Using the Internet at Work:

Police Officers Information Seeking Behavior.

By

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In

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We accept this thesis as conforming

to the required standard

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CHAPTER ONE - STUDY BACKGROUND

Research Purpose

The purpose of this research is to examine information seeking behavior of police officers using the Internet in the workplace. The intention of this research is to identify levels of comfort for police officers when they are using the Internet, identify their awareness of online search techniques, and to identify any impact these levels of comfort may have on training strategies or knowledge management initiatives.

This research uses existing library and information sciences research on information seeking behavior, as well as existing research on information literacy in the workplace.

Terminology, Methodology, and Citation Issues

Because the research methodology depended heavily upon electronic versions and electronic sources of information, some American Psychological Association (APA) rules regarding the preparation of this thesis need to be explained. As well, the literature uses a number of terms, some of which have overlapping meanings, e.g. information ecology, information management, information technology, information literacy, information literacy in the workplace, knowledge management and therefore those are also defined.

Electronic Sources and APA Format require some explanation in order to understand how citations and references have been used in this thesis. The thesis research is based on the premise that electronic and publicly accessible online resources can readily contribute to academic research about law enforcement information seeking behaviors (see Chapter 3 and Appendix D). Because of this strategy, citations and references found within this document may use symbols that some readers will not be familiar with. These symbols appear in the American Psychological Association (APA) Publication Manual 5th edition.

The APA manual provides referencing and citation guidance for electronic sources such as electronic data bases (American Psychological Association, 2001, p. 15), electronic mailing lists (p. 276), electronic sources (p. 271), Internet sources (p. 268-271) and newsgroup messages (p. 276).

Examples of these symbols and formats are found in Table 1.

TABLE 1

APA Format for Electronic Versions of Documents.

§ - section	Refers to a section of the report or document that is clearly identified
¶- Paragraph	Refers to the paragraph where the quote is found
p. 1-24 or p. 3-12 or p. 1 of 56	Refers to the page number of a document that has been printed from a website (this is used only when clear pagination is not available).
[Electronic version]	Tells the reader that the document is an electronic version.
EBSCOHOST - "name of database"	Tells the reader which vendor provided access to a specific database.

References used in this research conform to APA 5th edition Section I "electronic media" (American Psychological Association, 2002, p. 268-281).

Key Definitions

Information Ecology is a metaphorical term used to describe an interconnected information environment. Information Ecology

> marks a connection between ecological ideas [and] the dynamics & properties of the increasingly dense, complex and important digital informational environment and has been gaining progressively wider acceptance in a growing number of disciplines. "Information ecology" often is used as a metaphor, viewing the informational space as an ecosystem (Wikipedia, 2003, ¶1).

Tom Davenport (1997) describes information ecology as

> all of a firm's values and beliefs about information (culture); how people actually use information and what they do with it (behavior and work processes); the pitfalls that can interfere with information sharing (politics); and what information systems are already in place (yes, finally, technology)(¶3).

Both models put "the spotlight [not on] technology, but on human activities that are served by technology" (Nardi & O'Day, 2000, ¶ 1). The information ecology perspective provides a philosophical point of view that encompasses the whole range of issues that affect information, peoples and organizations perspective of information, and it acknowledges the interconnected relationships between people, information and organizations.

Information Management (IM) is the process of "managing information to contribute to business performance" (Best, 1996, p. 3). It includes providing an organization with policies, standards, procedures, and technology to manage the information that employees use.

Information Technology (IT) applies to "computer systems - both hardware and software, and often including networking and telecommunications, usually in the context of a business or other enterprise. [It is often used as] the name of the part of an enterprise that deals with all things electronic" (Freedictionary, 2004, § Business Jargon). The distinction between technology and ecology is that information technology takes care of the hardware and software systems that support the flow and access to the data, while information ecology views the software and hardware as vehicles for connecting larger systems.

Information Literacy (IL) focuses on the challenges people have when they try to navigate the information environment, compose research questions, or conduct literature reviews (see Chapter 3 for further discussion). IL complements the information ecology model, and focuses on the skills necessary to navigate the data, coordinate the findings, and use the technology to manipulate the information into something new.

Information Literacy In The Workplace (ILW) has evolved into a viable field of research. The focus of information literacy in the workplace is on identifying ways employees recognize the need for information and how they locate, evaluate, organize, and then use the information effectively (Association of College and Research Libraries, 2000; Cheuk, 2002; Macoustra, 2003).

> **Knowledge Management** refers to the organization's attempt to ensure growth and continuity of performance by protecting critical knowledge at all levels, applying existing knowledge in all pertinent circumstances, combining knowledge in synergistic ways, acquiring relevant knowledge continuously, and developing new knowledge through continuous learning that builds internal experiences and external knowledge. (Bourdreau & Couillard, 1999, p. 7)

Within discussions of knowledge management there are multiple issues and practices that are currently being explored by public service leaders (see Appendix E).

Description of the Problem

This research is inspired by a number of problems that I identified during my work as a librarian, researcher, and corporate security professional. Since 1989, as an employee of universities (as a federal prison and medical librarian), private

security firms (supporting investigations, and crime prevention research initiatives) and as a corporate security supervisor, I have used electronic resources to support my clients' investigation and research enquiries. The client base that I worked with included correction officers, labour lawyers, corporate investigators, and police officers.

This thesis will address the following research question. **What are the comfort levels of police officers when they are using the Internet while at work?** The research also has three sub-questions:

1) **What strategies do police officers use to formulate their searches?**
2) **What search techniques do police officers' use when searching online resources?**
3) **What electronic resources do police officers use when searching for information?**

Many of my clients, would discuss the changes in both the amount of information they encountered and the rapid development of technology, and they often admit to being overwhelmed with the information available when they attempted to access online resources. Generally speaking they observed the following challenges and changes: they found that

1) The electronic information environment had become increasingly complex,
2) The value of the electronic information was hard to quantify,
3) The electronic sources of information appeared chaotic which was frustrating for the searchers, and, finally,
4) There was too much information.

As a researcher conducting online searches for my client, what I observed most often was that they frequently did not have clearly defined questions and this made it very difficult for me to conduct a meaningful and efficient search for them.

Today police officers are bombarded by information in electronic and paper format. The Internet, one of these sources of information, (which is the focus of this research and is represented in the last two columns of Table 2) offers exciting opportunities for police officers to access a wealth of law enforcement resources online. But this, too, can be overwhelming. The Internet appears to blend many sources into a seemingly single environment. In reality, it is a composition of very distinct sources of information, which can generally be broken into four broad levels (See Table 2).

Within each of these electronic sources there are a variety of levels of classification and accessibility. Table 2 outlines how the different levels in police information systems have counterparts in public/private/police domains. Level One of the table identifies the easiest access in public and private domains. Level Four is the most difficult to access and often requires that people accessing this level seek permission from the owner of resource, use passwords to log on, or pay a user fee.

The internal electronic levels were originally identified in Gehl (2001, p.15) "The Dynamics of Police Cooperation in Multi-Agency Investigations: Finding Common Ground" thesis.

TABLE 2

Information Resources within Police Environment

LEVELS	INTERNAL PAPER	EXTERNAL PAPER	INTERNAL ELECTRONIC	EXTERNAL ELECTRONIC
1	Police Officers' Office Space	Libraries	PIRS, RMS, RMS Kidds, Chiefs, RMS, PCR, Future Prime	Internet
2	Unit	Public Archives	CPIC, ViCLAS	Public Institutions
3	Detachment	Private Collections	National Criminal Data Base	Private Institutions
4	Organization Wide	Subscription Services	SIUSS, ERS, PIRS Tips, AMCM	Subscription Databases

To appreciate the increasing complexity of this electronic environment, Halasz and Cybe (1997) (as cited by Dykehouse & Sigler; 2003) noted that "15 - 30 new criminal justice websites were found each month" (p. 320). In the same study, they noted that law enforcement agencies were connected to approximately 1800 web sites. (p. 327) Clearly, accessing the Internet creates information overload. Information overload/anxiety is "produced by the ever-widening gap between what we understand and what we think we should understand. It is the black hole between data and knowledge, and it happens when information doesn't tell us what we need or need to know" (Wurman, 1989, p. i). Information overload or anxiety is often alleviated through better

information sharing and search strategies, and personal mastery. (Sparrow, 1999; Sweetland, 1993; McWilliams & Stepanek, 1998)

Within this complex information environment, police officers often struggle to make the connection between the various sources of information and how these resources can support them in the workplace. In a recent study of law enforcement personnel, researchers, using focus groups, observed that "simply determining what information to collect and the format for reporting it were substantial hurdles for end users to overcome" (Brown & Brudney, 2003, p. 40).

Similar conclusions are found in other information seeking behavior studies of mature users of the Internet as well as post secondary academic students, and professionals employed in legal, engineering and healthcare disciplines (see Chapter 2).

The literature review for this thesis, showed a lack of research on police officers and their information seeking behavior. Currently law enforcement agencies are "focusing...on the dissemination of information to promote a proactive, preventative (sic) approach to reduce crime and disorder" (Brown & Brudney, 2003, p. 30). By adopting this approach, law enforcement agencies are moving into the emerging concepts of intelligence led policing (see Appendix F). However, this

approach is based on the assumption that the police officer is able to navigate the information environment and make sense of the information being disseminated. My personal experiences suggest that this may not the case and one of the purposes of this thesis is to explore this assumption.

The Critical Importance Of Information In An Operational Environment

The final challenge the law enforcement community faces is the question of where all this information fits into the police officers day-to-day activities. In the business sector, this question has been explored. Business has realized that information is the resource that drives product cycles and informs decision making on a range of issues (e.g. everything from manufacturing waste recovery to product to market time lines). The business sector has developed the concept of knowledge management to harness information resources and refers to those who work with this information as "knowledge workers".

This shift to focusing on information and not work processes is credited to Peter Drucker's 1959 book, *Landmarks of Tomorrow*. In it, he says that knowledge workers primary task is working with information. Peter Drucker (as cited in searchCRM.com, 2004) says a knowledge worker is someone who

> works at any of the tasks of planning, acquiring, searching, analyzing, organizing, storing, programming, distributing, marketing, or otherwise contributing to the transformation and commerce of information and those (often the same people) who work at using the knowledge so produced…. The knowledge worker includes those in the information technology fields, academic professionals, researchers, and so forth. The term is also frequently used to include …lawyers, teachers, scientists of all kinds, and also students of all kinds.(searchCRM.com, 2004, § Knowledge Worker)

Since Drucker's initial reference to knowledge workers, there has been an increasing interest by business and public sector leaders in developing knowledge management practices. Their main motivation is the belief that their organizations' next operational advantage will be tied to the knowledge workers' productivity.

The business sector sees the use of the knowledge worker as a opportunity to maintain competitive advantage. Internationally recognized industry leaders such as British Petroleum, Ernst and Young, Chevron, Xerox, and Hewlett-Packard have already embraced knowledge management. These organizations, discussed in depth in Davenport and Prusak's (1998) *Working Knowledge*; Nancy Dixon's

(2000) *Common Knowledge*, Verna Allee's (1997) *The Knowledge Evolution*, utilized knowledge management strategies to maintain their corporations' strategic market advantage.

What these authors have not done is identify the specific skills that knowledge workers need to manage knowledge and thus maintain a competitive advantage. It also appears that the Royal Canadian Mounted Police (RCMP) is not addressing the skills police officers need to ensure that the "intelligence led policing" model will work. In order for intelligence led policing to be effective police officers need to "*understand* it…[and]*participate* in it, both as *users* of the various intelligence products and as active contributors to the process" *(writer's emphasis)* (Proulx, 2003, ¶ 1). However, a review of the RCMP website, InfoWeb and Online University does not provide any further clarification about what skills and resources police officers will need in order to participate in, understand or contribute to intelligence led policing.

If police officers are going to be a part of intelligence led policing, it seems likely that they will need their information skills and competencies be upgraded. Unilever (a international research corporation in the United Kingdom) noted that many of their scientists (read knowledge workers) did not have the pre-requisite skills to leverage the massive amount of

national and international research available to them (Donnelly & Craddock, 2002). The problem, for police officers is similar; how can they leverage the concept of intelligence led policing and how can they develop the necessary skills to use the resources available to them?

A further concern, as Brown and Brudney (2003) suggests, is that police officers may view intelligence led policing and knowledge management as yet more "substantial hurdles" (p.40) to getting information.

Another challenge to police officers is the lack of structure and clearly defined definitions of such concepts as information, knowledge, Internet, electronic resources, and information technology. For police officers this presents a problem. How do they know which resource to utilize? And, if they make a decision, informed or otherwise, how do they navigate the environment? Many of the clients I have worked with want the information **now**. They do not want to know about the links or connections to the various sources, largely because they do not have the time to explore the Internet.

This "now" attitude may no longer serve them because more and more information is linked electronically to their cars, desktops, and laptops. If they do not have the skills, their

levels of confidence and productivity will likely diminish and their ability to cope with the overwhelming flood of information will erode.

One way to improve their levels of confidence and productivity is to adopt a information literacy standard. Information literacy has developed into a set of standards, performance indicators, and competencies published by the Association of College and Research Libraries, which were adopted in 2000. Reviewing these Standards with some police officers during Summer Residency I discovered that some police officers were not aware of the competencies and also lacked the skills to implement them.

Impact of Problem

Christopher Murphy's (2002) presentation to Canadian Association of Police Chiefs, noted that in the law enforcement community there is "little independent evaluative research being done on the cost effectiveness of technology, sociological research, impact research, evaluation research, or policy research" (p. 27-28).

This lack of research offers an opportunity to explore how police officers manage the wide range of information available to them (see Table 2). However, extrapolating from the studies in

academic and other workplace environments, it seems likely that police officers experience the same problems as other workers, including mismanaged information, information not being entered, and information not being transferred.

As police forces embrace technology and adopt solutions such as intelligence led policing (Gill, 1998; Fahlman, 2003), that rely heavily on technology, police officers need to be able to convert that information into working knowledge and use that knowledge to make informed decisions.

Managing the Electronic Environment

I believe the potential causes of the problem are related first to

1) Observations about systemic issues related to police information systems (Gehl, 2001; Murphy, 2002; Wright, 1999), and
2) Failure by organizations to promote information skills as a means to navigate the workplace information environment, and
3) Failure by organizations to link information literacy skills to the workplace.

Gehl (2001), Murphy (2002), and Wright (1999) clearly identify systemic issues related to police information systems

including the lack of unifying vision (about police information systems) being articulated by a central authority; the existence of over 5500 police jurisdictions; and the lack of information sharing protocols. Underlying these systemic issues is the complexity of the police information systems. The many layers of the systems and necessity to use different passwords for different systems and then having to learn different search techniques can only compound the already challenging issues identified by these authors.

The second set of causes (the failure to promote information skills and to link information literacy skills to the workplace) is linked to police officers' attitudes towards information resources and to a lack of the skills they need to enable them to navigate the information environment. If they can not navigate the information environment, or utilize Proulx's intelligence led policing model, police officers are unlikely to make use of the information at the community level or in their day-to-day activities.

One model that may provide a way to build information literacy skills can be found in the academic environment. College and university students have long been taught critical thinking, research methodologies, and library/information centre orientation skills to prepare them to conduct their own research.

This prepares the students to access information, organize their findings and then present the findings. The students' training may be just as applicable for police officers. The process students use is similar to the intelligence cycles used to support intelligence led policing[1]. Recently, college and universities have also begun to explore "information literacy" as another way to prepare students to conduct effective and efficient research.

Furthermore, when I examined the knowledge management literature to identify if there were any specific skills identified in the workplace, I discovered that Davenport and Prusak (1998) only allude to the knowledge roles and describe skills as little more than "technical know how and intuitive skills"(p. 110). They do not provide adequate information about knowledge worker competencies or skills. They do allude to broad sweeping skills such as intuition, writing skills, subject matter expertise, and the "hard skills and softer traits" (p. 110). of the knowledge worker[2].

