in the private sector (Hansen, et. al. 1999, Gore and Gore, 1999, Hickins, 1999), it is only now emerging in the police profession. Pendleton (2002,) in his study of knowledge management in policing has developed a model that identifies and links the initiation and implementation phases of innovation through the management of knowledge. Police knowledge management is a loosely bundled but interconnected set of management activities designed to capitalize on the intellectual assets of the police workforce (Pendleton, 2002). Knowledge management in this model is defined as a five part *purposeful organizational strategy* that is designed to:

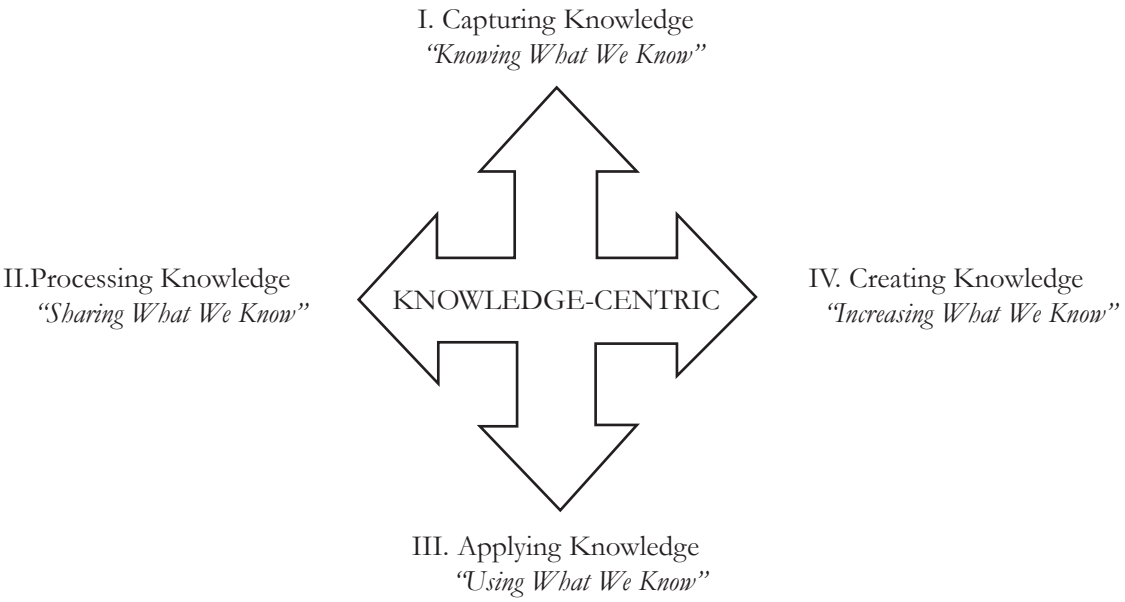
1.) ➔ Create an Innovation Environment
2.) ➔ Capture Knowledge
3.) ➔ Package-Share Knowledge
4.) ➔ Apply Knowledge
5.) ➔ Create Knowledge

Knowledge Management is not a passive activity, but is a set of organizational design features and processes that are integrally related to organizational activities. This model recognizes that police departments contain vast amounts of untapped, often specialized, knowledge and routinely create knowledge through organizational action that is vital to successfully addressing contemporary public safety challenges. *Knowledge management is all about having the ability to share that specialized knowledge when another member of the organization needs it.* Quite simply, knowledge is viewed as an asset. One of the fundamental tasks of this model is to transform tacit knowledge, obscured within or around the organization, to explicit knowledge available for use and application.

Tacit knowledge has "an important cognitive dimension. It consists of mental models, beliefs, and perspectives so ingrained we take them for granted, and, therefore, cannot easily articulate. These implicit models shape how we perceive the world around us" (Nonaka, 1999). *Tacit knowledge* has tremendous value for others in an organization because it represents expertise. When less experienced, skilled and knowledgeable employees have access to the *tacit knowledge* of experts and experienced specialists, they can perform at the level of those experts more often and more effectively (Bukowitz and Williams, 1999). *Tacit knowledge* can be shared either by being converted into explicit knowledge (e.g., a set of policies and procedures, or a set of documented facts) and documented, or through transfer as *tacit knowledge*, for example through a mentor, on the job training, or apprenticeships.

Known as an innovation cluster (Rogers, 1995), the four-part police knowledge management model provides a useful framework for understanding how knowledge can be purposefully managed to promote innovation in public safety organizations (see Figure 1 below).

Figure 1.
POLICE KNOWLEDGE MANAGEMENT MODEL



GUIDELINES FOR CREATING THE ENVIRONMENT FOR ORGANIZATIONAL INNOVATION

Organizational innovation occurs for two reasons, crisis and/or a natural interest in being innovative Rogers (1995). In a crisis situation, such as that facing the police in the 1980's, organizations *need* to be innovative at least until the problems are solved. In this case, innovation is viewed more as an outcome or product. While police departments may have adopted recent innovations because they *need* to, the relative rapidity of the adoption of recent innovations (Weisburd, 2001, Weisburd et.al. 2001) and emergence of intrinsically innovative police organizations (Pendleton, 2002) also suggest a growing natural interest in innovation. Some police departments now *want* to be innovative because of their natural interest and view innovation as an on-going process that is reflected in organizational values, leadership, and structure. In this respect, the organizational environment is specifically designed to provide an established context for innovation. In effect, the organization becomes an innovation environment.

GUIDELINE ONE: FORMALLY ADOPT AND PROMOTE AN ORGANIZATIONAL MISSION AND VALUES THAT FACILITATE KNOWLEDGE MANAGEMENT

The literature and research data clearly establish the fundamental role of organizational values that facilitate rather than impede knowledge management. By formally adopting organizational values and beliefs that support Knowledge Management, there becomes a clear "expectation to be innovative."

The" Collaboration Value"

The most important value in the mission of an innovative police department is collaboration. Collaboration is the core element in capturing, sharing, applying and creating knowledge. Collaboration leads to key partnerships within and outside the police organization that includes individuals, groups and other organizational entities. Joint efforts, access to decision making and meaningful participation and exchange are evidence of collaboration. *Collaboration leverages existing expertise, locates best practices, and eliminates redundancy.* Both internal and external collaboration transcends the limitations of technology and other unilateral approaches to knowing.

The "Openness Value"

Although police departments have traditionally been viewed as closed organizational environments, there is clear evidence that this is changing. Organizational openness is evident in the increasing access given to citizens (e.g., ride-a-longs and other avenues of participation) and to researchers from universities and other agencies. An organizational environment that is open to meaningful interaction with others facilitates collaboration. One of the most difficult barriers to accessing and sharing knowledge are the internal organizational boundaries within organizations. Often called the "silo effect", the inability of organizations to defeat the physical boundaries (separate office buildings, precinct stations etc.) and the cultural boundaries (knowledge hoarding and inter-agency competitiveness) that prevent sharing and collaboration must be overcome. Creating an organizational value of openness clearly establishes the expectation that police departments will not only be open to others, but will in-turn reach out and become involved with others. The connectivity that results from pro-active openness is the key component of awareness knowledge that is essential for organizational innovativeness.

