Information Integration in Major Investigations

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The Command College Futures Study Project is a FUTURES study of a particular emerging issue of relevance to law enforcement. Its purpose is NOT to predict the future; rather, to project a variety of possible scenarios useful for strategic planning in anticipation of the emerging landscape facing policing organizations.

This journal article was created using the futures forecasting process of Command College and its outcomes. Defining the future differs from analyzing the past, because it has not yet happened. In this article, methodologies have been used to discern useful alternatives to enhance the success of planners and leaders in their response to a range of possible future environments.

Managing the future means influencing it—creating, constraining and adapting to emerging trends and events in a way that optimizes the opportunities and minimizes the threats of relevance to the profession.

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The impact of technology on major investigations in large departments continues to be a daunting issue. The information and knowledge age continues to expand and develop exponentially as software, computer processing speeds and digital storage capacities continue to increase at a record pace. Most law enforcement agencies recognize the applicability of technology to assist with the capture and analysis of investigative data; however, many still operate in the dark ages. Investigators commonly handwrite reports, suffer through the myriad of disparate databases, and lack the ability to conduct a timely and comprehensive analysis of data.

Available and emerging technologies can provide police investigators with the ability to integrate various digital files into a virtual case folder. This unfettered access to reports, video recordings, photographs, diagrams and case notes from the detective's desktop or remote access will save time and resources, as well as enhance the investigator's ability to organize and analyze data. The digital integration of data will also allow for automated link analysis of names, vehicle information and addresses through resident or regional records management systems. We will explore ways these thoughts can become reality, and some "next steps" for you to pave the way.

Digital World

Society has developed an insatiable zest for information. As a result, information is readily available and accessible in digital formats in an almost endless variety of sources. This has proven to be quite valuable in law enforcement investigations. The proliferation of raw data capture by private and governmental entities provides extraordinary evidentiary and identification evidence as digital information is pieced together.

One case that illustrates this fact is the 2005 murder investigation of Christie Wilson, a 27 year-old woman last seen leaving a casino in Lincoln, California. The identification and subsequent murder conviction of Mario Flavio Garcia in the death of Christie Wilson resulted, in large part, from the video surveillance footage captured at the Thunder Valley Casino on October 5, 2005. (People v. Garcia, 2009) Ms. Wilson's body was never found; however, the video surveillance led the investigators to Garcia's vehicle and allowed them to piece together the details of the initial contact between the suspect and the victim. This led to Garcia's conviction, which was upheld on appeal in State and Federal courts. (People v. Garcia, 2009)

In another instance, video recording captured from private businesses in downtown Oakland, CA was responsible for the identification and arrest of four suspects in two unrelated murders. The first case occurred on April 16, 2010. (Lee, 2010) A young man and his 59 year-old son were shopping when they were accosted by two young men for no apparent reason. The father attempted to protect his son and was severely beaten. He died of his injuries four days after the incident. Video from two separate businesses captured footage of the suspects prior to the incident and the actual incident. The release of the video to the public resulted in the identification of both suspects. One suspect surrendered to the Oakland police and the second suspect was arrested several hours later in Berkeley, CA. (Lee, 2010)

A final example shows how something in common use today can change the equation of solving serious crime. On July 18 2010, a 45 year old man was attacked while entering information into his vehicle GPS device. He was robbed of $17, and then shot and killed. A store video camera recorded the two suspects just prior to the incident. Oakland police released the video to the media soliciting assistance from the community. Both suspects were identified by

citizens who viewed the video footage. Both suspects were arrested and charged with murder. (Lee, 2010)

The Impact of Automation

The computerization of law enforcement agencies has occurred in stages based on the level of technological engagement of various departments. The profession has seen wholesale change, including computerized records management systems, computer aided dispatch, mobile data terminals in police vehicles and automated field reporting. The integration of digital tools for investigative support, though, began only in the mid to late 90s. (Joseph, 2005) For example, the San Jose Police Department replaced the quick-view Polaroid photos with digital photos on homicide scenes in 2000. This change to basic point and shoot was relatively inexpensive and required very little training. The new format for photographs allowed them to be easily printed, burned to a compact disc or stored on a hard drive. Detailed crime scene photographs were shot with high-end large format or 35mm film cameras for several more years, until the digital camera quality improved to match or surpass the quality of film cameras and became affordable. (Reis, 2005)

Digital audio recording in investigations quickly followed digital photography. However, it was not as convenient or as widely accepted. Legal concerns regarding the authenticity of audio recordings were raised by both prosecutors and defense attorneys in several court decisions, including one from the United States Court of Appeal that supported their use and set guidelines for their admissibility. (Alameda County District Attorney's Office, 2004) The use of digital audio recording gained speed quickly on the heels of digital photographs; advancing from small handheld recorders to devices connected to computers and storing onto hard drives and

department servers. Many departments have back-up policies and procedures to ensure the integrity of the files. As in the case with digital photographs, the digital audio recordings are typically burned to a CD or DVD and maintained in the paper case files.