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[1] It is not the purpose of this research to explore intelligence cycles. However, the intelligence cycle is also a form of information seeking behavior that is used in the law enforcement, military, and corporate agencies. Reference to the intelligence cycle in this thesis is limited to showing similarities to other information seeking behavior models.

[2] Note: they do provide a deeper evaluation of the skills of a Chief Knowledge Officer, but that is not the focus of this research.

Nancy Dixon's (2000) book, *Common Knowledge: How Companies Thrive by Sharing What they Know* also lacks information on the skills necessary to be a "knowledge worker".

She does provide an overview of how knowledge is transferred from worker to worker, worker to system, and system to system. She also identifies the needs of experts who are transferring the knowledge. (Dixon, 2000, p. 127-141) However, her overview is limited to analysis of the system and does not appear to explore the impact of these transfers on knowledge worker performance. She does refer to the skills of "sensemaking, interviewing, and observation" (p. 117), but only in the context of knowledge specialists, not the knowledge worker.

This thesis argues that the skills needed by the knowledge worker are similar to the research skills used in academic environments. These skills, broadly labeled as information literacy, have been extensively studied to produce a curriculum that is provided to academic students as part of their library orientation. These skills may also help knowledge management initiatives to succeed by giving workers a "set of roles and skills to do the work of capturing, distributing, and using knowledge" (Davenport & Prusak, 1998, p. 107).

Training police officers in research skills will enable the RCMP to nurture workers who can be "skilled at framing and structuring their own knowledge" (Davenport & Prusak, 1998, p.110). Using these skills, police officers could also actively engage in knowledge management, or for that matter, intelligence led policing strategies as well as tap into the wealth of resources made available by these strategies.

When I explored these observations and ideas with Staff Sergeant L. Hall (personal communication, Summer, 2003) (NCO i/c Research and Development, RCMP) and Sergeant F. Weller (personal communication, Summer, 2003)(Veteran member of Vancouver Police Department) neither one was surprised at my analysis and both police officers agreed that my research would be beneficial. A. Gehl (personal communication, October, 2003) agreed with my observations about police officers' struggle to manage their information sources. Collectively, these conversations confirmed my observations and clarified my research focus.

Sponsorship and Focus of the Research

The purpose of this section is to identify the organization and its challenges, and the rational for conducting this research within the RCMP.

This research is sponsored by the Royal Canadian Mounted Police (RCMP) which is Canada's "national police service and an agency of the Ministry of Public Safety and Emergency Preparedness Canada" (Royal Canadian Mounted Police [RCMP], 2004a, ¶1). Currently the RCMP is facing increasing pressure "for strong performance - both in management and in operations" (Zaccardelli, 2003, ¶1).

The RCMP is also adopting intelligence led policing and recognizing the need to tackle the challenges of "globalization, rapid advances in technology, and the advent of terrorism" (RCMP, 2004a, § Our Vision of Integration). This recognition has led the RCMP to reach "out across agencies, working quickly and flexibly in an integrated and intelligence-led fashion" (Zaccardelli, 2003, § Our Vision of Integration).

The idea to conduct this research was initiated by RCMP Research and Development section in the Pacific Regional Training Centre, Chilliwack, BC. The section's NCO i/c S/Sgt Len Hall, was attending a workshop I was giving to teach techniques and strategies for online research. At the conclusion of this workshop, S/ Sgt Hall began exploring with me whether or not the workshop would benefit police officers using the Internet.

A review with the S/Sgt Hall of the RCMP expectations about police officers and information suggested that police officers appeared to be struggling with the Internet, online resources and information technology. Underlying this struggle was Commissioner Zaccardelli's (2003) vision of

> a free flow of intelligence and sharing of real-time mission-critical information and intelligence across organizations, across borders, and across continents. Imagine [he said] that we have the ability to get the right information to those who need it, when they need it, and that traditional approaches to restricting access are no longer applicable. (§ Imagine and Act)

The RCMP was an ideal sponsor because of their learning organization model. As a learning organization, the RCMP is using technology to help police officers get "connected to the billions of resources available on the Internet, supporting instant multimedia communications anywhere on the planet…" (RCMP, 1999, p. 2).

Commissioner Zaccardelli's statement and the learning organization strategy suggest that information and technology can be the answer to improved data and information collection. However, just the development of the cutting edge technology is

not enough. Police officers must understand how it works and how to apply it to their work.

The final component of the RCMP that was reviewed for this research was the RCMP's public domain website "On-line University" at http://www.rcmp-learning.org/fr-welc.htm. The site is intended to provide police officers with an

> automated resource data base of learning opportunities including individualized instruction modules, exercises, reading materials; suggested on-the-job assignments, secondments and coaching opportunities; and information on formal training including courses and workshops. The site identifies how to locate materials not owned by the RCMP, and provides access to materials designed by the RCMP. (RCMP, 2000, p.4)

In summary, it appears the RCMP is using information technology, intelligence led policing, and online learning resources to support police officers and organizational strategies. What remains to be seen is if police officers have the information skills that are needed to access and navigate these electronic resources.

CHAPTER TWO - INFORMATION REVIEW

Review of Organizational Documents

Employee Continuous Development Program

I conducted a review of employee handbooks developed by the RCMP's Employee Continuous Development Program(ECDP). (RCMP, 2000) The handbook describes the use of the CAPRA model as bases for problem solving.

The CAPRA model is a problem based learning methodology (RCMP, 2001, p. 2), which emphasizes individualized learning. CAPRA is an acronym for; clients, acquiring and analyzing information, partnerships, response, and assessment (see Appendix C for CAPRA Model). Applying the CAPRA model to a job description enables the RCMP to link the skills and competencies of a position to a specific category of CAPRA. For example, a police officer wanting to become a Commercial Crime Investigator, can go online to the RCMP On-Line University website at http://www.rcmp-learning.org/fr-welc.htm and review the duties of the Investigator and how those duties relate to CAPRA.

I also explored publicly accessible RCMP websites to see if there was any clear indication of what the RCMP expectations are about how their employees should manage information so that they can carry out their day-to-day activities. This information was

found in the Employee and Supervisor handbooks developed by RCMP Human Resources.

RCMP Employee and Supervisor Handbooks

My review of the RCMP Employees' handbook identified competency based skills related to staff development and assessment. The handbook identifies the RCMP's expectation that employees will "acquire and analyze appropriate information … to achieve objectives [and] be able to bring together large amounts of information (e.g., course trends, management trends), [and create a] *coherent picture to integrate new information and identify implications for policy" (writer's emphasis)* RCMP, 2000b, p. 2).

This expectation is similar to that found in the cycles of information seeking behavior that will be explored more fully in Chapter 2. At this point, it is sufficient to observe that the RCMP expects police officers when they have identified a question, to search for answers, integrate the answers into an existing knowledge base and then, at some point, integrate that information into the larger organizational issues. And finally, police officers are expected to develop an understanding of the implications of the new information on "policy". Examples of this expectation are throughout the handbook (RCMP, 2000b), for example;

1) [The] key to defining and resolving problems, especially in this information-driven society, is the ability to collect, organize, analyse and document information. (p. 1)

2) Effective community policing and modern management require information beyond a specific case, situation or incident. They require information that helps police and police support staff, managers and executives understand their clients' and employees' concerns, and [to understand] patterns and trends that allow problem solving, prevention and restorative justice. New technologies provide *unprecedented access* (*writer's emphasis*) to information on patterns of crime, community profiles, employee, client/community perceptions and expectations, [and] services available. (p. 2)

These references to information suggest that police officers will need information skills that will enable them to acquire, analyze, and filter the information they now have unprecedented access to and to manage the seemingly wide array of applications and implications for police officers, clients and communities. Clearly, there is a need to ensure that police officers need to be able to

1) Understand the basic protocols and principles which underpin electronic searching (information literacy),
2) Understand the distinctions between electronic sources and printed documents which will explain how electronic information is organized (information seeking behavior), and
3) Understand which electronic resources are available (information environment).

These issues will now be explored in the literature review as key concepts and subconcepts.

Review of Supporting Literature

The challenge of managing information in the complex environment of the RCMP may be, in part, addressed by adopting existing practices of information literacy, and information literacy in the workplace and by developing a better understanding of the information environment. The literature review conducted is broken into the following key concepts:

First Key Concept - Information Literacy.

Sub-Concept 1 - Competencies and Standards.

Sub-Concept 2 - Information Literacy in the Workplace.

Second Key Concept - Information Seeking Behavior.

Third Key Concept - Information Environment.

Information about these key concepts was found in various online databases, as well as the Justice Institute of British Columbia Library, the Royal Roads University Library, the American Library Association (ALA) website on Information Literacy, and company websites. Resources were also collected from Internet sites supported by academic institutions in the United Kingdom, Australia, Hong Kong, United States, and Canada. This research confirmed that information literacy in the workplace has been studied in a number of work environments, but not, so far as could be determined, in law enforcement.

Adopting these concepts may provide police officers with insights into the CAPRA model as well as clarify how to meet the RCMP expectation that police officers will be able to collect and analyze information as part of their duties. The information literacy literature generally follows the "Information Literacy Competency Standards for Higher Education" provided by the Association of College and Research Libraries (2000). By adopting these standards police officers can benchmark themselves within an existing information framework used in libraries, research, and education.

First Key Concept - Information Literacy

Sub-Concept 1 - Competencies and Standards.

Information literacy identifies competencies that police officers need to have in order to cope with the "information age". These skills are not new. They have been utilized in the past by both business and academic disciplines. Hancock (1993) identifies the following characteristics of people who are information literate. They have an

1) Attitude that appreciates the value and power of information, (§ For Citizens)
2) Awareness of the diversity of information resources and formats, and how to use multiple information retrieval systems effectively to identify, locate, and obtain needed information and data, (§ Resources for Information Literacy)
3) Understanding of how to use or manage information for some purpose by extracting, organizing, synthesizing, and evaluating what has been retrieved, and (§ For Workers)
4) Ability to distinguish between information and knowledge (§ For Citizens).

Dr. Alan Bundy (2001) expanded on Hancock's characteristics, saying "an information literate person has all of the above, and [also a] understand the economic, legal, social and cultural issues of the use of information, [and be able to] classify,

store, manipulate, and redraft information [that has been] collected or generated (p.1).

In 2000, the ALA adopted "Information Literacy Competency Standards for Higher Education" (Standards). There are five standards with multiple performance indicators and outcomes which have been adopted in USA, Australia, Sweden, Germany, Canada, and a host of other countries (Rader, 2002). The Standards are;

Standard One

> The information literate student determines the nature and extent of the information needed.

Standard Two

> The information literate student accesses needed information effectively and efficiently.

Standard Three

> The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.

Standard Four

> The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.

Standard Five

> The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally (Association of College and Research Libraries, 2000, pp. 8-14).

Each standard is accompanied by performance indicators and outcomes which can be adapted to use with the CAPRA model of the RCMP. I believe that with proper training these standards can be achieved by police officers. My belief is based on my research in other disciplines which have used information literacy to improve information seeking behavior.

Sub-Concept 2 - Information Literacy in the Workplace

Law Enforcement can benefit from studies done in other disciplines. For example, Leckie, Pettigrew and Sylvain (1996) conducted research on three professional groups; lawyers, engineers, and healthcare workers. As a result of this study they were able to identify three major components common to all professions:

1) work roles,

2) associated tasks,

3) characteristics of information needs, and

three factors affecting information seeking:

1) awareness,

2) sources, and

3) outcomes (p. 161).

Their research was supported by Cheuk's (1998) use of sense-making which discovered that the information seeking behavior of financial auditors and engineers also had "distinctive sets of information seeking behavior that were predictable" (§ Implications and Findings).

Cheuk (1998) also concluded that professionals do not follow a sequential order of questions, and as a result asked if they should "be taught to follow a 'right' path to seek and use information" (§ Conclusions). Wilson (2000), and Dalbello (2001) also suggested that information seeking behavior could only be understood when examining the seeker's behavior in relation to sources and channels of information.(Wilson, 2000; Dalbello, 2001) The cumulative effect of all of this research suggests that professionals information seeking behavior is predictable, but is also influenced by the type of work the participants were employed in.

One outcome of this research is that corporations, because they have seen the economic benefits, have begun to apply these academic studies to the workplace. Although it is still a relatively new concept (Winterman, 2003; Donnelly & Craddock,

2002), the development of "literacy in the workplace" has been implemented by United States Department of Navy's Chief Information Officer, United Kingdom division of Unilever's Research and Development team, Her Majesty's Customs Library, and Clifford Chance, LLP (Hong Kong). Each of these organizations has approached information literacy as a link to knowledge management practices, product development reform, or technology utilization reviews. (Donnelly & Craddock, 2002)

One study in particular, conducted by Unilever's Information and Training team members, Donnelly and Craddock (2002), in cooperation with University of Sheffield's thesis researcher Patrick Green found that:

1) Research participants tended to over rate their skills, (§ Education)
2) The researchers conducting the research made many invalid assumptions about the level of information literacy among the workers, (§ Education)
3) There were different styles of learning that needed to be recognized and the curriculum needed to be adjusted for each style, (§ Different Styles of Learning)
4) Linking the curriculum to workplace events was critical if learners were to believe their time was being usefully spent, (§ The Modules)

5) Self assessment, theory, demonstration and then exercises had to be continually linked to workplace problems, (§ The Modules)
6) Networking with similar organizations was critical to give the program widespread credibility, and finally the
7) Workshops needed to be interactive (§ Evaluation of the Course).

These findings provided some insights into developing the recommendations of this thesis.

Second Key Concept - Information Seeking Behavior

Researchers have developed several models in an attempt to identify information seeking behavior. Within a competency based model and focusing on the human interaction, the following definition provides the best overview of what information seeking behavior is. It is

> the cognitive processes that users employ to identify, access, retrieve, and use information. These involve understanding how people interpret data, and the attendant application of this information for new use. The Penguin Dictionary of Psychology notes that 'information processing models of thought and action view cognitive and perceptual operations as taking place in stages or steps.
> (Lenox, 1998, p. 61)

Earlier in this thesis, Wilson's description of information seeking behavior was identified. Wilson's model also identified stages that suggested information seeking was a "goal-directed problem-solving process, [involving the stages]; problem recognition, problem definition, problem resolution, and (where needed) solution statement" (Wilson, 2000, p. 53). This model is consistent with the criminal intelligence, research process and knowledge management models (see Table 3).

Wilson's various stages are also linked to external influences such as how to access other databases, the influence of other researchers, and new demands to search for similar questions from a different perspective. Is it possible that police officers, becoming aware of these stages and influences, might become more effective searchers and have higher levels of confidence in their publicly accessible sources?

The categories and models presented in Table 3 illustrate the four stages that researchers and organizations use to find and apply information appropriately. Police officers need to understand the differences in how the various processes are described. If police officers are to truly grasp the concept of clients, and assessment, and embrace Proulx's intelligence led policing model, they need to understand how other environments

view their own search processes. With this understanding, officers will be able to compare where they are in their own processes when working with their academic or business partners.

TABLE 3

Information Seeking Behavior Models

Model (Author, Year)	**Information Seeking Behavior (Wilson, 2000)**	**Criminal Intelligence Service (Criminal Intelligence Service Canada, 2001)**	**Research Process (Asselin, 2000)**	**Corporate Intelligence (Kahaner, 1996)**	**Knowledge Management (Allee, 1997)**
STAGE 1	Problem Recognition	Collection / Collation	Problem	Planning and Direction	Doing -Action or experience
STAGE 2	Problem definition	Evaluation	Look for Information	Collection	Reflecting – observing
STAGE 3	Problem resolution	Analysis	Analysis	Analysis	Conceptualizing - making meaning
STAGE 4	Solution statement	Dissemination	Communicate	Dissemination	Planning - coordinated action

The RCMP, as an organization seeking information, uses a process that "involves the collection and analysis of information to produce an intelligence end product designed to inform police decision-making at both the tactical and strategic levels" (RCMP, 2003, ¶1). Within other disciplines, this information seeking behavior is equivalent to marketing analysis, corporate business intelligence, or knowledge cycles. Each of these models shares similar sequences of information seeking behavior, although they are labeled differently (see Table 3).