The Knowledge Context for Police Services

One of the most important features of the recent era of police innovation has been the simple fact that all the innovations are based in knowledge gained from research. The data driven nature of policing has been established and will continue to provide a knowledge-centric approach to policing. It is important to recognize that a knowledge based approach to delivering police services is not static but is being refined to the next generation of the models that were first introduced. A "knowledge management" based police department must adopt a service delivery philosophy that is data driven. An example of such an approach is the Risk Focused Policing Model. Risk Focused Policing is defined as "data and results-driven, community oriented policing and problem solving strategy which focuses on those factors in a community which places its youth and families most at risk for criminal and other problem behaviors" (Bueerman, 2000, pp26). This approach relies on the extensive research on adolescent behavior and the application of assessment and intervention techniques that address the risk factors that underlie most youth problem behaviors. Models like this provide a "knowledge context" within which all organizational activities can be organized.

GUIDELINE TWO: PRACTICE AND PROMOTE INNOVATION LEADERSHIP THAT IS CENTERED ON KNOWLEDGE MANAGEMENT

For Knowledge Management to become a core management activity in a police department, it must be adopted and implemented as a purposeful leadership innovation. Specific leadership behaviors are required to adopt and implement knowledge management.

The Cosmopolitan Leader

Because knowledge and its management are key ingredients to innovation, it is critical that innovative police departments establish and empower leaders who are cosmopolitan in their leadership style. Specifically, this requires police leaders to become firmly oriented and affiliated with a meaningful "outside" or external network. This network is most vibrant when it is not confined to the criminal justice system but extends to other sectors in the larger social system to include the private sector. The cosmopolitan police leader is on the "front line" of innovation through attendance to key conferences, special publications, regular interaction with the research community, and other connections often requiring extensive travel and interaction. In effect, the cosmopolitan leader is positioned to develop "awareness knowledge" as a key component in the management of knowledge.

The Innovation Champion

If Knowledge Management as an innovation is to succeed within an organization, it, along with any other police innovation, requires an innovation champion. Without a Knowledge Management champion the innovation will die. A Knowledge Management champion is a charismatic individual who throws his/her weight behind the innovation to overcome resistance to become an effective organizational sponsor for adoption of the idea. The Knowledge Management Champion may or may not be the person who first encounters the innovation. The selection of a Knowledge Management Champion should be purposeful to reflect the demands of both the initiation phase (decision to adopt) and the implementation phase. It is important that police organizations recognize and empower innovation champions within the organization, as they are often the risk takers who are most willing to initiate new ideas.

The 'Authority Decision to Adopt-'Collective Design' of Implementation

The organizational innovation process is most accurately viewed as a five stage process spanning two distinct decision phases known as the initiation and implementation phases. Findings from innovation research have revealed that often the very organizational processes that facilitate the adoption of an innovation during the initiation phase, can work against efforts during the implementation phase of the innovation process. Several styles of decision-making are available to organizations for the adoption and implementation of Knowledge Management. These approaches need to be tailored to reflect both the nature of the organization and the goal to both adopt and implement Knowledge Management. While police organizations have embraced contemporary management approaches that are based upon collaboration, they are still a paramilitary system that is based upon power, status and technical expertise. Police departments are not democratic organizations. Yet, it is critical to recognize that the police Knowledge Management innovation is an *innovation cluster* comprised of many distinct activities that are loosely bundled where the boundaries are not necessarily clear cut but are interconnected. Accordingly, the decision to adopt the Knowledge Management innovation should be what is known as an authority decision made by the Chief of Police and his/her command staff. However, the implementation process and subsequent decisions should be based in collaboration and freedom to adjust and mold the Knowledge Management initiative to fit the specific needs of the organization. Known as a collective decision-making, this process should feature consensus and participation among the relevant members of the police department.

GUIDELINE THREE: RE-STRUCTURE THE POLICE DEPARTMENT TO FACILITATE KNOWLEDGE MANAGEMENT

The adoption and implementation of the Knowledge Management innovation is both determined by and subsequently can affect the structure of the police department and its processes. While police departments have adopted new innovations, they have been reluctant to alter their basic structures to implement these innovations; if the Knowledge Management innovation is effectively adopted and implemented it will be important to remain open to altering existing organizational structures and/or creating new approaches.

Research and Development as an Executive Function

One such structural change is the clear need to create research and development units within police departments that report directly to the Chief of Police. Typically, police research units are viewed as grant-making machines focused upon bringing money into the police department. While grant making is a part of a Research and Development function, in a KM approach, the primary focus is the development of knowledge. These units can be structured to include crime analysis units as well as proactive research projects and serve both a tactical, as well as a policy function.

External Re-Structuring

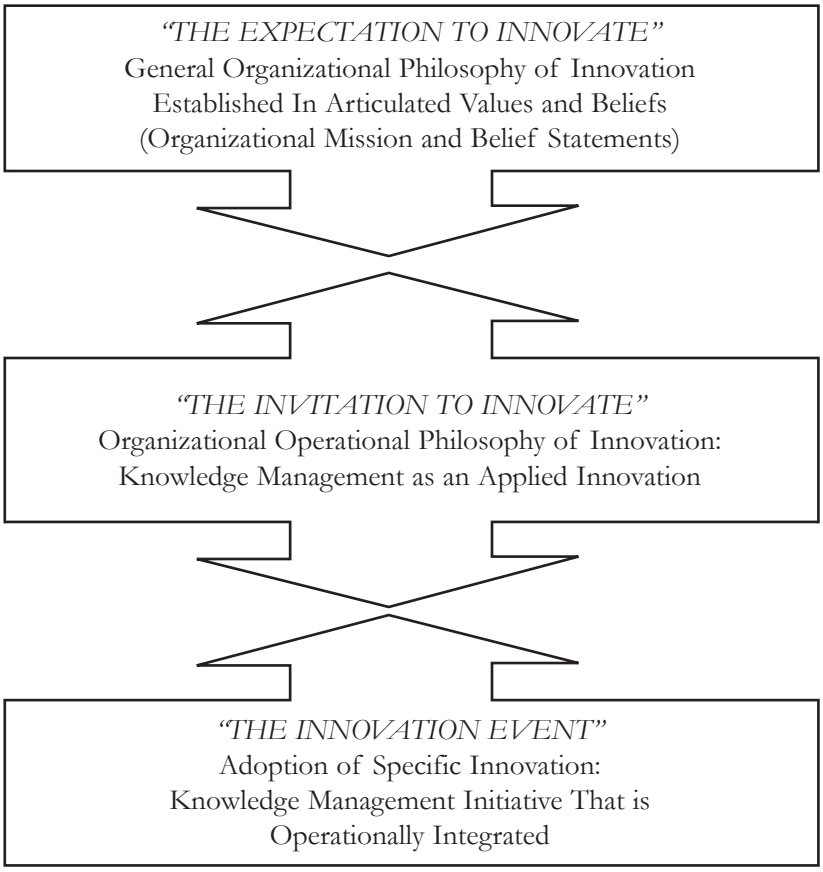
One of the most innovative police departments in the country has recently assumed responsibility for the parks, recreation and public housing functions of the city. This consolidation under the directorship of the Chief of Police was done to advance a more integrated approach to the implementation of Community Oriented Policing. In an era of scarce resources where innovation is clearly linked to both efficiency and effectiveness, bold new approaches that are consistent with the "community integration" movement can be a part of a KM restructuring strategy.