Many agencies have also converted from analog tape to digital video from in-car camera systems and interview room recordings systems. Several departments, including the City of San Jose, have also deployed officers with wearable video recording devices. (Paddock, 2010) These recordings are usually burned to a DVD and placed in a paper case folder or maintained on the department servers in a separate database. Investigative case information such as criminal record information, photographic line-ups, crime analysis work-ups, subpoenaed records etc. are very often maintained in printed form in a paper case folder or in disparate computer databases. The security of investigative information regardless of the format is an issue for law enforcement and private citizens.

Collection of data and the loss of privacy

The collection of vast amounts of data has raised concerns relative to violations of privacy rights, the intentional or unintentional misuse of information and the inaccurate analysis of information. The American Civil Liberties Union has identified technology and liberty as a key issue. (ACLU.org) Several ACLU publications citing an Orwellian future have been released; including, *Even Bigger, Even Weaker* which cautions citizens against the use of surveillance cameras. (Stanley & Steinhart, 2007) The executive director of the ACLU San Diego and Imperial Counties chapter recently stated, “we think that this report arms your average citizen with information about why cameras aren't the most effective crime-prevention strategy, and, in fact, are dangerous for privacy and the character of our free society." (Tenbroeck, 2007)

A video parody of information integration produced by the ACLU and linked to their website can be viewed at http://www.aclu.org/technology-and-liberty/ordering-pizza-2015. It is interesting that the video clip starts with an alert of a recent robbery. With this foundation, the video continues by disputing the value of law enforcement access to information and the subsequent use of this information to solve or prevent crimes.

For most public agencies, there are numerous checks and balances in policy, procedure, case law and legislation to ensure the appropriate and ethical use of confidential information to protect citizens from unwarranted privacy violations. It is important to balance those policies against the legitimate right the public has against unwarranted intrusion. Even as investigators gain more access to electronic data, though, available and emerging technologies present some viable solutions to resolve this conflict in aims.

Investigative Tools

Data capture, sharing, integration and analysis is changing daily and will require both the technology and expertise to use it appropriately for it to be used effectively. (Berkowitz, 2003) Unfortunately, availability is often subject to affordability as it relates to capital costs for equipment and personnel costs for the development and maintenance of systems. Although this is most noticeable regarding forensic science, there are also significant costs related to investigative support, analysis and case management.

One of the first major integrated data systems for investigative analysis was introduced with the inception of the Federal Bureau of Investigation Violent Criminal Apprehension Program Unit (ViCAP) in 1985. (Witzig, 2003) ViCAP was designed to collect data on murder investigations from law enforcement agencies nationwide for analysis to determine similarities in

order to facilitate multi-agency coordination. A business analysis of ViCAP conducted in 1996 revealed that only 3 to 5 percent of the 21, 000 to 24, 000 homicides committed per year between 1985 and 1995 had been submitted to the program. (Douglas, Burgess, Burgess, & Ressler, 2006) The majority of homicide cases occurred in the major cities; however, these agencies had the lowest levels of participation in ViCAP.

Positive changes to ViCAP were enabled by the passing of a 1994 crime bill that supported the authorization the development of an "intelligent information system that gathers, integrates, organizes, and analyzes information in active support of investigations by federal, state, and local law enforcement agencies of violent serial crimes" in a pilot program with 10 participating cities. (Congress, 1993) The pilot resulted in the development of software state and local police agencies could use for the analysis of violent crimes independent of the F.B.I., while also adding to the national database.