Third Key Concept - Information Environment

In information literacy, the focus is on the person and the skill sets. In most discussions about information management, the focus is usually on providing a technological solution and little attention is given to the skill sets needed to access the resources. Table 1 outlined the different sources that make up the information environment. For many police officers these resources present a challenge because the police officers may have difficulty appreciating the wide scope of the information that is available.

This challenge was evident in discussions I had with police officers who were attending the Master of Art in Leadership and Training at Royal Roads University summer residency program in 2003. The police officers were surprised by the wealth of

sources that could be accessed. Within law enforcement and military communities these sources are classified as "open source intelligence" (OSI). OSI is publicly available information (i.e. information any person could lawfully obtain by request or observation); unclassified information that has limited public distribution or access; and non-proprietary information from companies and other organizations (see Appendix D for more information on OSI).

Kahaner (1996) suggests that organizations can gather "85-90 % of their intelligence information through traditional information sources" (p. 33). These include the Internet, libraries, educational institutions, government, businesses, and social agencies that can be ethically and legally accessed by anyone. Kahaner's position provided further support for my original intention to use only publicly accessible resources. For police officers attending summer residency, Kahaner's suggestion helped them to begin to understand the scope of the information environment.

If Kahaner's suggestion is correct then competency in information skills and information literacy will help police officers to capitalize on these resources. By developing these skills, police officers can navigate the information environment and evaluate the information they find. From my discussions

during Royal Roads Summer residency in 2003, with law enforcement and public safety personnel, I realized that the quality of information was as important as the source. Therefore I conducted a literature review to identify how "information quality" was defined.

Indicators, characteristics, and benchmarks have been developed to help people evaluate what they find on the Internet, and also to evaluate what they need to consider before releasing or sharing that information. Table 4 shows four different sets of information quality that would facilitate the interpretation of a document and source.

Kahn, Strong and Wang (2002) developed a information quality model that examined information quality by identifying what features of information can be "compared across organizations" (p. 184). This model is relevant to this research because Kahn, Strong and Wang (2002) provide a "basis for assessing how well organizations develop sound and useful information products and deliver dependable usable information services to information customers" (p. 191).

TABLE 4

Mapping the IQ dimensions into the PSP/IQ model

	Conforms to Specifications	**Meets or Exceeds Consumer Expectations**
Product Quality	Sound Information • Free-of-Error • Concise Representation • Completeness • Consistent Representation	Useful Information • Appropriate Amount • Relevancy • Understandability • *Interoperability* • *Objectivity*
Service Quality	Dependable Information • Timeliness • Security	Usable Information • Believability • Accessibility • Ease of Manipulation • Reputation • Value-Added

(Kahn, Strong & Wang, 2002, p. 188).

The quadrants in Table 4 represent the quality of information from the various parties who may be creating, accessing, or assessing the information. In their study of three organizations, the researchers found that the organizations

provided "useful and largely dependably delivered information...but the information was not sound or usable" (Kahn, Strong & Wang, 2002, p. 190).

I would suggest that this information quality model would enable to police officers to develop an awareness of, and an ability to apply these qualities to the sources of information they access.

TABLE 5

Dimensions of Information Quality

Dimensions	**Definitions**
Accessibility	The extent to which information is available, or easily and quickly retrievable
Appropriate Amount of Information	The extent to which the volume of information is appropriate for the task at hand
Believability	The extent to which information is regarded as true and credible
Completeness	The extent to which information is not missing and is of sufficient breadth and depth for the task at hand
Concise Representation	The extent to which information is compactly presented
Consistent	The extent to which information is presented in

Representation	the same format
Ease of manipulation	The extent to which information is easy to manipulate and to apply to different tasks
Free-of-error	The extent to which information is correct and reliable
Interpretability	The extent to which information is in appropriate languages, symbols, and units, and the definitions are clear
Objectivity	The extent to which information is unbiased, unprejudiced, and impartial
Relevancy	The extent to which information is applicable and helpful for the task at hand
Reputation	The extent to which information is highly regarded in terms of source or content
Security	The extent to which access to information is restricted appropriately to maintain its security
Timeliness	The extent to which information is sufficiently up-to-date for the task at hand
Understandability	The extent to which information is easily comprehended
Value-added	The extent to which information is beneficial and provides advantages from its use.

(Kahn, Strong & Wang, 2002, p. 187).

CHAPTER THREE - RESEARCH METHODOLOGY

Research Methods

The research methodology in this thesis is a balance of inductive and deductive approaches. These approaches, as identified in the research literature by Palys (1997), Guba and Lincoln (1989) enabled me to collect data using a survey instrument (the deductive) while acknowledging the experiences of participants and my own experiences (inductive). This research methodology uses an interdisciplinary triangulation as a basis for analysis of the survey results.

Interdisciplinary triangulation enables the researcher to view an issue from different disciplinary perspectives. Analysis of my research uses two perspectives, firstly, information seeking behavior and, secondly information literacy. While both are used in library and information sciences, each offers a unique perspective for analysis of data.

The first perspective, information seeking behavior (ISB), is a systems perspective that describes how people look for information. It has been noted in the literature that ISB connects psychology, management, communications, and information science (Nahl, 2001, ¶14; Saracevic, Kantor, Chamis & Trivison, 1988, p.163). The second perspective, information literacy (IL), is an education based perspective that teaches people the theory

of information management which "applies equally to workplace applications" (Goad, 2002, p. 21).

Information seeking behaviors can be taught as a repetitive process. For example, someone can be taught simple search engine techniques such as the Boolean strategies or indexing strategy of a search engine. Information literacy, on the other hand, is a much broader concept. The skills taught as part of information literacy training enable students to manage, and modify, and interpret their search processes as an evolving process of deductive and inductive thinking.

Data Gathering Tools

The data for this thesis was gathered using a written survey which was administered to RCMP police officers who are Regular Members. This survey was a modification of an existing survey administrated by UMBC Library at Baltimore Maryland. The UMBC survey was selected for the following reasons;

1) It met the requirements that I had established for this study.
2) It was located on the Internet, which made it readily accessible using Boolean search techniques consistent with my research premise that using the Internet resources could support research.
3) Copyright permission was provided to use it. and

4) It questioned survey participants about electronic and traditional resources. The survey was modified to address only electronic resources only that professionals utilize in their workplace (Treadwell & De Young, 2003; Spink, Wilson, Ellis & Ford, 1998; Wilson, 2000; Dalbello, 2001).

The use of a survey instrument helps to establish what the level of skills in the workplace is and to identify any areas for improvement. The quantitative nature of surveys helps to identify the day to day realities of police officer using electronic resources in the workplace. Keeping grounded in the day-to-day realities is a form of evaluative research that enables leaders "to continuously improve programs or change processes" (Royal Roads University, 2002, p. 17). This approach is intended to have "some real world effect and focuses on measuring performance" (Babbie, 1998, p. 335).

Evaluation research involves three processes;

1) Gathering information to describe the current state of affairs about the personal information management practices of police officers. (This will be achieved by surveying police officers' information seeking behavior in the workplace.)

2) Examining the data collected to identify what skills police officers need in order to increase their confidence levels and comfort levels. (Identifying and applying these skills should enable police officers to navigate electronic information environment with confidence.)

3) Identifying recommendations and strategies necessary to achieve Step 2 above.

Study Conduct

The surveys were distributed to RCMP police officers attending courses at the Pacific Regional Training Centre (PRTC). Originally, the writer was to distribute the surveys. However, the NCO i/c of PRTC was concerned about ensuring police officer anonymity. As a result, a PRTC RCMP police officer distributed the surveys. This police officer had attended Royal Roads University Master of Arts program and was familiar with the necessity to ensure confidentiality and voluntary participation, and to give clear instructions to participants. All surveys included a letter of consent (see Appendix A) which was attached to four double sided pages of questions. Surveys were returned to the RCMP police officer.

The surveys were distributed from March 10 to April 2, 2004 and then returned to me upon completion. The police officer

assured me that all necessary steps to ensure confidentiality had been taken.

One hundred twelve surveys were distributed and ninety-nine were returned. Thirty-two were unsigned, sixty-seven were signed and thirteen were not returned(see Table 6). Review of the ninety-nine surveys revealed that thirty-eight participants did not complete all of the questions. There was a similar result with the original survey administrated by the UMBC Information Literacy Task Force (2003) of Albin O. Kuhn Library. Thus, the percentages reported in this thesis will be based on the number of police officers who actually responded to the individual questions, and not the total number who completed the entire survey.

The survey results were then entered into an EXCEL workbook. Each question and the participant's answers to each question were entered into the spreadsheet. Participant comments were entered verbatim. Any sections that were incomplete were marked as "no data". Therefore some questions have one column with "no data" entered in the workbook, even though other in the question have data. Because there were multiple answers, the scores of some questions are greater than ninety-nine.

All surveys were entered, and analysis was completed on raw

numbers of either checkmarks, numbers, comments or "no data". Charts were then generated to illustrate the participants' responses and these charts were then used to review the data. Analysis was controlled for years of service, comparison of self reported confidence levels, and comments.

TABLE 6

Survey Overview

Survey Overview of Questions (n = 112) 87% return rate		
Unsigned	32	Reasons cited: Police Officers were prepared to participate, but had concerns about their identity[3].
Signed	67	
Total	99 (87%)	All completed surveys had either a check mark or some written comment in every section.
No Return	13 (13%)	Issued but not returned
Total	112 (100%)	Total Survey Size

[3]This is similar to the concerns cited by Royal Roads University law enforcement and public safety personnel who refused to have their names or faces on Corrections Canada Training Video, citing personal safety concerns.

CHAPTER FOUR - RESEARCH STUDY RESULTS

Study Findings

Demographic Information

Ninety-nine participants filled out the survey. All participants were RCMP sworn peace officers attending professional development courses. Eighty-two participants were between the ages of twenty and forty-nine, four participants were fifty years old or older, and thirteen participants did not provide their age. The participants' service years ranged from one year to thirty-two years. Approximately one-third of the participants had between one and three years, another one-third had between four and eight years and the final third had eight to thirty-two years service. Some of the participants used increments of one-half to identify their service years; this information was rounded down to the next whole number. Seventy-three participants were constables, twenty-two were corporals, three were sergeants, and one did not provide any data.

Some participants in the survey did not complete the matrix question. This may be because of the unclear instructions accompanying each matrix table. Participants, in the written comment section, expressed their concern about whether they were being asked to evaluate the sources of information or the information itself. The survey also had a formatting error that

may have affected participant response. Question number 2, the very last option, which would be either a step 7 or step 8 of the search process, ended up at the top of the page four. As a result this step was removed.

Survey Analysis

Question 1

Question 1 (Q1) (see Appendix A for question) identifies the comfort levels of participants' information seeking behavior. The intention of the question was to determine how comfortable police officers were at various stages of their information seeking process.

The comfort scores ranged from a high of 67% (critical thinking and problem solving) to a low of 48% (organizing electronic information) (see Appendix B Question 1). Participants self reported lower levels of "comfortable" and "very comfortable" confidence in organizing electronic information, and evaluating Internet resources (see Table 7). These are rank ordered in Table 7. Participants also reported lower levels of "comfortable" and "very comfortable" in the area of electronic information and integrating the information. This may account for the 58% of the participants in Q3 who chose option two "I can usually find what I want, but there are

frustrations" to describe their experiences when searching for information.

TABLE 7

Ranking of Very Comfortable and Comfortable

Ranking	**Very Comfortable**	**Comfortable**
1(Highest)	Identifying questions based on information needs	Using information in critical thinking and problem solving
2	Identifying potential sources of information	Identifying potential sources of information
3	Using information in critical thinking and problem solving	Integrating new information into an existing body of knowledge
4	Accessing computer based sources of Information	Developing successful search strategies
5	Developing successful search strategies	Identifying questions based on information needs
6	Evaluating	Accessing computer

	information from Internet resources	based sources of Information
7	Organizing electronic information for practical application	Organizing electronic information for practical application
8 (Lowest)	Integrating new information into an existing body of knowledge	Evaluating information from Internet resources

Q1 indicates that participants see themselves as "very comfortable" or "comfortable" with their information seeking behaviors despite the fact that, as indicated in Question 7, they do not use Boolean strategies to search with, nor do participants in Question 6 indicate that they access a broad range of websites they access.

Question 2

Q2 (see Appendix A for question) attempts to identify what steps participants would take to conduct a search. The difference between Q1 and Q2 is subtle but very important. Both come from an information literacy perspective. Q1 explores the

broad range of competencies when participants are working with information, while Q2 involves specific examples of the competencies.

The commonest sequence of steps (see Appendix B Question 2 Chart) was as follows:

Step 1. 54% start by brainstorming the concept

Step 2. 41% then indicate they formulate questions based on the information needed to begin the search

Step 3a) 35% would then "browse the most recent issue of an education journal"

Step 3b) 34% indicate they would "search subject-based and other related databases"

Step 4. 28% indicated they would "browse a current printed magazine index"

Step 5a) 25% would "look at reference material that provides an overview of violence and teenagers"

Step 5b) 25% of the participants would then "search the Internet using key words"

This sequence of steps sheds some light on what police officers do when they attempt to use electronic journals or other resources found on the Internet. Step 1 and 2 are

interchangeable. However, if police officers then moved directly to Step 5a, and then back to Step 4 they would discover search headings that they could then use for online searching. In this way, police officers would be better prepared to guide themselves "through the vast mass of information until they are able to get to locate exactly the right section which covers the area that they are interested in" (Bradley, 2002, p. 21).

Moving to Step 5a from Steps 1 or 2 would also assist police officers to understand the knowledge maps that are generated in highly specialized subject areas. These "knowledge maps" are representations of, "information spaces in which the individual information items are …structured according to possible meanings and semantic relationships" (Novak, Wurst, Fleischmann & Strauss, 2003, ¶7). Providing police officers with the correct search terms early in the process should reduce the frustration levels that were indicated in the Q3 responses.

Although in Q2 participants said they would conduct searches of subject based databases, in Q6 they said that InfoWeb was their primary source. The implications for knowledge management initiatives to codify and coordinate corporate knowledge suggest that the information architecture must be consistent with InfoWeb lexicon. However a cursory review of InfoWeb revealed

inconsistencies in webpage format, content descriptors and links to other parts of the organization.

Q2 established that brainstorming was the first step for 54% of the participants. This was generally followed by formulating the question and searching subject based databases. Q2 results suggest that participants are comfortable with the skills necessary to "find printed literature [but] need to be supported to transfer these skills to the electronic environment" (de Ruiter, 2002, ¶2).

Question 3

The purpose of this question was to let participants describe their experiences at work when they used the Internet. 58 % of the participants chose to describe their experiences as 'I can usually find what I want, but there are frustrations'. 18% chose 'I found what I wanted but with difficulty'.

13% of participants chose 'I generally avoided the Internet, preferring to use my contacts with peers and supervisors'. This group of participants consisted of police officers who were between the ages of twenty - seven and thirty and had seven or less years of service. One reason for this behavior may be that this group sees more value to their careers by seeking

information directly from developing relationships with other officers rather than using Internet search strategies.

Overall, the responses indicate there is a level of frustration when police officers were using electronic resources to try to find information. This frustration may be because of limited understanding of search strategies (see Question 7) or because the information that they do find does not fit into their "current mental models for understanding the world" (Brooks, Barrett & Oehlers, 2000, § The Information-Literate VR Professional). Learning organization literature supports this second conclusion. Senge, et al (1999) stated that if employees cannot learn "...how to use the wizardry wisely and judiciously..." (p. 437) they are unable to get access to the knowledge that a learning organization has codified and made accessible on their intranets. These findings also raise the issue of what are the best tools that police officers can use so as "not [to get] mired in misguided efforts [that] will extract a heavy personal and economic toll" (Allee, 1997, p. 15).