The Organizational Engineering Approach

A fundamental feature of Knowledge Management is the recognition that employees' expertise is organizational capital. Accordingly, the recruitment, retention and development of police personnel should be a strategic effort that is designed to enhance the knowledge base of the organization. Such an effort requires a knowledge profile of the police department that reflects strengths, weaknesses and gaps in the organizational knowledge profile. Based upon the knowledge profile the police department can implement an organizational engineering strategy that includes targeted hiring and targeted training for personnel to fit the needs of the organization as a whole.

As a social system, organizations provide the context within which organizational innovation occurs. This context for the Knowledge Management innovation can be viewed as a three-part system that progresses from a general to specific orientation to innovation see *Figure 2* on next page. The organizational context for innovation is fundamentally established as a general philosophy that is articulated in the written value and belief statements. A second *tier of context* is innovation leadership that scans and champions KM within the police department. Finally, Knowledge Management initiated within a purposeful structure defines the operational implementation of KM.

Figure 2
ORGANIZATIONAL CONTEXT OF INNOVATION



GUIDELINES FOR CAPTURING KNOWLEDGE: KNOWING WHAT WE KNOW

The starting point for a Knowledge Management Initiative is making knowledge that exists within and around the organization both known and available. This fundamental task is built on assessment and collaboration that transcends a knowledge continuum (Pendleton 2002) ranging from individual knowledge to organizational knowledge and finally community or social system based knowledge. Establishing a knowledge network as the focus of the "opportunistic surveillance" that is required for innovation is an important beginning of the Knowledge Management Innovation. Knowing what others know is at the heart of this first step in the Knowledge Management Model.

GUIDELINE FOUR: CONDUCT A KNOWLEDGE INVENTORY AND ESTABLISH A KNOWLEDGE REPOSITORY

The literature on Knowledge Management reveals the simple realization that organizations contain and have access to knowledge that is largely unavailable. In part, the lack of availability stemmed from the simple fact that there was little understanding of what knowledge actually exists within and around organizations. In effect, many organizations don't know what they know (O'Dell and Jackson, 1998). To address this need it is important to conduct strategic knowledge inventories that encompass the both the internal and external police department environment. This assessment should document and then link *"know who"* knowledge with *"know how"* knowledge in four key knowledge areas: professional expertise, tactics, administrative process, and political-community understanding. The goal is to transform the implicit knowledge of the police in these areas to explicit knowledge that is available.

Individual Knowledge Inventories

Much of the early efforts in KM have been focused upon what has been termed the "yellow paging" or cataloging of organizational knowledge and experiences that reside at the individual level. The purpose of this effort was to identify which individuals within the organization had what type of knowledge and to make that known and available throughout the organization. A process approach such as this, known as "Yellow Paging," provides the first rudimentary step in allowing members of an organization to know whom to contact to access knowledge on specific topics. In policing, yellow-paged knowledge can refer to specific skills or expertise and/or specific case or problem specific knowledge. Supervisors who use software solutions can conduct the knowledge assessment and other technology based programs to establish searchable *expertise data banks*.

Creating Knowledge Capacity within the Police Department

It is well known that police departments have more data and knowledge stored than is ever harnessed for the delivery of police service. The underutilization of data is common in the policing profession and in many departments has rendered existing data banks as dustbins of data far removed from daily problem solving. The crime analysis unit of the police department can reverse this professional phenomenon by making both the unit and existing data banks accessible. One innovative application of police department data centers on knowing whom in the department has had contact with specific individuals and/or places of interest in the delivery of police services. All reports and calls for service are stored in data banks as "event fields" that correspond to numerous characteristics of the case or event. This standard data acquisition and storage protocol can be harnessed by officers who want to know who in their department knows the people related to the case. In some instances, investigators can actually identify in chronological sequence which of their colleagues has had contact with an individual of interest and then convene this group of officers for a discussion concerning the case. The searching of the department data banks and creation of knowledge teams about cases is but one of several applications of the ability to identify and link police personnel to a wide range of case characteristics.

Technology for e-mail mapping known as Knowledge Mail, is now available to allow the use of keywords or phrases in employee e-mail to track expertise. When the user seeks colleagues who are knowledgeable about a topic, the system connects the employees by e-mail creating a knowledge community within the organization. Similar technology known as Process Book is available to establish a knowledge bank of organizational processes. This system can be applied to both physical process, such as plant systems, or administrative activities such as budget or personnel processes. This software allows any employee to contribute their experiences, work processes, job procedures, task instructions for specific projects, and allow on-line access to background information. In effect, this system can document all relevant organizational processes and make them available throughout the organization.

Creating Knowledge Capacity from Outside the Police Department

One of the most important changes in the police culture during the recent period of innovation has been an assertive willingness to expand the police social system to include the surrounding community and organizational environments. Implicit in this expanded police community is the potential availability of a vast array of data and knowledge within various sectors of this external environment. Increasingly, it is possible and important to gain access to these knowledge repositories. The COMPASS project, recently funded by the National Institute of Justice is an example of access data from outside a police department. The very first phase of this project focused on identifying a diverse number of community agencies and organizations and forming a knowledge consortium that include the sharing of each others data to establish a comprehensive data infrastructure. This data warehouse includes data collected from a variety of sources (criminal justice, demographic, social and health, schools, hospitals, physical infrastructure, business data, etc.). In effect, the first step was creating a data center that held vast amounts of data from diverse settings that, when taken together, provides a comprehensive understanding of all the possible factors related to crime and disorder.

Appropriating Knowlede Banks

One of the more important developments in policing over the last 20 years has been the growing participation of the police profession in university-based research. During this period an extensive knowledge base has developed and is currently available in abstract form through a CD ROM subscription service that is also linked to a standard quarterly hard copy journal. This and other electronic knowledge banks are now available for search and review. Literature searches and reviews of this vast reservoir of knowledge about policing are essential elements in capturing what we know.

GUIDELINE FIVE: UNDERSTAND, PROMOTE AND ACCOMMODATE THE PROTOCOLS FOR ACCESSING DATA AND KNOWLEDGE

While knowing what we know is important, getting what we know we know is the ultimate objective of the first phase in the Knowledge Management innovation. It is critical to understand that gaining access to data and knowledge is often constrained by legal, cultural and practical barriers. Knowledge ownership, privacy protections, legal limitations, and the cost of retrieval and delivery must be accommodated in both formal and informal agreements to capture knowledge.

Care the Most About Privacy and other Legal Constraints

In an age of computer automation and technological advance, the ability to access knowledge has far out distanced protocols to protect privacy of individual. While criminal justice data is often constrained by law, even the best-intentioned user can easily be in possession of data that is in violation of the law. Legal research and the use of an Institutional Review Board type process to address both privacy protocols and address legal issues is an established process for guaranteeing appropriate possession and use of knowledge. A genuine interest in this important social issue should begin with the police department.