Fast forward to 2001 to the development and deployment of COPLINK in the Tucson and Phoenix Police Departments. COPLINK is an integrated information system designed to manage and share law enforcement information with multiple agencies. (Schroeder, 2001) This program allowed the agencies to share all information contained in their independent records and case management systems without the redundancy of re-inputting the information into a disparate system such as ViCAP. This sharing provided information that was then immediately accessible to any officer in the network. Grants were obtained for the development of COPLINK by the University of Arizona in conjunction with the Tucson Police Department from the National Institute of Justice, U.S. Justice Department and the National Science Foundation. (Hauck, Chau,

& Chen, 2002) The Knowledge Computing Corporation was created in 2001 to license the technology from the University of Arizona and commercialize the product.

In 2010, COPLINK has expanded significantly. Southern California and Sacramento area agencies are currently its the largest users. The South Bay Information Sharing System (SBISS) is scheduled to be operational by September 2010. SBISS will include the police and sheriff departments in Santa Clara, Santa Cruz, San Benito and Monterey Counties. According to some of the current users several enhancements and additions were made to the initial software program, such as the inclusion of:

- analytics derived from artificial-intelligence based algorithms which allow for the consolidation of information and link analysis to be conducted by the individual investigator from all of the agencies connected to the system
- GIS based mapping
- the ability to find associations between known entities and the ability to find associations using known facts and unknown entities (Davis, 2010)

The immediate access to records management databases from agencies within the region is a tremendous resource in today's mobile society. The data collected and analytical reports or charts prepared via COPLINK will need to be integrated into the individual agencies case management system to avoid future duplication of efforts or redundancy throughout investigations.

As the proliferation of disparate databases and information collection continues, the need for the integration of systems becomes even more essential. Inaccurate information or the loss

of information that is not included in reports or case in major investigations has the potential to derail an investigation by causing detectives to miss opportunities on leads or to be mislead due to inaccurate or incomplete information. Today case management systems are being designed to capture information that originates as a digital file or provides the ability to convert information into a digital file. Several companies; Versaterm, Niche, Tiburon and Intergraph, have been working closely with law enforcement agencies to develop highly integrated systems that interface with CAD, RMS, disparate databases, fusion centers and programs such as COPLINK. (I2, 2010) These systems are configurable to allow upgrades and components to be added without the compatibility issues of the early proprietary systems.

These advancements, of course, will create a future aligned with the envisioned digital integration of investigative data. Picture this, an investigator logs on to the department's integrated information system after his weekend days off. He brings up a dashboard touch screen that shows his active cases, a listing of links to contacts, and entries related to any of the suspects, victims, witnesses, vehicles, addresses and telephone numbers in his open cases. The dashboard screen also provides a listing for a similar links for his recently closed cases based on date parameters set by the investigator. The information is automatically added to the individual case link analysis charts. The dashboard allows the investigator to view each report, photo, video, or audio recording related to a specific case without logging in and out of different systems or searching through a paper case file. The artificial intelligence capabilities built into the system also allow the digital case to grow as needed depending upon the complexity of each investigation.

The system doesn't think for the investigator, but instead automatically searches local and regional databases to migrate and consolidate related case information. And, the investigator is reminded by the dashboard calendar of upcoming court dates, subpoena service, deadlines for filing, statute of limitations and other pertinent tasks. The research tab on the dashboard is convenient to ensure proper penal code sections are charged as the charges and elements of the crime are listed for each of the investigator's cases. Undoubtedly, this seamless integrated system would greatly impact the investigator's success and increase the solvability rates of their cases. It also maximizes the use of time in an era of shrinking resources. Rather than doing more with less, we will actually do less with more.

Conclusion

The common thread in case management is the manner in which various digital information is collected during the course of an investigation stored and accessed. It is almost always individually stored and separated in a paper file, burned to a CD, DVD, stored on hard drives or servers. An integrated system that provides both access and storage to the investigative information would reduce the time spent searching through paper files, CDs, DVDs or navigating between disparate databases. Instead, the information would be available through simple keystrokes and limited to the appropriate units or individuals.

An integrated system provides added security due to regularly scheduled system back-ups as it protects the information and assists in maintaining the integrity of the investigation. The system of the near future will include analytic tools that can be used by the individual investigator as well as those that are used by the department's criminal information analysts. As agencies continually look for opportunities to enhance their operational performance, they will

find that integrated systems can support records management, information sharing, deployment, statistical analysis and reporting as well as eliminate redundancy.

A commitment to an integrated system will require a long term plan and vision which will allow for growth with technology. This commitment will include funding for the system infrastructure, on-going maintenance, personnel and continuous training. Agencies should consider the purchase of systems that are configurable and use common programming languages that will allow departments to add newly developed components as they become available.

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