Question 4

94% of the participants reported they 'taught themselves to use the Internet'. This may explain the number of participants who reported being frustrated, or had difficulty finding information. Self taught use of software and computer technology

"can lead to frustration on the part of the user and frustration with the learning process" (Palloff & Pratt, 1999, p. 63). As the frustration level rises and participants fail to achieve the results they desire, participants may resort to learning to use a limited number of search engines.

Increasing the workload d may also increase the frustration of trying to find information. Ericson and Haggerty (1997) noted that "while computerization was justified to police officers as a tool for reducing the paper burden, it actually increased their knowledge workload" (p. 407).

Question 5

The results of this question suggest that participants have confidence in the information they get from authoritative sources when using specific search terms (63%), visiting a professor's website(62%), consulting with a supervisor(61%), or using a friend (58%). Participants reported lower confidence levels when using an Internet search engine (49%), or having to use a library (39%). 43% of the participants reported being "comfortable" with criminal justice webpages[4] on the Internet. If participants are using only their existing framework of knowledge to find

[4] Criminal justice webpage was not defined or restricted to specific types or endorsed websites. The intent was to discover any connections to external webpages that police officers identify as "criminal justice sites".

information, there may be implications for knowledge management initiatives.

For example, participants may not see the value of communities of practice that include outside agencies or private sector organizations. Outside resources were seldom identified by participants. There were references to each of the following; University of BC (UBC), Law Library (no specific one identified), and Simon Fraser University (SFU). Similarly, there were only a limited number of references to other justice system related organizations, such as CPC, Stats Canada, Justice Institute of British Columbia (JIBC), and various federal and provincial courts. The participants only identified four search engines; Google, MSN, Yahoo, and Alta Vista were identified.

There were no references to civilian agencies that have expertise in any the fields of crime prevention, commercial crime, or policing research. Question 6 showed a high reliance on InfoWeb. InfoWeb, the RCMP corporate intranet , was especially designed as the point of principal contact for RCMP police officers and this reliance on InfoWeb may account for the lack of use of other criminal justice web pages.

Respondents to Q5 suggest participants' comfort levels are high when they have clearly defined expectations of what they are

searching for and can use information that has been created for a specific purpose. If the information they find does not fit into a predefined expectation, then police officers appear to resort to using more familiar resources.

This data is consistent with other research involving workplace situations. Julien and Michels (2000) study found that fifty-four percent of the workers interviewed used "personal sources for help" (p.8). A similar study of professionals in the workplace found that professionals who have a highly specialized body of knowledge and experience tend to rely on "personal knowledge and experiences" (Leckie, Pettigrew & Sylvain, 1996, p. 183). The implications of these findings suggest that knowledge management mapping strategies may need to focus on identifying *existing* communities of practice. At Lotus, Penuel (1999) determined that workers needed access to "experts"(p. 3). He also identified three critical points of intersection between workplace learning and knowledge management strategies, the first of which was that "workers learn and manage knowledge within communities of practice" (p. 3).

Question 6

Question 6 was intended to discover participants' expectations of the Internet as support for their work. This question was often not completed fully which may, as explained

earlier, be a result of the matrix format used. Data (see Appendix B Question 6) that was provided did clearly show that supervisors and peers were the first to be consulted, closely followed by InfoWeb. InfoWeb or "RCMP Internet" was referenced in 76 out of 84 responses as the site police officers use for online searching.

InfoWeb was identified both as a law enforcement website and as an Internet search engine. What this suggests is that police officers believe that InfoWeb and Internet are the same thing, but they are not. InfoWeb is a corporate intranet and its information is limited to that which has been vetted by the RCMP. Many police officers appear to stop there in their electronic search. As a result, they cannot take advantage of sources on the Internet, nor are they using the robust Internet search engines like Google, Alta Vista, Kartoo, or Mozilla.

Interestingly, participants who were seeking information about the future of policing went directly to the Internet. The literature suggests that information seeking on the Internet may, in part, be driven by the user's assumption that the Internet will provide the answer. However, the reality is that "less than ten percent of the information that is available to people is on the Internet. The remainder exists in printed, hardcopy format: books, newspapers, journals, and reports" (Tompkins, 1997, ¶11).

Collectively, these are the open source intelligence resources that I discussed in my literature review and Appendix D.

Question 7.

Boolean search techniques enable the searcher to control the number of returns. Table 8 shows the results of using Google to search "crime" and "education". Changing how the two terms are used can result in 4,340,000 web sites not being included in the search results. Furthermore using the wrong limiter (e.g. Returning only Acrobat pdf files) could result in a small sample that nonetheless appears to include everything. The high levels of "never" reported by the participants suggest that many of their searches would end up with so many returns that the information would be overwhelmed.

TABLE 8

Internet Search Results Retrieved April 16, 2004 using Google.com

Search Terms Used	**Returns for viewing**	**Changes made to search terms**	**Explanation of Search returns**
Crime	22.0 million		Education could be anywhere or no where on this site
Education	12.8 million		Crime could be anywhere or no where on this site
Crime Education	4.64 million	First combined search	Both terms appear somewhere on this site.
"crime education"	.03 Million	Subtracts 4.34 million sites from the first combined search	Both terms appear beside each other
Crime "AND" Education	4.84 million	Adds .2 million sites to the previous search	Both terms are present somewhere
Crime "NOT" Education	9.1 million	Adds 4.46 million sites to the previous	Education is not on this site
Crime education (PDF file)	.68 million	Subtracts 3.956 million sites from previous search	Smaller more accurate sample but still very large

Question 8

Ninety-six participants completed this question. 50% of the participants rated "learning more about the Internet" as being "very important". 41% of the participants rated "learning more about the Internet" as "important". The participants' responses suggests that they do see the value of the Internet in the workplace.

Participants Comments

Thirty-six participants provided comments. Some of the comments were incorporated in the analysis of questions one through seven. The remaining comments focused on two areas: training linked to the workplace environment and how to determine quality of the information.

Eight participants referred to the need for more training and recognized a need to be taught about resources that could be used in the workplace. One participant stated "obviously I need to learn more" and another participant commented on how the "computer use and applications will be a necessity and not an option".

Six participants discussed their perceptions of the information on the Internet. They described information on the

Internet as not "reliable-sourced" [sic] and "unregulated source" [sic]. Police officers attending Royal Roads Master of Arts in Leadership and Training (Specializing in Justice and Public Safety) also discussed their concern about document validity (see literature review "Information Environment" and Tables 4 and 5).

Study Conclusions

This survey clearly suggests that police officers have a limited understanding of the online tools and search strategies available to them. They are also frustrated with their searches and search results, and they feel that their computer training was not adequate. Underscoring all of this is the fact that participants' comfort levels decreased when they moved from consulting with peers and supervisors to conducting electronic searches. Furthermore, some participants expressed concern about how to evaluate the information and the information sources they discover.

The data suggests that many participants may not realize that they are missing out on the vast array of resources on the Internet. The fact that police officers reported that they never used Boolean search strategies or did not search for reference materials to identify headings suggest that the quality of the information being retrieved is questionable. The lack of references to external expert resources also suggests police

officers are not aware of the expertise that is available to them. A final indication of their awareness is their reliance on InfoWeb.

The reliance on InfoWeb suggests that police officers are most comfortable when they can find familiar reference points and language that already has established connections to their workplace. This "familiarity" presents some challenges to learning organization and knowledge management models.

Senge (1990) describes a learning organization as one "that is continually expanding its capacity to create its future" (p. 14). And here is where the contradiction may exist. How can an organization continually grow when its employees feel most comfortable with familiar reference points and language?

There are also challenges if we look at the area of knowledge management. Knowledge management, referring back to the original definition provided (see Chapter 1 and Appendix E), will succeed only if police officers are able to connect online knowledge with their day-to-day activities.

The findings of this research suggest that police officers need to be able to understand that there are resources beyond

InfoWeb and that they need to become comfortable using these resources to support their day-to-day activities.

Participants identified minimal awareness of a wide range of resources that are found on the Internet. Given police officers' concerns about the lack of reliably-sourced information (see Participants Comments section above), it seems likely that they are not accessing the online resources that could make valuable contributions to their work. This may be because participants are not able to conduct their information searches effectively because they "never" use Boolean search techniques. Boolean search techniques help limit the amount of information that is collected and one result of not using these techniques may well be information overload. In the end participants become discouraged about their search results because they are overloaded with sites and they then resort to limiting themselves to what is tried and proven.

The research findings of Binarius Research Group (BRG) support my observation that police officers rely heavily on InfoWeb. BRG was asked by the National Communication Services Directorate (RCMP) "to conduct research into corporate communications to determine how it might be improved to meet the needs of the RCMP" (Binarius, 2004, p. i). A number of findings, recommendations, and comments by participants in the Binarius

study regarding InfoWeb add further insights are included in the Study Recommendations (below).

Study Recommendations

These study recommendations were drafted in consultation with the Sponsor NCO i/c S/Sgt Len Hall in order to ensure that the recommendations would be achievable, formatted to RCMP training guidelines, and would be linked to police officer duties. During the consultation, the format of the recommendations was determined, training guidelines were identified, and the focus of the recommendations was clarified.

The recommendations that were drafted provide a training strategy for police officers to acquire the information seeking skills necessary for conducting research. Police officers learn new skills for front line duties, qualify for transfers to other sections or disciplines within the RCMP and qualify for promotions as a result of attending and successfully completing mandatory training, continuous professional development programs, and attending distance learning or online learning courses.

The literature suggests that linking information seeking skills and information literacy to teaching and learning strategies will assist adult learners to manage the electronic environment. It is reasonable to believe that the same results

would be achieved with police officers. As police officers learn how to trust their search strategies and gain proficiency in their skills, they should be much more able to use those skills in the workplace.

Recommendation One - Information Seeking Skills

Questions 1, 2, 6, and 7 are addressed by this recommendation. Training time needs to be incorporated into existing workshops and training programs. BRG participants requested "better training for RMs [regular members] on the use of the InfoWeb and how to find information" (Binarius, 2004, § 3.2 Recommendations). Training would need to be consistent with the RCMP's draft Instructional Design Guidelines. (RCMP, 2004c, p. 1). The guidelines include

1) Conducting a **needs assessment** to identify gaps between current results and desired outcomes (p. 7),
2) Determining the **goals of the program** by identifying what skills or competencies a learner is going to study (p. 10),
3) Identifying **program objectives** by determining what behaviors learners will display at the end of the program(p. 11),
4) Determining the **criteria of success** by establishing benchmarks, or tasks to be completed (p. 14),

5) Identifying **instructional strategies** such as direct instruction, interactive learning, and indirect learning. (p. 16),
6) Determining what **instructional materials and delivery methods** will be most appropriate. Materials may include computers, multimedia facilities, access to online library collections, or video recorders. Delivery methods may be online, face to face in the classroom or direct instruction at the workplace (p. 18),
7) Developing **learner assessment tools** which may include true or false questionnaires, progress charts, case studies, or self assessment (p. 19),
8) Conducting a **formative evaluation** of the program to see what is working or not working and identifying areas for improvement (p. 23), and
9) Conducting a **summative evaluation** of the program to determine the value of the program relative the needs of the organization (p. 24).

Recommendations 1 and 2 use the RCMP Instructional Design Guideline as a framework. Recommendation 1 is that police officers be taught information seeking skills. In order to teach these skills the following steps need to be followed.

1) **Needs Assessment**: Use a pre-test of information searching skills of police officers attending online learning and post secondary studies.

2) **Goals for the Program:** Provide police officers with rudimentary search skills and a better understanding of the nature of the electronic environment.

3) **Program Objectives/Outcomes:** Improve police officer's awareness of subject specific bibliographies and the information quality measures as outlined by Kahn, Strong and Wang (2002).

4) **Criteria for Success**: Police officers would self report lower levels of frustration when working in online environments, they would learn to identify quality sites as well as sites that could be useful, using help menus of two or three new law enforcement databases.

5) **Instructional Strategies:** Material would be presented using directed instruction, as well as interactive learning.

6) **Instructional Materials and Delivery Method:** Use multimedia presentations in computer labs in face to face settings and in workplace settings. Training will require a computer lab

with Internet access as well as and InfoWeb access. The training session would be four to six hours in length and would include conducting searches on specific student generated questions. Topics covered in the session would be Boolean strategies, the electronic information environment, and a brief exploration of justice web pages located on the InfoWeb.

7) **Learner Assessment Tools:** Learners will be asked to complete, an assignment using proper citations and references, and incorporate quality information into their studies. In this way they would demonstrate the ability to "make a proper choice of material [by learning] to think differently" (LeBeuf, 2000, p. 4). Police officers will be asked to design and carry out searches using advanced menus and Boolean terms.

8) **Formative Evaluation:** Every three months participants will be followed to see what knowledge they have retained and whether they need further support.

9) **Summative Evaluation:** Annually, the year's formative evaluations will be collected and reviewed.

Recommendation Two - Information Search Patterns

Participants self-reported a limited number of external resources during this research. The Binarius research discovered that many participants had to "learn where to look for a subject…, since the search function and organizational logic of the various systems was not effective or efficient" (Binarius, 2004, § 1.2 Major Themes). Participants would benefit from being taught how information is organized in the various electronic sources and the value of using electronic resources tools to conduct searches. One way to do this would be to develop an online module that showed police officers how to conduct a search of specific topics being studied by police officers. In order to conduct these searches, the following steps would be done;

1) Conduct a **Needs Assessment** to identify current research topics of participants, and identify the level of awareness of public information resources (see Appendix D) that are relevant to their needs.

2) Establish the **Goals for the Program** to include detailed evaluation of sources of information and the documents that are retrieved during the search.

3) Identify **Program Objectives/Outcomes** to include libraries, private collections, indexes, classification schemes, and

other cataloging and indexing processes as part of the search strategy.

4) Establish the **Criteria for Success** that would have police officers construct a mind map of the external and internal resources available to them and the inter-connected relationship of these resources. This would act as an introduction to maps and mind maps as a means of keeping track of information, terminology, and connections between sources.

5) Establish **Instructional Strategies** to include face to face instruction and online self directed learning.

6) Create **Instructional Materials and Delivery Methods** including conference calling, reserving computer lab time, and creating online programs as delivery methods. Design and distribute reference material and handouts that link the concept of knowledge map and mind map models to day-to-day policing.

7) Create **Learner Assessment Tools** that require a hard copy of a search strategy results as well as a printout of various sites related to the specific assignment topic. This

information would be required for node of a mind map or knowledge map.

8) **Formative Evaluation:** Every three months participants will be followed to see what knowledge they have retained and whether they need further support.

9) **Summative Evaluation:** Annually, the year's formative evaluations will be collected and reviewed.

Creating this second learning opportunity addresses Questions 3, 4, and 5 of the survey. If police officers learn these skills their confidence levels, and self described experiences should improve.

The purpose of these learning opportunities is to improve police officers' information gathering skills, so that they can better manage their information and also develop a better understanding of their electronic environment. If these are goals of the RCMP wants to achieve they need to give serious consideration to implementing these recommendations.

Recommendation Three - Knowledge Maps of InfoWeb

The purpose of this recommendation is to help police officers utilize InfoWeb to its full capacity. Binarius

participants recognized that it [InfoWeb} "constituted a wealth of information and the 'everything (one might want to know) [was] probably there" (Binarius, 2004, § 3.1 Findings).

If Binarius participants had this much confidence in the knowledge on InfoWeb, and given that participants' in this thesis overwhelmingly used InfoWeb, then a knowledge map using InfoWeb should be a good start for employees to learn to develop a knowledge management strategy. In the Binarius (2004) survey findings, participants suggested they would find a "map of the structure of the site" (§ 3.2 Recommendations) useful.