Accommodate Cultural Characteristices

Yet another reason that Knowledge Management efforts to capture police knowledge may be slowly adopted is that police culture is based in face-to-face situational interactions. Hansen and his colleagues (1999) identified two strategies for KM that are linked to the nature of the adopting organization. One, known as the codification strategy relies on documenting and storing knowledge for reuse by others. The other strategy is tied to person to person sharing and known as the personalization strategy. The long standing history of passing along the police culture via word of mouth and situational story telling when combined with the police aversion to 'paper work' suggests that a codification approach would not be quickly adopted in the police profession. Such a view is consistent with the data from this study where there was little enthusiasm for police problem solving "beat books" and other programs requiring the documentation of problem solving outcomes and approaches as a KM effort (Pendleton, 2002).

Quid Pro Quo

It is important to realize that the process of a KM inventory and accessing data demands resources and has associated costs. Both individuals and organizations may be reluctant or limited in their willingness to provide data and knowledge without either compensation, or a return on their effort. Ultimately, the true value of KM is in its application. It is important that individual, organizational and community participants understand how they will be able to use Knowledge Management to further their interests. Often, the giving of knowledge is contingent on the receiving of knowledge.

Guidelines for Packaging Knowledge: Sharing What We Know

Obstacles to effective knowledge management are common in closed organizational cultures where information 'hoarding' and 'command and control' management methods are practiced (Botkin, 1999). While police departments are increasingly opening up to new knowledge and the sharing of information, this represents a cultural change that is only emerging. For KM to be effective it is important to package knowledge in meaningful ways that naturally promote sharing. In this respect, sharing knowledge requires both Knowledge Management structure and process to facilitate application and access.

GUIDELINE SIX: STRUCTURE POLICE KNOWLEDGE INTO POLICY, ORGANIZATIONAL AND TACTICAL PACKAGES TO PROMOTE MEANING AND USE

Police knowledge can be usefully categorized into Policy Knowledge, Organizational Knowledge and Tactical Knowledge and police KM needs to address these various types. Police KM systems need to be designed to process information and transform it into knowledge packages in preparation for application to selected problems. The packaging of these data will logically lead to an increased interest in sharing of this knowledge.

The Policy Knowledge Commons

It is both possible and important to package data within a broad community based program or process such as COMPASS, which is led by a multi agency and community based leadership team. Data from across the institutional spectrum can be placed in a data warehouse that is accessible in a variety of formats blending inter and intra net access with web-based software using G.I.S. mapping capability and analysis. The data can be pre-packed by blending key variables in a map format creating and promoting knowledge of those factors related to crime and disorder. The packaging of this knowledge can easily inform policy debates, problem selection and implementation of multi-modal solutions. In effect, this approach "democratizes knowledge" allowing access and linkages with the larger community and policy makers. While police departments are currently placing data about crime on websites, only through more comprehensive KM projects is that data being combined with a wide range of other data to create knowledge about the causes and potential solutions to crime.

The Organizational Knowledge Package

Crime and disorder data can be usefully packaged to inform organizational policy issues. The most well known packaging of knowledge is the COMSTAT program that uses crime mapping as a means to understand crime trends and was specifically designed to hold police leaders accountable for addressing these trends. The packaging of organizational data, however, is in its infancy. Other more specific knowledge packaging is possible to focus on use of force, officer safety, budget and fiscal issues, training and education etc.

The Tactical Knowledge Package

While crime mapping has been adopted by most police organizations as a means to display and understand crime and disorder, there are much more that can be done to package crime and disorder data to inform tactical strategy. KM for detectives should start with a specific understanding of the crime dynamic of the specific unit. Exhaustive literature reviews should be conducted to create crime types/profiles and associated dynamics as an organizing framework within which all situational case knowledge is understood. All unit data should be arranged to create a knowledge base what is available to analysis using place (mapping) and crime dynamic analysis (movement and interaction). Database downloads along with department wide "yellow page" scanning can create knowledge teams that are best suited for addressing specific cases (see Figure 3). Patrol KM should focus on packaging data for use in real time mapping and crime dynamic analysis in preparation for each daily patrol briefing.

GUIDELINE SEVEN: CREATE ROUTINE KNOWLEDGE SHARING PROCESS NOT EVENTS

An essential feature of Knowledge Management is the sharing of knowledge with others as the means to desired outcomes and the successful application of all aspects of KM. Recent research clearly shows that when Knowledge Management is treated primarily as an "event" it acts to defeat establishing knowledge sharing as a normal organizational routine. Knowledge sharing is most effective when incorporated as ongoing routines that have specific processes designed to facilitate sharing.

Figure 3.

A POLICE UNIT BASED KNOWLEDGE MANAGEMENT PROBLEM SOLVING MODEL

KNOWLEDGE MANAGEMENT PROCESS	DEPARTMENT UNITS Auto theft, Burglary, Assault, Sex Crimes, Domestic Violence, Narcotics, Homicide, etc.
1.) LITERATURE REVIEW	Establish an understanding of knowledge within existing research and professional literature. Informs database and analysis process. Each unit in the department builds starts their crime analysis model based on literature.
2.) DATABASE DOWNLOADS FROM RMS AND DEPARTMENT "YELLOW PAGING"	Establish a crime specific data bank download from RMS and other department data. This data will be specific to crime. Informed by literature and knowledge.
3.STEPWISE GIS AND OTHER CRIME-PLACE BASED ANALYSIS	Establish a stepwise crime analysis process that includes all the crime dynamic variables and is plotted in a GIS format. Analysis used to plot past, current and projected crime activities. May purchase or develop analytical software.
4.) INTEGRATED INTERVENTION PLAN	Craft an intervention strategy that has both long term and tactical elements. Plan blends a wide range of interventions from policy to tactical responses.

The Knowledge Management Vehicle

A fundamental feature of police Knowledge Management process is the creation of knowledge management process within programs or projects. Several examples, such as COMPASS, COMSTAT, and After Action Reviews, have specific process that defines the program, leading to specific application. In the case of COMPASS, there are processes for all of the components of the Knowledge Management model, while others, like After Action Reviews focus on only one part of the KM model. For sharing to occur the process should include multi-discipline participants and specifically require sharing and discussion of knowledge. Professional facilitation of the specific knowledge sharing process is important.

The Knowledge Management Place

Recent research suggests that Knowledge Management sharing is not just a process, but is also a place. The police department library, the Research, Grants & Corporate Support Unit, and the Crime Analysis Unit (CAU) are examples of where knowledge "happens". The observed linkage of a department library with the conference room is an interesting example of both the static feel of a repository of documented organizational knowledge, but also a dynamic quality where decisions are made by putting knowledge into action. In the case of the CAU, its central function, combined with its potential location in pathways, facilitates the "place" nature of knowledge. Unlike the conference room, where one must "belong" in meetings, CAU can be a completely open place where anyone can go during all hours of operation.