However, one of the problems that might be encountered in mapping InfoWeb is that the links in InfoWeb might need to be changed and updated to reflect current RCMP strategic plans and business lines. Therefore, this recommendation requires further analysis to determine the redesign implications.

Further discussions are necessary with front line police officers to identify what knowledge they need on InfoWeb. That knowledge will differ depending on their posting: e.g. rural community, urban community, homicide, robbery, violent crimes, or theft.

Finally, this recommendation also includes actively consulting with police forces that are currently using knowledge management practices. These include Tucson Police Department's Coplink at http://ai.bpa.arizona.edu/COPLINK/, and a United Kingdom corporation, Salamander at http://www.tsorg.com/, who is currently working with UK police forces. Both organizations have implemented knowledge management strategies and conducted research directly related to police officers duties at the front line.

CHAPTER FIVE - RESEARCH IMPLICATIONS

Organizational Implementation

This research was conducted to identify the current comfort and confidence levels of police officers using the Internet at work. Based on the data collected and conclusions drawn (Chapter 3), a series of recommendations were developed. Those recommendations (Chapter 4) can be implemented only with support from senior levels of the RCMP.

Implementation of the recommendations could be achieved by contracting with internal and external personnel to

1) Teach online searching strategies
2) Facilitate knowledge mapping exercises
3) Facilitate the redesign of InfoWeb based on the operational needs of intelligence led policing, supporting specific corporate strategies, operational business lines, and knowledge maps.

By implementing these recommendations police officers would be able to develop a set of tools to support them when they are using the online learning resources that are being made available by the RCMP and, they would become better able to find their information that would contribute to their own professional development. For the RCMP as an organization, these

recommendations identify areas where police officers may need new skills if they are to be able to utilize the electronic environment effectively. Implementing these recommendations will result in police officers developing a better understanding of the full benefits of the internet at work and being better able to access and appreciate the quality of information that may be generated using the intelligence led model. Finally, the RCMP may be able to identify and support the supervisors and peers that many participants identified as their first choice when seeking information.

Future Research

This research attempted to contribute to the understanding of information seeking behavior of police officers. While conducting this research, other questions of possible value and interest became evident;

1) What is the current use of knowledge management in law enforcement? Understanding the current state of knowledge management practices may help the RCMP shorten implementation times, or not have to re-invent the process already inplace. Are there potential applications that can reduce frustration, increase information value and

contribute directly to more effective operations?

2) What online resources do police officers need that can be immediately used in the community they serve? What online resources and networks do investigators need during their investigations? Understanding these needs may help to shape the delivery of the information and enable police officers to integrate online resources into their day-to-day operations.

3) What are police officers expectations of technology when conducting investigations? Understanding the expectations of police officers may provide further insights into the way information is presented.

4) How do police officers organize their information environment; filing cabinets, desktop computers, laptops, file structure on hard drives, etc.? Developing a better understanding of the how police officers organize information may provide information technology and information management personnel insights into developing a language and filing format that can be used by police officers.

CHAPTER SIX - LESSONS LEARNED

Research Project Lessons Learned

The following lessons were learned.

An information audit and knowledge audit would have provided some insights into the different electronic environments that police officers search in. The audit would also have provided clarity for developing survey questions.

Surveys are excellent tools; however, while good data was collected, the matrix question should have been limited to Boolean strategies. The other questions could have been answered in a check list format.

The logistical issues of copyright permissions, correspondence between researchers, and sponsors needed to be carefully planned to ensure that the optimum amount of information was processed and decisions were made in a timely manner.

Meetings with Project Advisor Mr. David Jones, Director of Knowledge Management were instrumental in keeping this project focused and linked to day-to-day issues. He was able to provide resources and facilitate access to InfoWeb under the supervision of a RCMP employee.

Meetings with the Project Sponsor NCO i/c Staff Sergeant Len Hall also kept the project linked to the front line. The research could have taken any one of a number of different directions, but, he kept the focus on the police officer at the front line, which is what this research was intended to do.

Recognizing the complexity of conducting this research challenged me to keep focused on the research question and to find solutions that were plausible and achievable. While conducting this research I discovered that there were more connections to be made and, more ideas to explore than I could have possibly imagined.

In conclusion, this research provides some insights into information seeking behavior of police officers using the internet in the workplace. Police officers do use the internet and InfoWeb to find information. When searching for information they are comfortable seeking out peers and supervisors and do have the ability to search for information. As the RCMP uses technology to deliver information, police officers will need information seeking skills necessary to navigate through the information environment. Using these skills, police officers can master the wizardry of technology and reap the benefits of accessing information effectively and efficiently.

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APPENDIX A - CONSENT LETTER & SURVEY

RESEARCH CONSENT FORM

This research project is part of the requirement for a Master of Arts in Leadership and Training.

The student concerned is Patrick Neal. Mr. Neal's credentials with Royal Roads University can be established by telephoning either Dr. Gerry Nixon, Dean of, Royal Roads University at (XXX) XXX-XXXX or Mr. David Jones, Director Knowledge Management, Strategic Policy & Planning, R.C.M.P. (XXX) XXX-XXXX.

This document constitutes an agreement to take part in a research program, the objective of which is to develop a better understanding of information seeking behavior of police officers.

The research will consist of one survey which will take approximately 20 minutes to complete. The questions explore information seeking skills, attitude about the Internet, and where police officers look for information when conducting work related research.

Information collected from the survey will be summarized and analyzed for trends, perceptions and, search patterns when using the Internet. Final copies of the thesis will be housed at Royal Roads University Library (publicly accessible) and Royal Canadian Mounted Police Research and Development Unit at Pacific Region Training Centre in Chilliwack.

The survey consists of

- demographic information, Note: the consent form information will not form part of the analysis
- Questions 1 - 4 explores how you perceive the Internet as a resource at work. Questions 5 - 8 explores your search strategies using the Internet at work.

This survey is voluntary and requires approximately 20 minutes of your time. If you choose to participate you are free to withdraw at any time. All information gathered through this research project is confidential including names of participants and those who have been asked, but refused to participate.

By signing this letter, the individual gives free and informed consent to participating in this project.

Name: (Please Print):

_____

Signed: _____

Date: _____

In advance, thank you for participating in this research. This research, which explores your information seeking patterns will help

identify what skills and competencies you need to navigate and best use the Internet resources that you currently access. Should you have any comments or questions about this survey, please email me at xxxxx@xx.xxx.xx If I have missed something that you believe will contribute to this research please add your comments at the end of the survey.

Could you please tell me something about yourself.

a) What organization do you work for?

____ RCMP - Which Detachment/Unit

____ OTHER POLICE SERVICE -

____Other Law Enforcement Agency (Customs, Corrections, etc)

____ Other Organizations - Federal

____Other Organizations - Provincial

____Other Organizations - International

____None of the above (please specify) _____

b) What is your current level of education and when did you graduate?

c) How old are you? _____

d) How many years of service do you have in a law enforcement / security organization _____

e) What is your current rank/title?_____

f) Are you civilian employee

g) Are you a sworn Peace Officer

For RRU MALT JPSL 2002 Cohort Only
Question 1.

Have you used any of the Boolean search terms (AND, NOT, OR, NEAR) skills from the Summer Residency 2003 to conduct work related Internet searches?

Search Skills YES_____ NO_____
If Yes, which ones
If Yes, what were the subjects you searched for_____

Question 2.

Have you used any of the Search Strategies (truncation, quotes, parenthesis) from the Summer Residency 2003 to conduct work related Internet searches?
Search Strategies YES_____ NO_____
If YES, which ones
If YES, did you get better results

Question 3.

In your words, what are the differences or similarities you see when searching for electronic information at work and at school.
Some Examples might be:

EX 1. At work I find information is too hard to locate because I don't know what I am looking for, while at school I have a specific topic I am searching for and I know where to look.

EX 2. I have plenty of time at work to look for information, but at school I am restricted by course due dates.

Questions 1 - 4

1. Please indicate your comfort level with the listed information seeking skills.

	Very Comfortable	Comfortable	Undecided/ Neutral	Uncomfortable	Very Uncomfortable
Identify questions based on information needs					
Identifying potential sources of information					
Developing successful search strategies					
Accessing computer based sources of information					
Evaluating information from Internet resources					
Organizing electronic information for practical application					
Integrating new information into an existing body of knowledge					
Using information in critical thinking and problem solving					

2. You have been asked to conduct research trends on Youth and Violence because it is a growing problem. In what order would you perform these steps. (1–the first step; 2–the second step, et; use 0 if you would not take a particular step)

____ Browse a current printed magazine index

____ Browse the most recent issue of an education journal

____Search the Internet using keywords "violence" and "high schools"

____Look at reference material that provides an overview of violence and teenagers

____Brainstorm the concept, using the terms in the topic

____ Formulate questions based on the information needed to begin the research

____ Search subject-based and other related databases

____Search using another search string: please specify_____

3. Which of the following best describes your experience using the Internet to find work related information?

____Whenever I use the Internet, I find what I want.

____I can usually find what I want, but there are frustrations.

____ I find what I want only with difficulty

____I generally avoid the Internet, preferring to use my contacts with peers and supervisors.

Other: _____

4. Please indicate how you first learned to use the Internet. Please select one of the following:

____I learned to use the Internet on my own.

____I learned to use the Internet at the public library.

____I learned to use the Internet as a police officer.

____I learned to use the Internet in college: Which Year____1st ____2nd ____3rd ____4th

____I learned to use the Internet in University Which Year____1st ____2nd ____3rd ____4th

5. How comfortable/confident do you feel when seeking information from:

	Very Comfortable	Comfortable	Undecided/Neutral	Uncomfortable	Very Uncomfortable
An Internet search engine e.g. Google					
Which Internet search engine do you use? ____					
A Criminal Justice Web page Can you name which ones are best?					
A friend					
A supervisor					
A Web Site recommended by a Professor or class mate.					
Browsing the Internet using specific search terms.					
The library, Which One?					
Other (please give example of source used: ____					

6. For each topic; RCMP/Organization's Policy and Procedures, Community Policing, Crime Prevention, Commercial Crime Investigations, and Future of Policing, where would you go to find information? Please select all that apply.

	Agency's Policy & Procedures	Community Policing	Crime Prevention	Commercial Crime Investigations	Future of Policing
Use					

Internet search engine					
Ask a peer.					
Ask a supervisor					
Use a Law Enforcement Web Site (Please indicate which one)					
Public Library					
University Library (Which one)					
Go to another Section/Unit (Which one)					

7. When conducting research in electronic databases, how often do you use the following searching techniques?

	Freq.	Sometimes	Never	Don't Know
Truncation (Search using * or $ as the last letter(s) of word, , child*)				
Boolean operator "AND" (, crime AND evidence)				
Boolean operator "OR" (, criminals OR federal offenders)				
Boolean operator "NOT" (, policing NOT private policing)				
Limiters (Limit search by date, publisher, language,type of material)				
Proximity operators "NEAR", "BETWEEN" (forensic NEAR investigations)				
Cross and multiple field searching (Search more than one field at a time, such as publisher, journal title, author, descriptors, et)				
Use the databases descriptors or some other controlled vocabulary				

8. How important is it to you to learn more about the Internet?

____Very Important

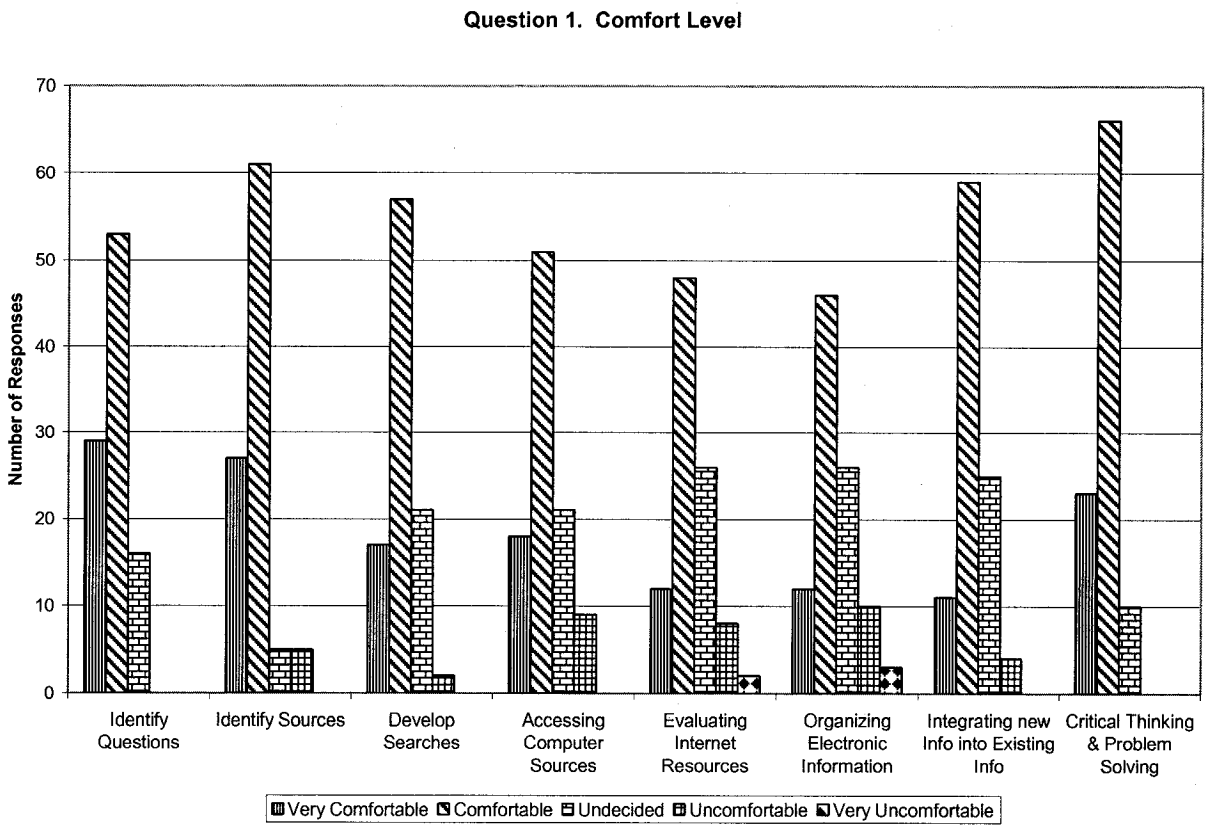
____ Important

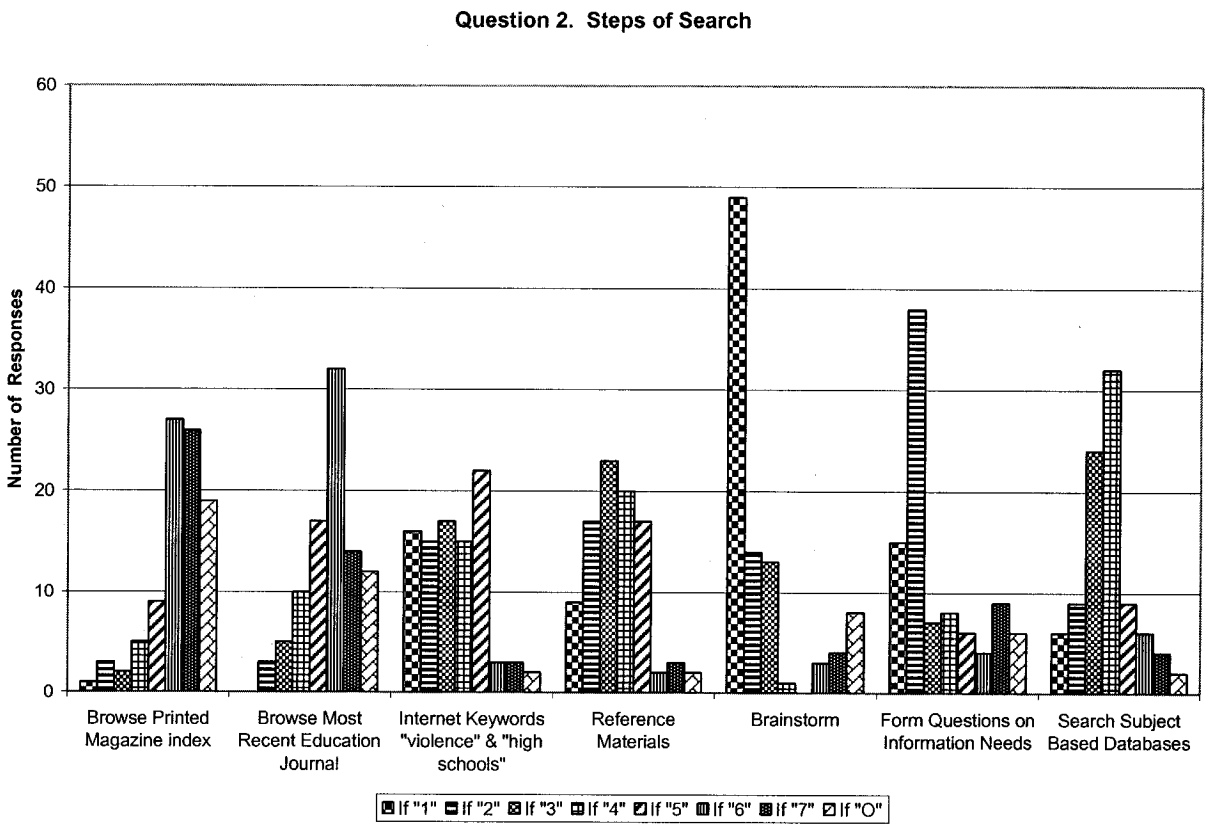
____Not Important

____Don't Know

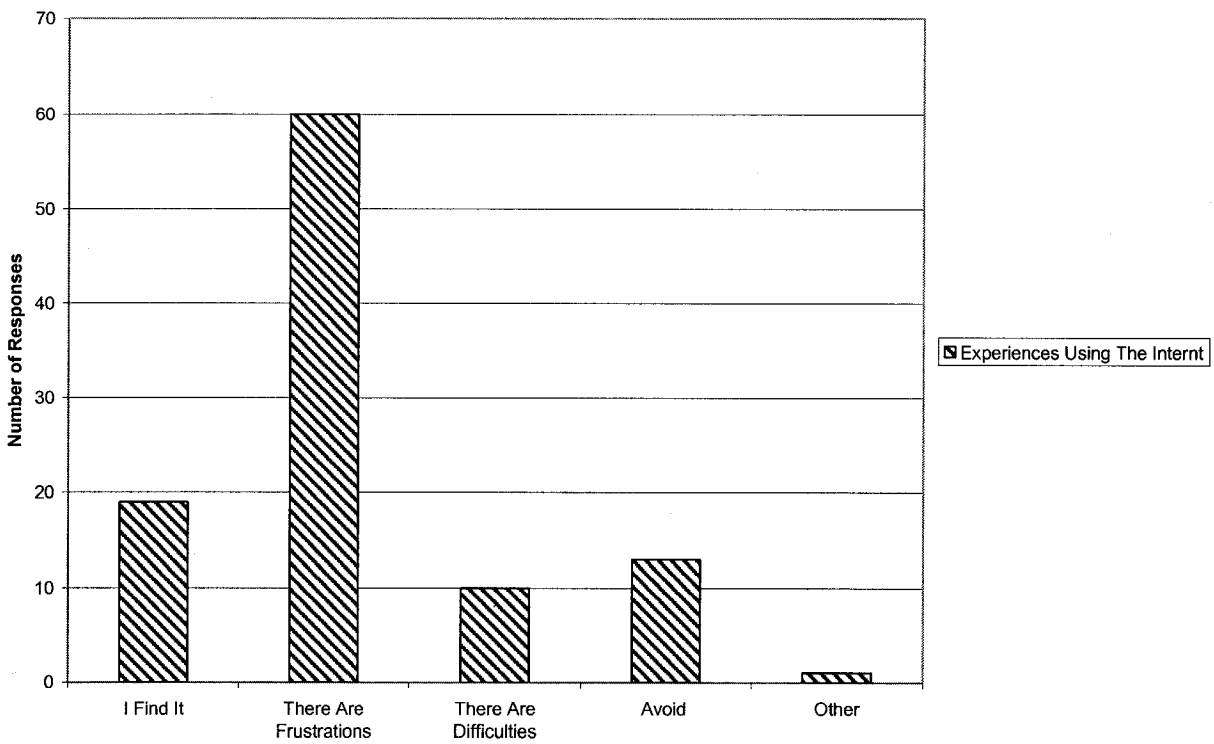
If you have any other comments please add them here. Thank you.

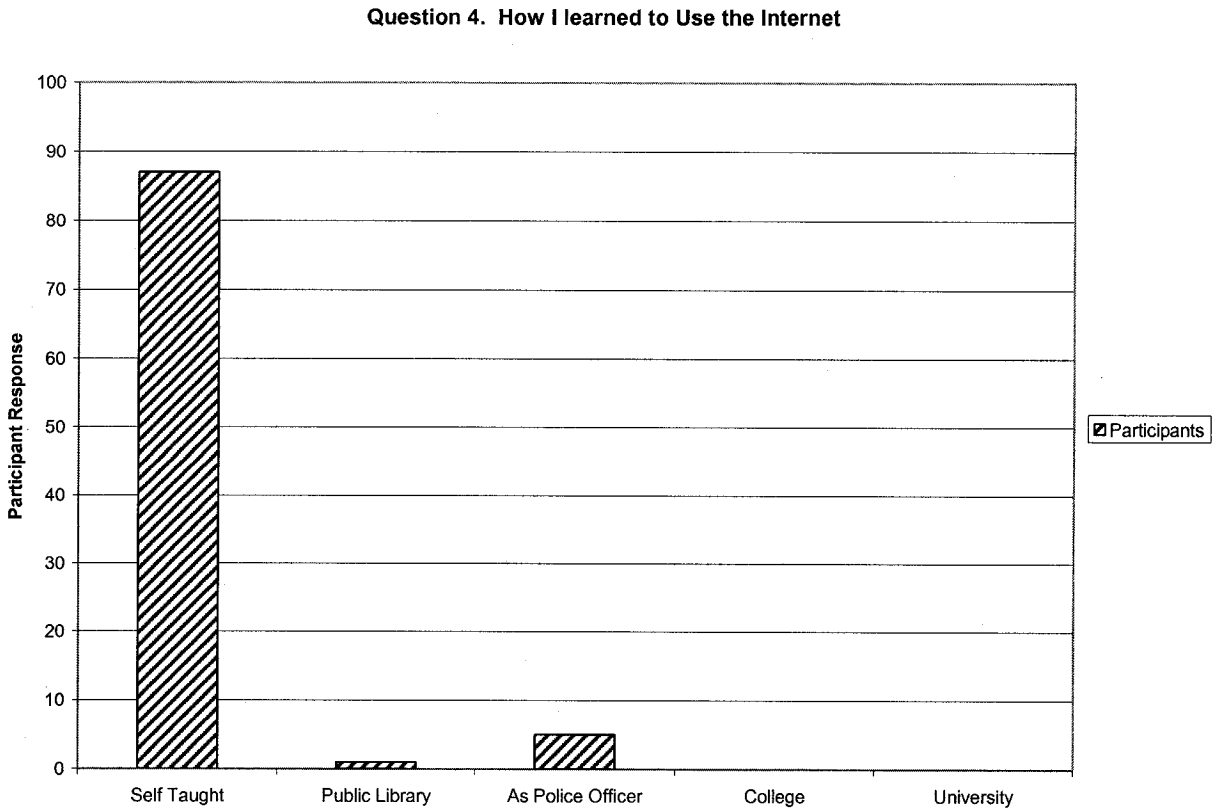
APPENDIX B - CHARTS OF SURVEY QUESTIONS 1 TO 7



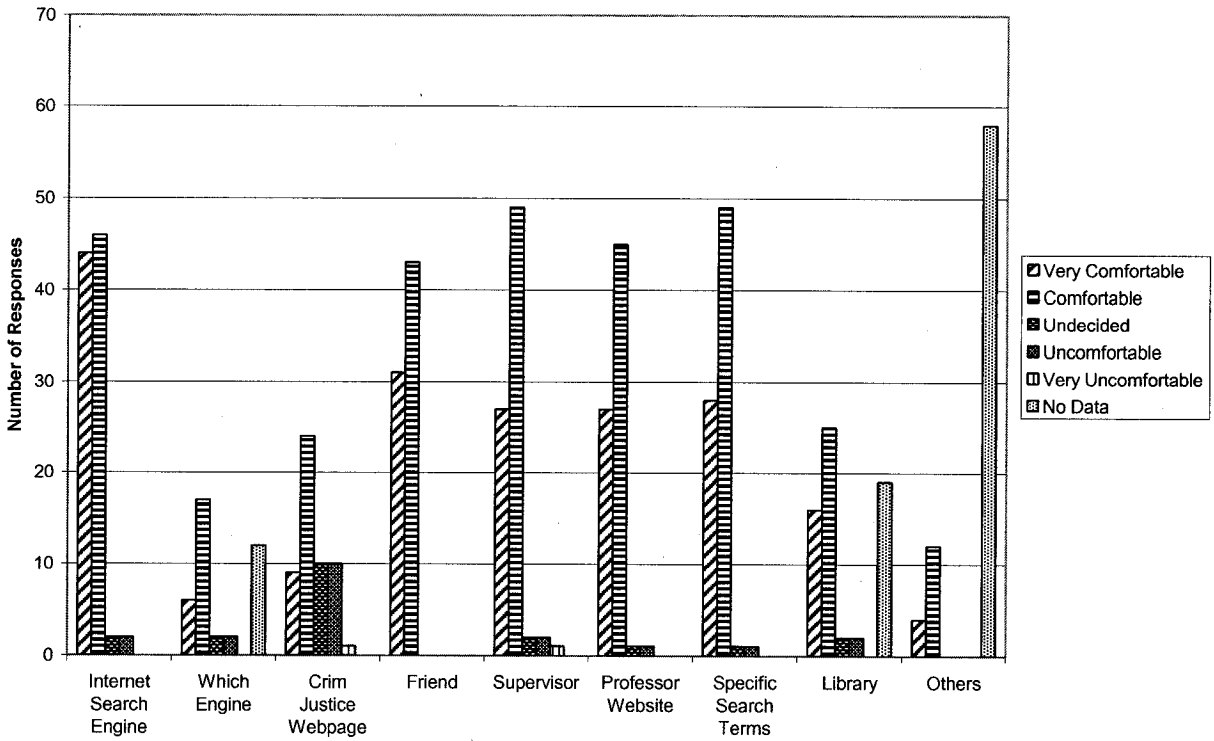

Question 2. Steps of Search
Number of Responses
60
50
40
30
20
10
0
Browse Printed Magazine index
Browse Most Recent Education Journal
Internet Keywords "violence" & "high schools"
Reference Materials
Brainstorm
Form Questions on Information Needs
Search Subject Based Databases
If "1"
If "2"
If "3"
If "4"
If "5"
If "6"
If "7"
If "O"

Question 3. Participants Self Described Experiences Using the Internet

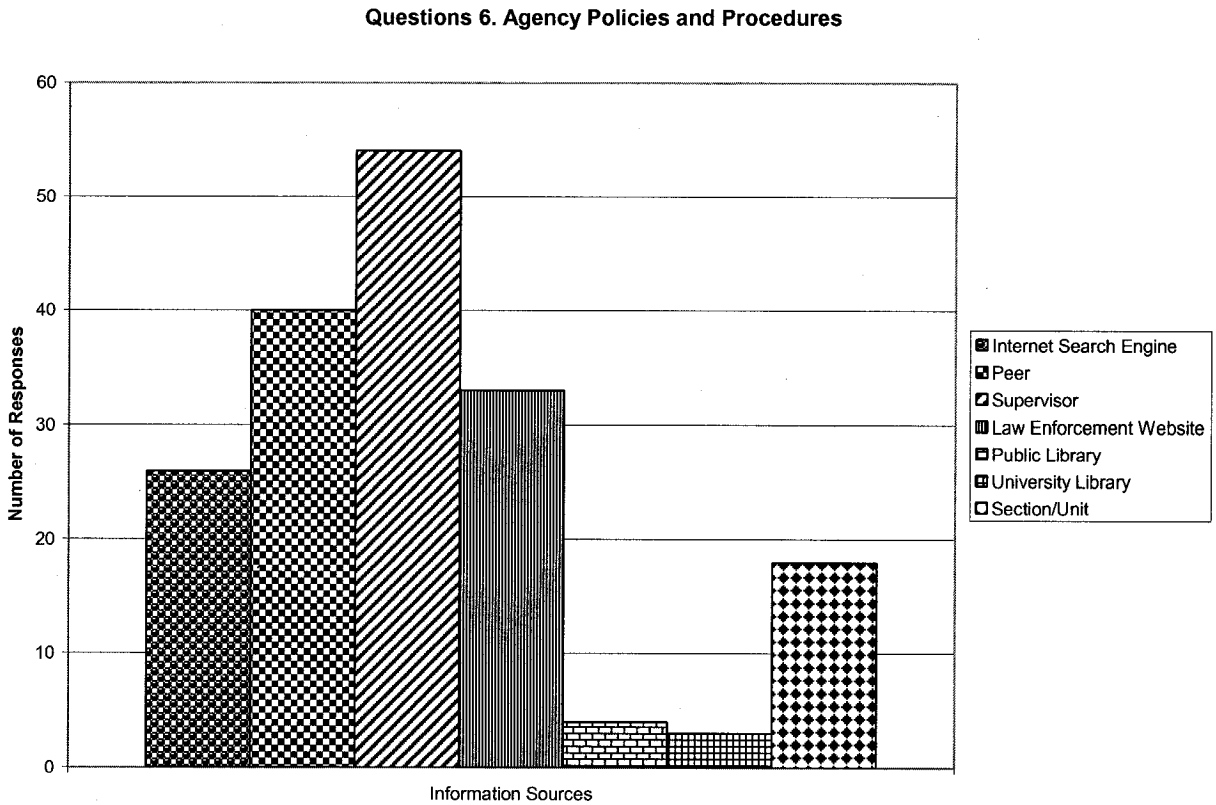


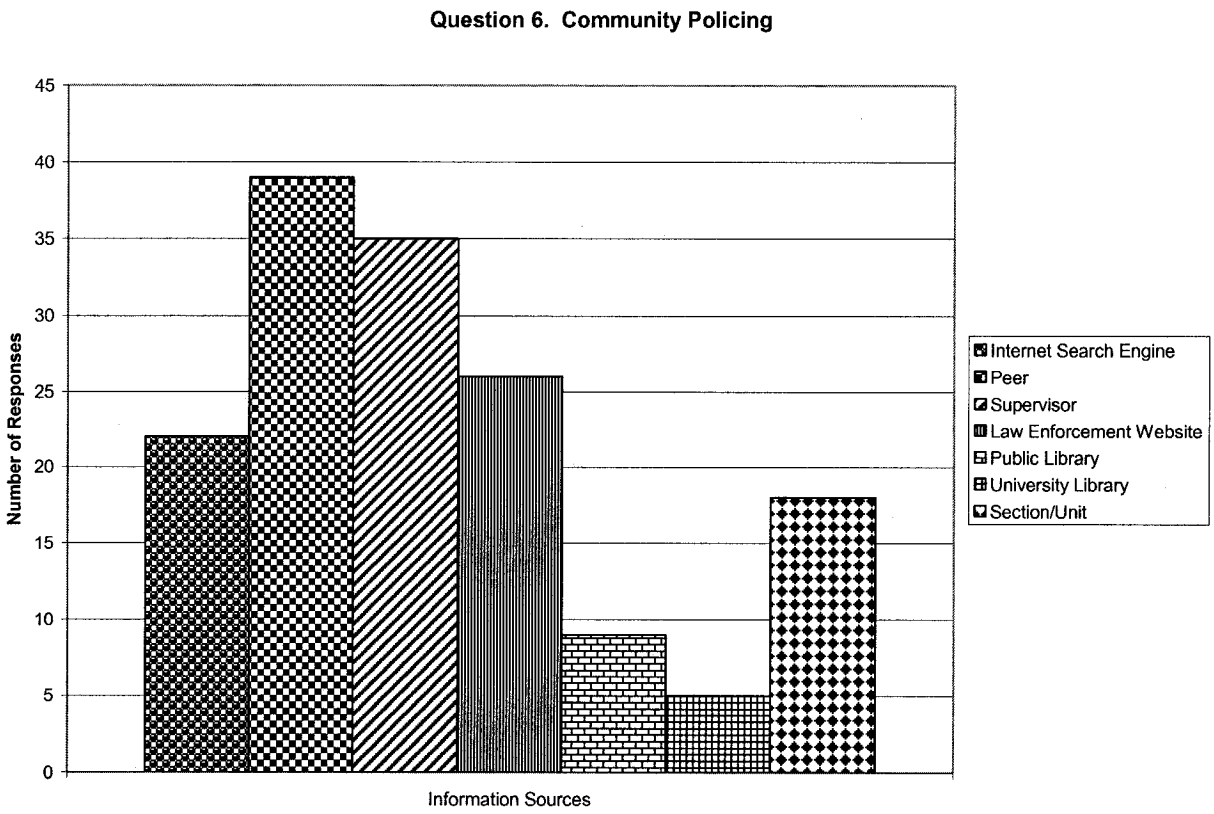

Question 4. How I learned to Use the Internet
Participant Response
100
90
80
70
60
50
40
30
20
10
0
Self Taught
Public Library
As Police Officer
College
University
Participants