GUIDELINES FOR APPLYING KNOWLEDGE: USING WHAT WE KNOW

The ultimate purpose of Knowledge Management is not simply to make knowledge available, but to apply it to reach organizational objectives (Williams, 2001). The application of knowledge can be focused on both external public safety problems, as well as internal organizational issues. Finally, police KM can be used to both select potential applications but also to select subsequent interventions or course of action.

GUIDELINE EIGHT: USE KNOWLEDGE MANAGEMENT PACKAGES AND PROCESSES TO SELECT APPLICATIONS

The selection of applications should follow Knowledge Management process designed to identify and prioritize crime and disorder problems and organizational issues.

Community Process

Many knowledge management processes include a role for community participation and input. Leadership teams that guide a COMPASS selection process include community members. Other Community Policing forums provide specific processes that engage the community in identifying specific problems. Other key government process that inform political decision-making and policy development are predominate ways to select KM applications.

Organizational Process

While police departments rarely engage in long range planning, those that do engage in a process to establish long-term goals and objectives. KM process can both inform and follow from these long-range planning processes.

Crime Analysis Process

Most police departments utilize sophisticated crime analysis methods such as hotspot mapping to identify and select key problems for KM application.

GUIDELINE NINE: AVOID USING KNOWLEDGE MANAGEMENT TO POLICE THE POLICE

Throughout the Knowledge Management literature it is clear that if KM is used to police employees, then adoption will be unlikely (Lim, et.al., 1999). There is a long tradition in the police culture, to resist efforts to monitor police behavior. This cultural tradition would suggest a less than an enthusiastic approach to KM strategies that propose to monitor, even map inter-officer communication (Skolnick and Fyfe, 1993). It is not surprising that data on accountability efforts like COMSTAT show limited success, suggesting that other KM efforts like e-mail mapping would need to be carefully crafted. Failure to address this key issue is likely to result in the failure of any KM effort.

GUIDELINE TEN: USE KNOWLEDGE MANAGEMENT TO SELECT AND DESIGN INTERVENTIONS AND SOLUTIONS

There is long standing evidence that Knowledge Management techniques are used in routine police activities to address crime and disorder problems. More recently, KM processes have been utilized to address police organizational issues. The use of comprehensive KM processes will allow for multi-modal interventions that will not only inform reactive strategies, but will facilitate preventive, more proactive approaches.

Crime and Disorder Applications

The more visible and growing use of Knowledge Management techniques are in the area of *targeted* crimes. The use of crime mapping has evolved rapidly and is now used in front line police operations (crime and hotspot analysis) and investigations by officers (Groff and LaVigne, 1998). There is specific case study data that demonstrates the successful use of this Knowledge Management technique to address a wide range of issues from auto theft, burglary, rape, homicide, traffic accidents, and gang activity (LaVigne and Wartell, 1998; LaVigne and Wartell, 2000). As efforts to create mapping models that predict the location of crime (Weisburd and McEwen, 1997) become viable, it is likely that more departments will integrate this knowledge into the routine briefing and deployment strategies. It will be critical to make these applications time sensitive (real time data), effective (place officers at the predicted location to greet the offender) and process efficient (analytical up-front work that reflects the crime dynamic).

Administrative and Organizational Applications

Less apparent, but emerging is the application of Knowledge Management in the administration and operation of the police organization. Applications of KM like COMSTAT have met with limited success, primarily because of a focus on "policing the police" and the police "event" process. Many other applications are possible ranging from Yellow paging for training purposes, to resource allocation decisions, to implementation of specific policing models, such as the Risk Focused Policing approach (Pendleton and Bueermann, 2002).

Guidelines for Creating Knowledge: Increasing What We Know

The creation of knowledge is clearly identified as a 'core' feature of Knowledge Management. The Knowledge Management challenge encompasses both how to learn from organizational experience and how to create knowledge through original research and development activities.

GUIDELINE ELEVEN: ESTABLISH SPECIFIC PROGRAMS AND PROTOCOLS FOR LEARNING FROM ORGANIZATIONAL EXPERIENCE

There has been a long-standing police tradition of valuing experience. This tradition has been focused upon individuals and the experience they gain throughout their careers. More recently, there has been a recognition that organizations can also learn from experience if they have a commitment to continuous improvement. Learning from experience can include both the experiences from within the organization and experiences that others outside the organization have also encountered.

After Action Reviews

After Action Reviews or Critical Incident Reviews occur after police events or situations. These events can be large in nature or when officers are involved in incidents of a serious nature. A review process is created to include a synopsis of the event to include descriptive information (time, location etc.). Key questions guide the process such as, "what did we do right?" "What could we do better next time?" How do we share this learning? One of the constraints on this process is the legal liability, and related personnel actions that often accompany reviews of difficult actions. These constraints often impede a complete and full understanding of an event (Pendleton, 2002) because of legal and personnel exposure. It is important to develop protocols to neutralize factors that impede full and complete participation and disclosure.

Lessons Learned

A "Lessons Learned" program is designed to use after incident reports to create and share knowledge from police related events. The reporting system is web based and is accessible by anyone. Those wishing to report on an event, fill out a web-based form that includes identifying/contact information and then a response to the following questions:

- What was the most notable success at the incident that others may learn from?
- What were some of the most difficult challenges faced and how were they overcome?
- What changes, additions or deletions are recommended to various training curriculums?
- What issues were not resolved to your satisfaction and need further review? Based on what was learned what is your recommendation for resolution?

Place Based After Action Review

Place Based After Action Review is a version of "after action" learning that focuses on the location or place of critical events. This learning exercise requires travel to the actual locations of critical incidents to learn from the events in their location. This learning technique features not simply the event, but the geographic location and dynamics of the event. This case study approach is highly structured with numerous learning objectives that feature the interaction between the geography and the case dynamics (Robertson, 1987).

Integrated after Action Review

This technique uses a stepwise process to identify and map chronic and critical problems such as homicides to locate the 'target place' within the city. Then an after action review is conducted of all the recent homicides within the target place. All the key participants, both within the community and within the police department, are invited to meetings where a facilitated process is used to analyze the recent homicide cases in the target area. The process is guided by the following questions:

1.) Do you know anything about this case?
2.) What do you know about the victim?
3.) What do you know about associates of the victim?
4.) Was the victim part of a group of active offenders?
5.) What do you know about the suspect(s) /offenders?
6.) What do you know about the associates of suspects/offenders?
7.) What do you know about the relationship between the victim and suspect?
8.) What do you know about the location of the event?
9.) What do you know about the motive in this case?
10.) Was the incident drug related? How?
11.) What do you think was behind the event (final summary)?

Following the after action review session, a place based analysis including site visits are conducted to understand fully the nature of the location of each of the homicides. This place analysis includes the location of the homicide and visits to the homes of relatives and other key participants within the geographic space surrounding the location.

Based upon this process the crime dynamic of homicide in this area is developed that included a focus on motive, relational dynamics and the characteristic of the places in which these homicides occurred. Based upon this analysis, interventions are crafted to address three distinct types of homicides that occur in the target area.

The Innovation Exchange

This is a collaborative program involving multiple law enforcement agencies. The purpose of the program is to allow employees from each of the participating departments to conduct a site visit to any department for 5-6 hours to observe how other departments operate and/or provide law enforcement services in areas that have been problematic in the employees department. The intent is to maintain "a competitive edge" by discovering how "our colleagues" are doing things better than "we are". Employees are specifically instructed to abandon the mind set that "I know we do this better than they do" but to focus how "they do things better than we do". The program material provides a guide of potential areas for examination to help employees focus on specific areas during the observation.

GUIDELINE TWELVE: ESTABLISH A SPECIFIC RESEARCH AND DEVELOPMENT PROGRAM

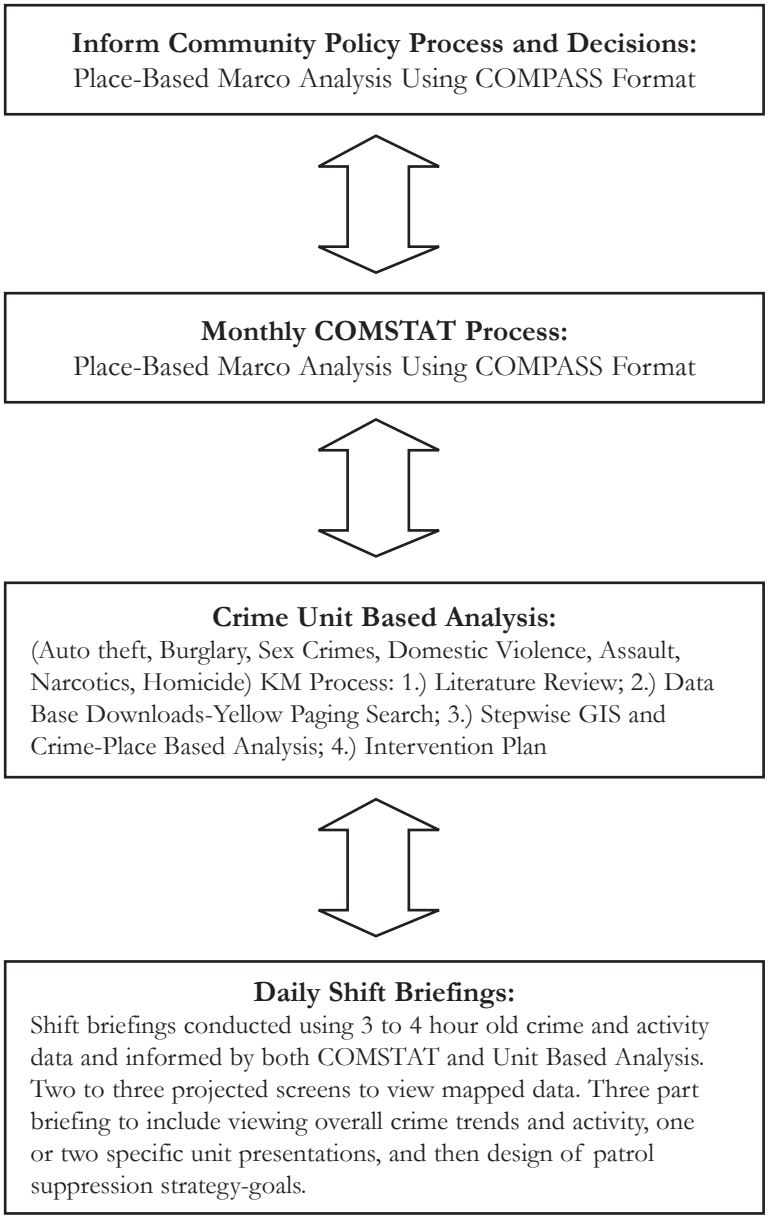
While initially the *subjects of research*, the police have evolved into research partners sharing the responsibility for selecting topics, managing the process, and disseminating the results. The next logical step in the creation of police knowledge is for the police to take the lead role in the creation of knowledge. The typical organizational model for this role is found in classic research and development units or departments. Police research must go beyond simply providing a statistical description of the department to actually employing trained researchers to both conduct research and liaison with Universities to do the same.

CONCLUSION

There is little evidence that the police profession is aware of Knowledge Management as an overall management strategy, but is involved in KM activities in an incremental way. Knowledge Management, as a purposeful organizational strategy, is more than an innovation in itself, but is a fundamental part of the innovation process that is essential to sustaining an organizational culture that is based in innovation. If the police profession is to sustain its position on the "cutting edge" of innovation, there is a need to integrate the various KM techniques into an interrelated system (see *Figure 4*). Such a system would link very specific crime type analysis with daily patrol strategies, monthly COMSTAT process and the larger COMPASS process that extends beyond the boundaries of the police department.

While police departments may have adopted recent innovations because they need to, the relative rapidity of the adoption of recent innovations (Weisburd, 2001, Weisburd, et.al. 2001) and the emergence of intrinsically innovative police departments (Pendleton, 2002) suggest a growing natural interest in innovation. When police departments *want* to be innovative, they will re-craft their organizational structure, policy and practice. In effect, innovation will become an intrinsic value.

Figure 4.
A KNOWLEDGE MANAGEMENT INTEGRATED INTERVENTION MODEL



REFERENCES

Anselin, L., Cohen, J., Cook, D., Gorr, W., and Tita, G. (2000). In David Duffee, David McDowall, Brian Ostrom, Robert Crutchfield, Stephen Mastrofski, and Lorraine Green Mazerolle, eds. *Measurement and Analysis of Crime and Justice*, Washington D.C.: National Institute of Justice.

Atkinson, P. and Hamersley, M. (1994) 'Ethnography and participant observation. In *Handbook of Qualitative Research*, eds. Norman Denzin and Yvonna Lincoln, pp 248-261. Thousand Oaks, CA: Sage.

Botkin, J. (1999) Smart Business: *How Knowledge Communities Can Revolutionize Your Company*. New York: The Free Press.

Braga, A. (2001). "The Effects of Hot Spots Policing on Crime", *ANNALS* 578: 104-125.

Bueermann, J. (2000) 'Neighborhood Safety with Risk Focused Policing', *The Neighborhood Works Journal*. 18 (2): 25-31.

Bukowitz, Wendi R. and Ruth Williams. (1999) The Knowledge Management Fieldbook. London: Financial Times/Prentice Hall

Geller, W. and Swanger, G. (1995) *Managing Innovation In Policing: The Untapped Potential of the Middle Manager*, Washington, D.C.: Police Executive Research Forum.

Goldstein, H. (1990). *Problem Oriented Policing*. New York: McGraw-Hill Publishing Company.

Gore, C. and Gore, E. (1999) 'Knowledge Management: the way forward' *Total Quality Management* July, 554-560.

Groff, E. and LaVigne, N. (1998) 'The Use of Geographic Information Systems (G.I.S.) For State and Local Crime Analysis' Presented at the Conference of European Statisticians, Ottowa, Canada, October, 5-7, 1998.