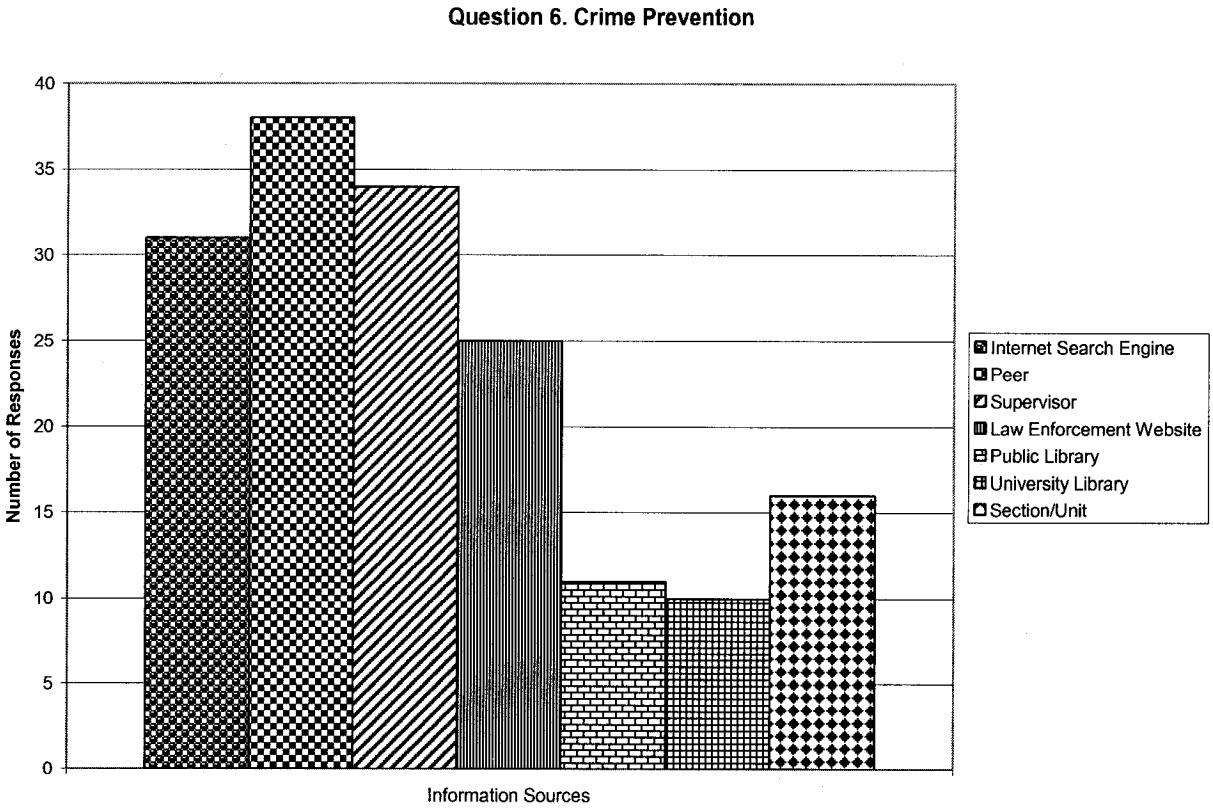
Question 5. Confidence Levels When Seeking Information

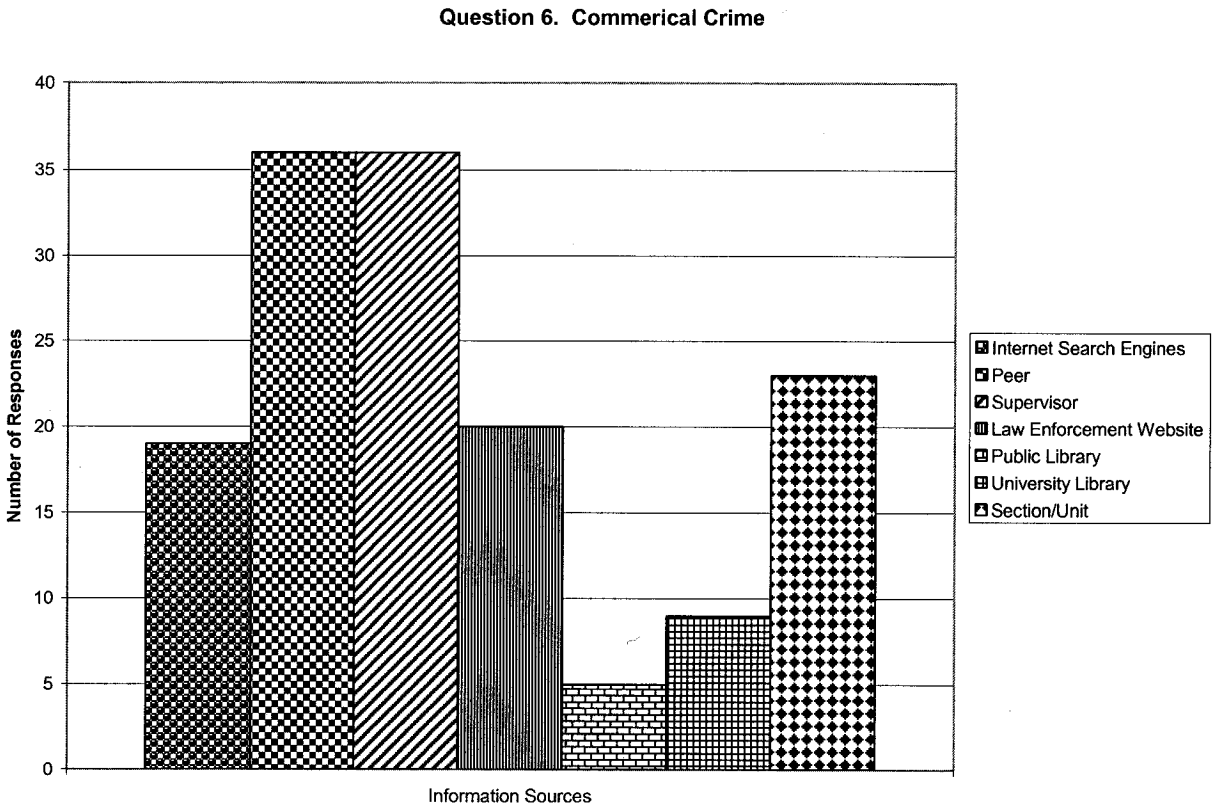


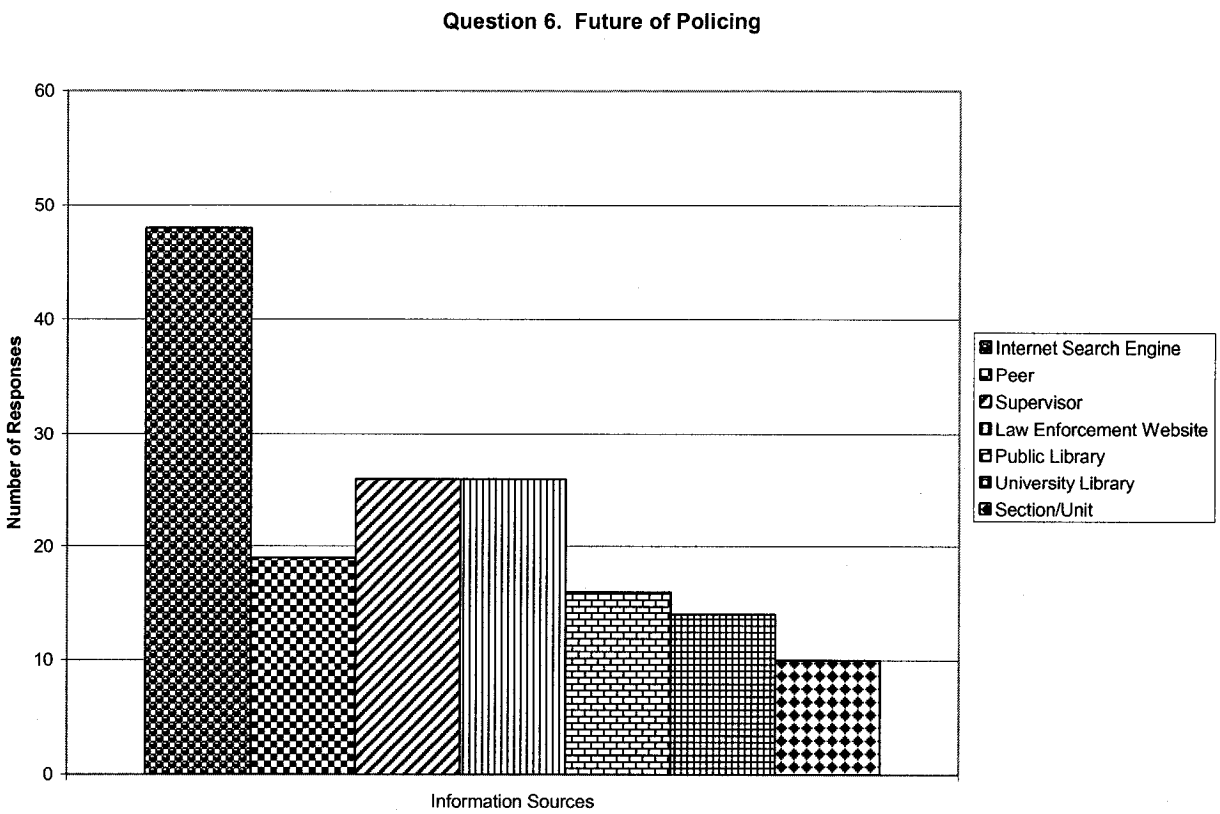
Question 6 has five columns that asked participants to identify where they would look for information. Each column's data is presented in a separate chart.



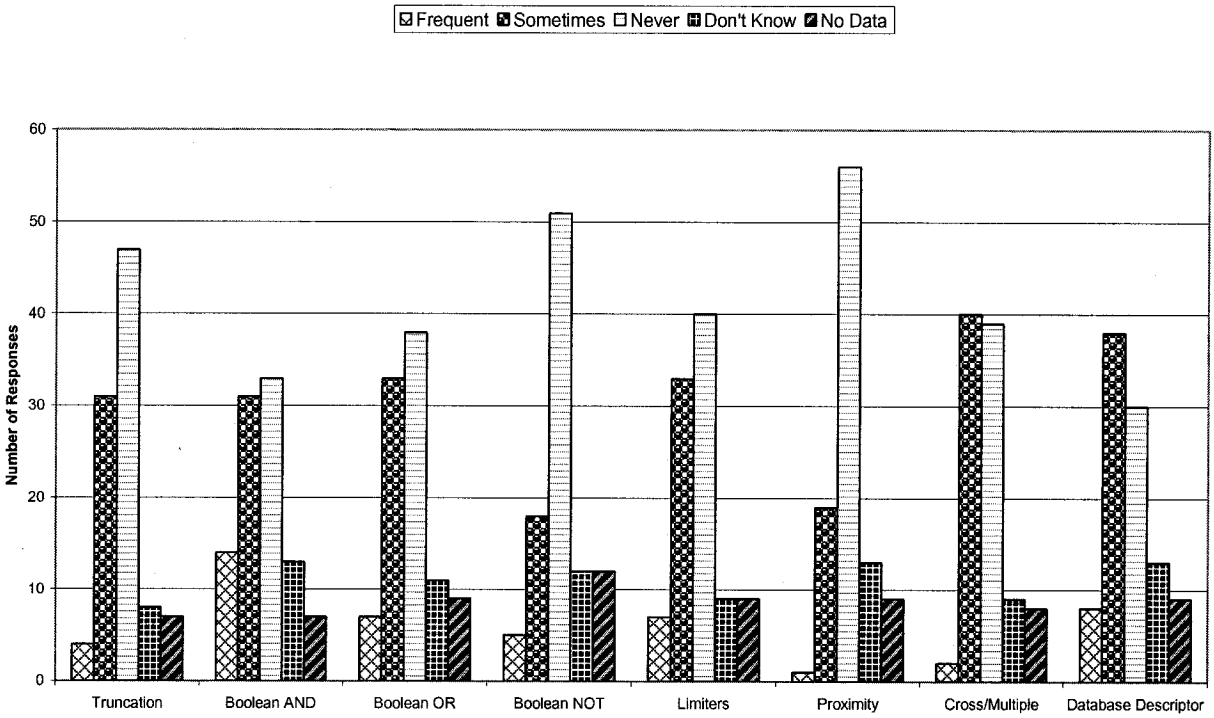

Question 6. Community Policing
Number of Responses
45
40
35
30
25
20
15
10
5
0
Information Sources
Internet Search Engine
Peer
Supervisor
Law Enforcement Website
Public Library
University Library
Section/Unit