Hansen, M., Nohria, N., Tierney, T. (1999) 'What's Your Strategy For Managing Knowledge? *Harvard Business Review* 77 (2): 106-112.

Hickins, M. (1999) 'Xerox Shares Its KNOWLEDGE', *Management Review*, September: 40-45.

LaVigne, N. and Wartell, J. (1998) *Crime Mapping Case Studies: Successes In The Field*, Washington D.C.: Police Executive Research Forum.

LaVigne, N. and Wartell, J. (2000) *Crime Mapping Case Studies: Successes In The Field Volumn 2*, Washington D.C.: Police Executive Research Forum.

Lim, K.; Ahmed, P. and Zairi, M. (1999) 'Managing for Quality Through Knowledge Management',*Total Quality Management*. July: 615-617.

Malcolm, A. (1989) 'Cities try out new approach to police work', *New York Times*, March 29.

Nonaka, Ikujiro. (1999) "The Knowledge Creating Company." Harvard Business Review on Knowledge Management, Harvard Business School Press.

O'Dell, C. and Jackson, G. (1998) *If Only We Knew What We Know: The Transfer of Internal Knowledge and Best Practice.* New York: The Free Press.

Pendleton, M. (1999) "Understanding Organizational Change: The Achilles Heel of the Contemporary Executive". Presented at an Executive Leadership Seminar for the Washington State Criminal Justice Training Commission, April 22nd, 1999

Pendleton, M (2001). 'Charting a Course: Innovation Amidst the Perfect Storm'. Presented at the Annual Conference on Criminal Justice Research and Evaluation: Enhancing Police and Practice. Washington D.C., July 22-25, 2001.

Pendleton, M. (2002) 'On The Threshold Of An Innovation: Police And The Management Of Knowledge'.

Pendleton, M. and Bueermann. (2003). "Anatomy of A Police Innovator: A Case Study of Knowledge Management In Policing.

Rogers, E. (1993) 'Diffusion and the Re-invention of Project D.A.R.E.', in Thomas E. Backer and Everett M. Rogers (eds.), *Organizational Aspects of Health Communication Campaigns: What Works?* Newbury Park, CA, Sage, pp. 139-162.

Rogers, E. (1995) *Diffusion of Innovations*, 4th edn. New York: The Free Press.

Sherman, L., Gottfredson, D., MacKenzie, D., Eck, J., Reuter, P., and Bushway, S. (1998). "Preventing Crime: What Works, What Doesn't, What's Promising", *National Institute of Justice Research in Brief*. July, 1998.

Skolnick, J. and Fyfe, J. (1993) *Above The Law: Police and the Excessive Use of Force*. New York: The Free Press.

Weisburd, D. (2001) 'Translating Research Into Practice: Reflections on the Diffusion of Crime Mapping Innovation'. Presented at the Fifth Annual International Crime Mapping Research Conference. National Institute of Justice.

Weisburd, D., Mastrofski, S., McNally, A., Greenspan, R.,(2001) *Compstat and Organizational Change: Findings from a National Survey*. Prepared for the U.S. Department of Justice, National Institute of Justice. Police Foundation: Washington D.C.

Williams, T. (2001). 'Knowledge Management Initiatives Gain Foothold in Government', *Post Newsweek* , 15, #23.

Wilson, J Q., and Kelling, G. 'Making neighborhoods safe". *The Atlantic Monthly*, 134: 46-52.

APPENDIX

UNDERSTANDING POLICE KNOWLEDGE MANAGEMENT: A METHODOLOGICAL NOTE ON THE OUTCOMES OF A POLICE RESEARCH JOURNEY

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When the research on police knowledge management (KM) was first proposed, it was conceived as a first step in the ultimate design of a police "Problem Solving Knowledge Management Model" (Chávez, 2001). It was clearly recognized that while knowledge and its management is at the core of contemporary policing, it is the least understood and most neglected aspect of the Problem Oriented approach to policing (Pendleton, 2002). Although this research effort was always envisioned as an exploratory effort into a neglected area, it was assumed that KM was in fact, occurring in the police profession, and that it was an information "prioritization" process. It was further assumed that the practice of KM in policing would yield both a roster of "best practices" and specific cases or departments that had implemented KM as a purposeful organizational strategy. As is common with a new research area, these initial assumptions were not entirely accurate. What emerged from this effort was a different picture with different outcomes. What was initially envisioned as a "first step" became a research journey that opened the way to discovering KM in policing as an emerging innovation. This is a brief research note on the research process and the modifications that occurred along the way.

THE RESEARCH JOURNEY

The strategy that guided collection and utilization of data was analytical induction (Glasser and Strauss, 1980), in which a researcher, upon entering the research data field, builds and revises a conception or model as empirical evidence is confronted (Strauss and Corbin, 1990). This approach features qualitative methods that are of particular value when researching issues that are emerging and simply cannot be captured with a quantitative approach, such as the issue under study (Atkinson and Hammersley, 1994; Pendleton, 1997). In this regard, the Police Knowledge Management Model (Pendleton, 2002) was the outcome of a "data journey" guided by the literature on Knowledge Management and Diffusion of Innovation. A review of both general knowledge management and police knowledge management literature was treated as qualitative data. While phone survey data was collected, only narrative findings were utilized. Subsequent key informant interviews and discussions were also conducted as part of the data collection effort. Initial data was linked to subsequent data until no new data was confronted and data stability was realized. In effect, the data led this journey and determined the outcomes. The effect was a modification of the initial set of assumptions and the corresponding "deliverables" initially envisioned.

POLICE AS LATE ADOPTERS

There was little evidence, that the police profession is aware of Knowledge Management as an overall management strategy. This lack of awareness is in stark contrast to organizations in both the private sector and other areas in government who have been using Knowledge Management (KM) as a specific innovation since the early 1990's. In this respect, the police profession might be termed a 'late adopter' using Rogers (1995) categorization of types of adopters. In all cases, police participants expressed a complete lack of awareness of Knowledge Management and its meaning. There were no new or innovative means for acquiring information on crime and disorder problems that extend beyond the classic police information systems. In this respect, policing remains primarily a reactive information management system. When KM was more fully explained, participants could quickly identify efforts within their respective agencies and or areas that would "qualify" as knowledge management. This response is similar to the initial response when Community Oriented Policing and Problem Oriented Policing were first introduced, in that, many participants would indicate, "we have been doing that for years".

It would be wrong to suggest however that there are no 'innovators or early adopters' of the KM strategy. While few police participants were Knowledge-centric in the internal management of their police organization, the Redlands Police Department has distinguished itself as a Knowledge Management innovator. Accordingly, it was decided to forgo a compilation of case studies on police knowledge management and focus instead, on the one case where Knowledge Management as a purposeful innovation (Pendleton and Chávez 2002) had been adopted (Pendleton and Bueermann, 2002).

POLICE KNOWLEDGE MANAGEMENT AS AN INNOVATION CLUSTER

Without question, one of the most exciting and unexpected outcomes of this research was the development of a Police Knowledge Management Model. What was thought to be a "first step" toward a model actually produced the model. Ironically, this model emerged from the disappointment of discovering little evidence that the police profession is aware of Knowledge Management as an organizational innovation. Although Knowledge Management activities were encountered, and participants could agree that Knowledge Management, in some form was present in the police world, interim analysis suggested a mixed and varied definition of these activities.

To facilitate initial data organization and analysis the Diffusion of Innovations model was applied to the data. Rogers (1995), in his study of the attributes of innovations, notes that innovations are often not viewed in a singular way but may be perceived as an interrelated bundle of new ideas. The elements that comprise an innovation may be tightly or loosely bundled based on the degree of interrelatedness between elements (Koontz, 1976). The findings from this research suggest that together police Knowledge Management might be usefully viewed as an innovation cluster that is loosely bundled where the boundaries are not necessarily clear cut and distinct, but when taken together form an interconnected Knowledge Management Model. The Diffusion of Innovations approach notes that innovations follow a path that ultimately must move beyond individual based adoption but become established within the organizational setting and ultimately the social or institutional system (Rogers, 1995). The classification of innovations into individual, organizational and institutional categories, when applied to the study of KM provides a loose organizing framework for how tacit knowledge becomes explicit. Subsequent pattern analysis of the data (Strauss and Corbin, 1990) using these loosely defined categories, revealed four Knowledge Management clusters, that when linked together form a distinct and potentially powerful model (see *Figure 1*).

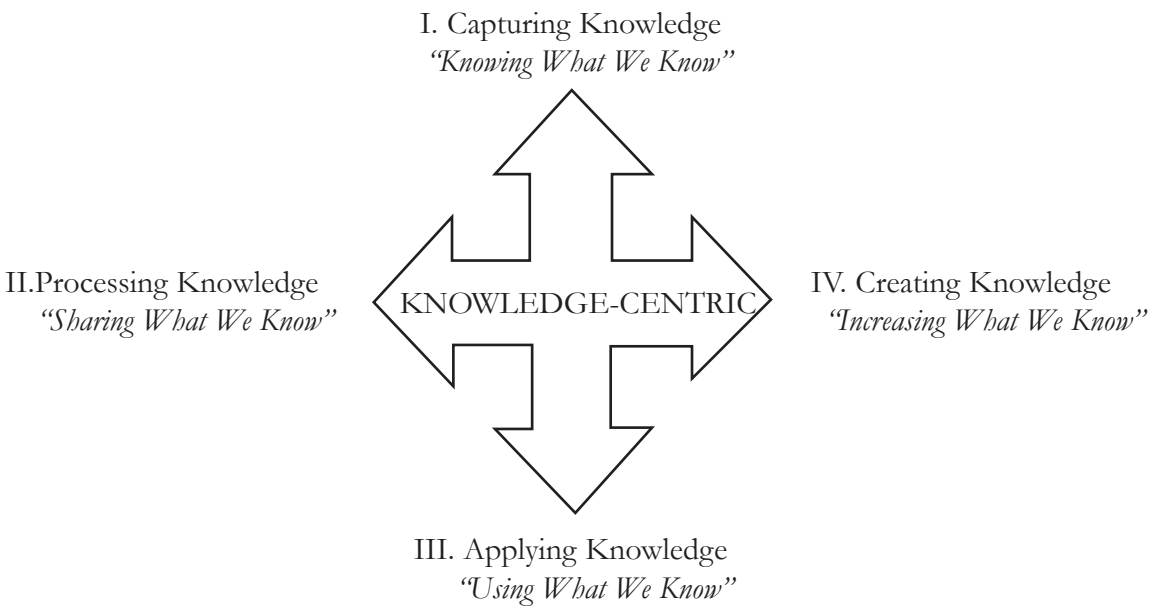
What was initially conceived as a "prioritization process" of information, had emerged as a complex set of inter-related organizational activities that form a purposeful strategy to manage knowledge (Pendleton and Bueermann, 2002; Pendleton and Chávez, 2002). Accordingly, it was decided to use case data to support a much broader set of activities that define Police Knowledge Management rather that simply focus on information prioritization, which is a very small part of the model (Pendleton, 2002).

TOWARD POLICE INNOVATION: CONCLUDING COMMENTS

By definition, pilot or exploratory research is an exploration of the unknown. Implicit in that journey is the need for adjustment and, in particular, alertness for opportunity. The police profession is engaged in knowledge management activities as dispersed organizational behaviors designed to accomplish incremental outcomes. The discovery of the Police Knowledge Management Model provides, for the first time, a purposeful management strategy for linking these activities to leverage larger and more strategic outcomes.

The question remains, how to implement the model. One outcome of this project has been a set of guidelines that address each of the four components of the KM model (Pendleton and Chávez, 2002). Unfortunately, there is little experience to date, with the application of the KM innovation in policing. In part, these guidelines are the product of lessons learned from the case study of the one and only in-depth application of KM as a purposeful strategy. However, these guidelines are primarily the outcome of what has worked in the private sector and other government agencies as discovered during an exhaustive literature review and case follow-ups (Pendleton, 2002). While some have suggested that the police are on the cutting edge of innovation in criminal justice (Weisburd, 2002), it is clear that, as a profession, "ground can be gained" when compared to other institutional sectors. Like new research where adaptation is important, it seems clear that greater efforts to become more innovative are necessary in the police profession. The adoption of a purposeful knowledge management strategy that spans the police KM model is clearly an important means to that end.

Figure 1.
POLICE KNOWLEDGE MANAGEMENT MODEL



REFERENCES

Atkinson, P. and Hamersley, M. (1994) 'Ethnography and participant observation. In *Handbook of Qualitative Research*, eds. Norman Denzin and Yvonna Lincoln, pp 248-261. Thousand Oaks, CA: Sage.

Chávez, D. (2001) "The Role of Knowledge Management in Police Problem Solving." *Consultant Services Contract*, City of Seattle

Glasser, B. and A. Strauss. (1980) *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York: Aldine.

Koontz, V. (1976) *Determinants of Individuals' Levels of Knowledge, Attitudes Towards, and Decisions Regarding a Health Innovation in Maine*, Ph.D. Thesis, Ann Arbor, University of Michigan. PS (E).

Pendleton, M. (1997) "Looking the Other Way: The Institutional Accommodation of Tree Theft" *Qualitative Sociology* . Vol. 20, (3), 325-340

Pendleton, M. (2002) "On The Threshold Of An Innovation: Police And The Management of Knowledge".

Pendleton, M. and Bueermann, J. (2002) "Anatomy of A Police Innovator: A Case Study of Knowledge Management In Policing.

Pendleton, M. and Chavez, D. (2002) "Creating An Innovation-Centric Police Department: Guidelines for Knowledge Management in Policing.

Rogers, E. (1995) *Diffusion of Innovations*, 4th edn. New York: The Free Press.

Strauss, A. and Corbin, J. (1990) *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park, CA: Sage.

Weisburd, D. (2001) 'Translating Research Into Practice: Reflections on the Diffusion of Crime Mapping Innovation'. Presented at the Fifth Annual International Crime Mapping Research Conference, National Institute of Justice.

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