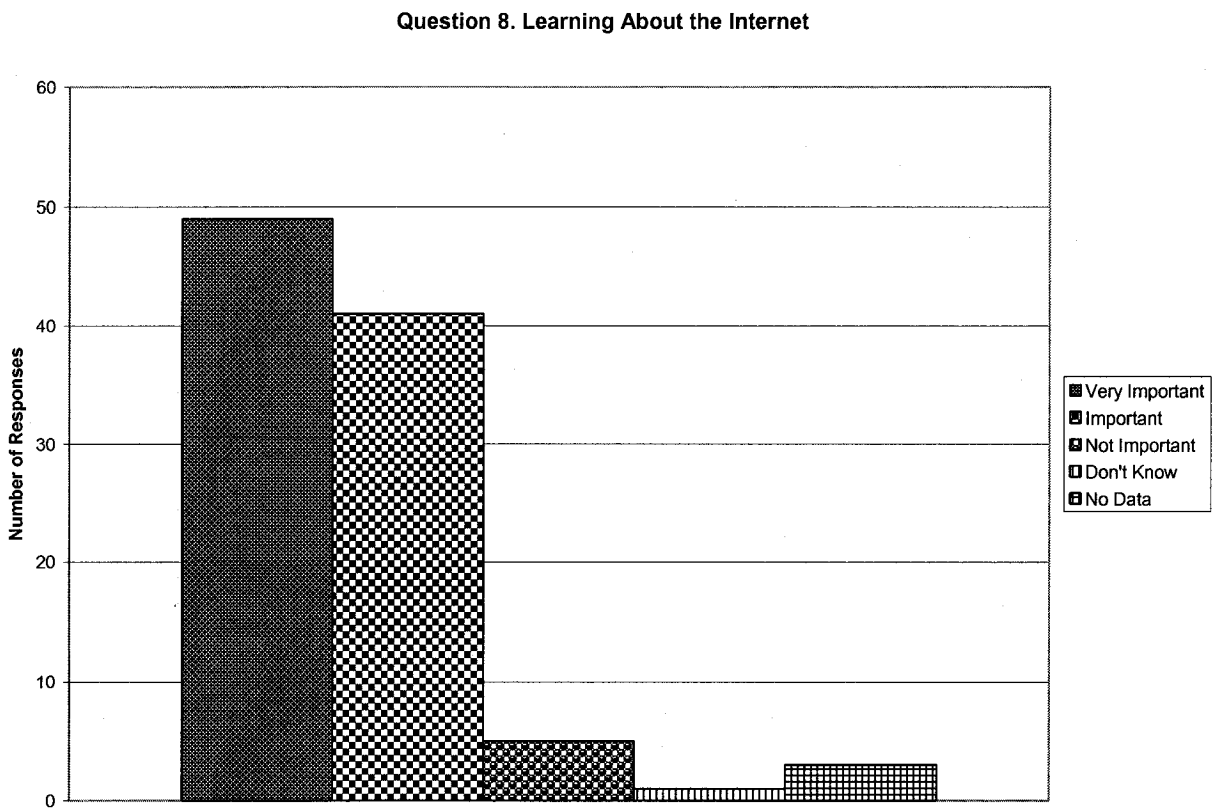

Question 6. Crime Prevention
Number of Responses
40
35
30
25
20
15
10
5
0
Information Sources
Internet Search Engine
Peer
Supervisor
Law Enforcement Website
Public Library
University Library
Section/Unit


Question 6. Commerical Crime
Number of Responses
40
35
30
25
20
15
10
5
0
Information Sources
Internet Search Engines
Peer
Supervisor
Law Enforcement Website
Public Library
University Library
Section/Unit


Question 6. Future of Policing
60
50
40
30
20
10
0
Number of Responses
Information Sources
Internet Search Engine
Peer
Supervisor
Law Enforcement Website
Public Library
University Library
Section/Unit

Question 7. Boolean Search Techniques




Question 8. Learning About the Internet
Number of Responses
60
50
40
30
20
10
0
Very Important
Important
Not Important
Don't Know
No Data

APPENDIX C - RCMP CAPRA MODEL

CLIENTS

DEFINITION

The people with whom police interact in the delivery of their service and the people for whom that service is delivered.

IMPORTANCE OF KNOWING YOUR CLIENTS

1. You must know all those who have an interest in the service you provide in order to ensure that their interests are taken into account in how you deliver that service.

2. The better you understand your clients' perspectives, the more quickly and more effectively you can:

a. meet their needs, demands and expectations in terms of service delivery (defining problems, establishing priorities, deployment of personnel, assessing meeting service standards);

b. dissipate potentially violent situations;

c. resolve community problems related to safe communities;

d. generate workable and sustainable preventive action;

e. mobilize the community to assist in achieving safe homes and safe streets.

TYPES OF CLIENTS

Direct Clients

Direct clients are those you interact with at various points in your service delivery or investigations. These would include callers, complainants, witnesses, victims, those affected by the harm done to victims (e.g. family), suspects, prisoners, and community groups. From a community policing perspective, police are expected not simply to ask how these people can help achieve police objectives. Rather, once we view them as clients, we also ask how we as police can best serve their needs in a manner consistent with public interest.

Indirect Clients

Indirect clients are those not directly involved in an incident or its investigation but who have an interest in its outcome either because of the way it was handled or because of the association of the incident to similar incidents. They include taxpayers, the public (public interest is captured in our Constitution), interest groups (e.g. victims' groups, women's groups, cultural groups), other government agencies or departments whose work may be impacted by your own. These clients may never interact with you personally. They, however, represent the public interest and it is in your interest to understand their concerns if you are to successfully address them. They may send letters to the press. They may use incidents, through the press to draw

attention to their concerns. They may represent the public interest to the RCMP as an organization or to other government departments.

Sometimes, indirect clients, such as interest groups, may approach you with a problem which they would like you to assist in resolving. At this point, these would become direct clients as you would be interacting with them directly.

In a sense, police are always serving these "indirect clients" because police represent and serve the law and the public interest values on which the law is based. Thus, the police are serving the people of Canada. What is unique about community policing is that police, in this approach, are taught that the public interest is best understood and served by learning about and working with direct clients, understanding their needs and interests, and those of their community. Sometimes this requires difficult negotiations - particularly when needs and interests appear to be in conflict.

EXPECTATIONS OF CLIENTS OF POLICE

Call for assistance	(e.g. Lost child, highway, traffic report, feeling lonely.) Polite, caring, respectful response. Referral where appropriate and follow-up.
Call to Incident in Progress	Reduce the likelihood of recurrence. Apprehend the suspect. Have the goods returned. Attend to victims.
Call to an Incident After-the-fact	A successful prosecution based on appropriate evidence having been collected according to law and policy.
Interaction with a Suspect/Prisoner	Control to ensure public and police safety. Treatment respectful of human dignity.
Testimony in Court	Concise, objective, honest and accurate testimony to ensure the fair outcome of the trial.
Community Group Call for assistance	Sensitive and full participation in preventive problem solving to arrive at a mutually agreed strategy.

ACQUIRING AND ANALYZING INFORMATION

Importance of Information

Information including evidence is essential to police work; to the apprehension of suspects, to the fair resolution of incidents through the justice system or alternative means .

Sources of Information:

Clients, partners, colleagues and libraries, resource centres, information systems are all sources of information.

PARTNERSHIPS

DEFINITION

Anyone within the organization, other government departments or agencies, or the community, who can assist you to provide better quality service and more timely service.

IMPORTANCE OF ESTABLISHING AND MAINTAINING PARTNERSHIPS:

Establishing and maintaining partnerships on an ongoing basis will:

1. develop trust to ensure that partners are available as required;

2. ensure that you are aware of all the potential partners that do exist so that the best available information or assistance is available to clients as soon as possible;

1. ensure that there are contingency plans in place so that when assistance is required, it is immediately available; and

2. ensure that clients receive assistance and follow-up through volunteers when you have other priorities to attend to.

TYPES OF PARTNERS

Experts Within and Outside the RCMP: doctors, psychiatrists, social workers, psychologists, scientists, lab technicians, dog specialists, firemen, clergy, colleagues with experience or expertise in a particular area, etc.

Community Groups: cultural groups, half way houses, organizations supporting battered women, victims, etc.

Individual Citizens: volunteers, individuals who may be privy to particular information.

RESPONSE

DEFINITION

For every call for assistance or intervention, police have available to them four major types of response strategies:

1. Service

2. Protection

3. Enforcement

4. Prevention

Service:

Assisting the public and referring them to appropriate partners.

Protection:

Protecting the public, victims and those affected by their victimization, in partnership with community agencies and experts.

Enforcement:

In some cases, it is in the public's best interest, in the pursuit of justice objectives, to enforce the law by laying charges and proceeding through the judicial system, so that offenders are held to account.

In other cases you will use **discretion**; that is, you may judge that enforcement is not in the best interest of those concerned and opt not to proceed through the judicial system.

Prevention:

Preventing incidents (offences, accidents or problems from occurring or escalating through intervention, proactive problem solving and education.

PRIMARY POLICE RESPONSIBILITY:

Invariably, your response will, if it is to address all client needs and interests, include elements of several of the response strategies: service, protection, prevention and enforcement. You will need to assess what your primary responsibility is in terms of how public interest is best served in a particular situation. You will need to recognize how this can change over the course of an investigation or incident. Thus, for example, you may build a strategy that gives first focus to protection, shifts to service and then turns to prevention, and if appropriate enforcement. Response strategies do not necessarily flow out of the definition of a problem. They are built up and modified in action, in consultation and partnership with others.

In a given situation, you must continuously ask: "What is my primary responsibility? What course of action would be in the public's best interest? Which client(s) should get priority at various stages of an incident?

ASSESSMENT

DEFINITION

The evaluation of the effectiveness of the service provided in partnership with our clients. The determination of what worked and what did not work, with a view to improving future service. The detection of links or trends that might warrant a broader analysis to determine contributing factors and develop problem solving strategies to address those factors.

IMPORTANCE OF ASSESSMENT

Ongoing monitoring of performance is essential to:

1. continuous improvement of service delivery;
2. control of our future; and
3. detection of patterns for prevention of similar situations.

APPENDIX D - OPEN SOURCE INTELLIGENCE

Open source intelligence (OSI), it is not a new phenomenon. OSI generally includes institutions such as libraries, colleges and universities, research centers and think tanks. The term also refers to information available from these institutions for example journals, books, newspapers, annual reports, and electronic documents. These open sources can be ethically and legally accessed without warrants or other legal mechanisms. (Kahaner, 1996; Simmons, 1993; Bergman, 2001; OSS Group, 1997) The challenge of using open sources is generally the issue of which quantitative and qualitative measures are necessary to ensure that police officers can evaluate the reliability of information. Police agencies using strategies such as intelligence led policing, organized crime and criminal intelligence activities (Gill, 1998; Maguire, 2000; Hahn, Kauffman & Park, 2002) may use these open sources to identify issues and trends as part of their ongoing investigations. Although OSI is new to law enforcement it has an established history in private security services as "industrial espionage", "corporate intelligence" and/or "business intelligence" operations. OSI also is well established in the military intelligence community and peacekeeping operations (Steele 1998; Simmons 1993; Cline 2002).

What is relatively new is first, the impact of the "information explosion" on OSI and second, law enforcement embracing the role of intelligence-led policing as a method of crime control (Gill, 1998; Gill, 1998a; Ford, 2003). One method of addressing this information explosion is to apply existing information quality characteristics used in computer science, and library information science fields. These characteristics include; identifying document traits; accessing Internet resources including the "invisible", "surface" and "deep" resources, and identifying quality indicators such as date, time, place, and source.

The increased attention to the potential contribution of OSI to law enforcement intelligence operations is the increasing integration of military and police services to focus on combating crime, waging war on drugs, and conducting peace enforcement. (Cline, 2002; Jennings & Gaddis, 2003)

At the same time, the quest for OSI can be resource intensive. Internal studies in the private sector noted that "on average, people spend 8 hours per week obtaining, reviewing, and analyzing external information. Ten percent of all users spend over 20 hours per week looking for information" (Curle, 2001, p. 3).

APPENDIX E - KNOWLEDGE MANAGEMENT

Knowledge management as a process is being adopted by the public service to "leverage the vast amount of knowledge that it has - in documents, people and processes" (Public Service Commission, 1998, p. ii). The Public Service Commission (1998) (PSC) is using knowledge management as a strategy for "improving the way it creates and shares its knowledge" (p. 7).

There are two types of knowledge: "Implicit knowledge which resides in the people as mental models, experience and skills, and which is difficult to communicate...[and] explicit knowledge which can be communicated externally and captured in formal models, rules and procedures" (Vail, 1999, p. 16). In the knowledge management process, these two types of knowledge can be used to create a knowledge map.

A knowledge map is a visual display of information and resources that police officers can access. The knowledge map can identify; "locations of organizational memory and experts" (Vail, 1999, p. 17); it can "support student learning strategies" (McCagg & Dansereau, 1991, p. 323); and can identify "vulnerabilities related to critical skills assets" (Cooper, 2003, p. 10). Relative to this research, the use of knowledge maps is one strategy that has the potential to help participants

gain confidence in the InfoWeb, and find internal and experience less frustration in finding external and internal resources. The knowledge map, in reflecting the needs of the police officers and the RCMP would be constructed to reflect the business lines of the organization and discussions with front line personnel.

Knowledge mapping is defined as the "process of associating items of information or knowledge preferably visually, in such a way that the mapping itself also creates additional knowledge. The mapping process itself often creates intellectual capital value through the creation of new knowledge from discovering previously unknown relationships or gaps in expected ones" (Vail, 1999, p. 20).

Procedures (Kim, Suh & Hwang, 2003, p. 38-40) for building a knowledge map include

1) Defining the knowledge,
2) Identifying the specific processes a police officer goes through,
3) Extracting the knowledge through interviews, document reviews and systems usage
4) Identifying the connections between the people, documents, and systems, and
5) Identifying new links, or supporting existing links of knowledge.

The deliverables of a knowledge map are lists of experts, best practice systems, and taxonomies, as well as identification of *existing* communities of practice. For police officers knowledge maps may be the first exercise that will enable them to take control of their information environment and shape the technology that supports their day-to-day plans. At the same time, knowledge management will help the RCMP identify how business lines and strategies are being translated into actions.

APPENDIX F - INTELLIGENCE LED POLICING

Intelligence led policing is not new. As Commissioner Zaccardelli (2003a) observed

> Police work has *always* depended upon a bedrock of information that is gathered, organized and analyzed to create "intelligence". Things have changed, however - our spiral notebook has turned into a computer, the computers are hooked up to each other and central databases, and those databases have now been linked, in our country and even internationally (§ 3).

The earliest references to intelligence led policing occur in reports investigating, in the United Kingdom, rising crime concerns and the subsequent calls for more police actions (Gill, 1999). As a result of this investigation the United Kingdom's National Criminal Intelligence Service (NCIS) adopted intelligence led policing model to achieve the following objectives; (as cited in Ratcliffe, 2003, p. 2).

1. Targeting offenders through overt and covert means,
2. Managing crime and disorder hotspots,
3. Investigating linked series of crimes and incidents, and

4. Applying preventive measures, including working with local partnerships.

In Canada, the City of Burnaby's RCMP has similar objectives using intelligence led policing to identify "specific problems impacting the community [allowing] a targeting approach which yields far greater results than the random enforcement of traditional policing" (RCMP, 2000c, ¶1). It can achieve these objectives by using intelligence led policing to "inform decision making at both tactical (operational) and strategic (managerial) levels" (RCMP, 2004b, ¶6).

A review of intelligence led policing and knowledge management literature shows a common theme of acknowledging the "knowledge of the communities and people" (RCMP, 2004b, ¶10). Looking towards the people who have the expertise in this way underlies the necessity for focusing on people first.

Intelligence led policing and knowledge management share a similar process that includes data collection, collation, analysis, dissemination and feedback(see Appendix E). However, at the root of intelligence led policing are the human interaction and skills necessary to gather "human intelligence

through effective personal contacts with our communities" (Paulson, 2003, p. 4).

The added benefit of intelligence led policing is that it enables police forces to have more "effective crime prevention strategies, risk and threat assessment systems, [as well as] the ability to prioritize resource allocation and utilization" (Zaccardelli, 2003a, §3). The National Public Safety Learning Center (NPSLC) a private corporation that provides training to law enforcement and public safety agencies, suggests that intelligence led policing can provide agencies with the "knowledge...for effective management of its resources, budget [while] meeting its responsibilities to prevent crime" (National Public Safety Learning Center, 2003, §1). Similarly, the Task Force on Organized Crime in the Baltic Sea Region (n.d.) used intelligence led policing to maximize their organized crime operations which resulted in "using a minimum of resources" (¶4).

While there are many positive aspects to intelligence led policing it is also necessary to acknowledge that intelligence led policing and "its utilization as a significant law enforcement tool [only dates] back to the 1970's" (Fahlman, 2003, §3). There are still issues about exchanges of information, rights, liberties, ethics, and choices of targets (Maquire, 2000) to be considered.