

THE

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**Digital Explosion:  
Collateral Damage to  
the Credibility of Law  
Enforcement?**

**Hybrid Policing  
Models- Are They  
Possible?**

**Sixth Sense  
Technology Credited  
for Nabbing  
Sex Offender**

CALIFORNIA  
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Volume 49 No 3

## CONTENTS

### **6.**      **Digital Explosion: Collateral Damage to the Credibility of Law Enforcement?**

*Lieutenant John McBride*

*Los Angeles County Sheriff's Department*

### **12.**     **Hybrid Policing Models- Are They Possible?**

*Assistant Chief Jonni L. Fenner,*

*California Highway Patrol - Valley Division*

### **20.**     **Sixth Sense Technology Credited for Nabbing Sex Offender**

*Captain Ron Raman*

*Pittsburg Police Department*

# Digital Explosion: Collateral Damage to the Credibility of Law Enforcement?

By: Lieutenant John McBride, Los Angeles County Sheriff's Department

## Introduction

By one estimate, 90 percent of all of the data in history was created in the last two years. In 2014, the International Data Corporation calculated the data universe at 4.4 Zettabytes, or 4.4 trillion Gigabytes. That much information, in volume, could fill enough slender Ipad tablets to create a stack two-thirds of the way to the moon (IDC 2014). Given that much of the law enforcement profession relies on the quantitative perspective, how will this data explosion impact law enforcement, police agencies and individual police officers? As data mushrooms and becomes easy to



digitally access, police executives, legislators and even police managers will have to create a system to manage this increase of data, and facilitate processes and policies to influence accuracy. A plethora of data will now be easily accessible, quickly analyzed and interpreted to influence public perception, decision making, risk management and even law enforcement funding.

Steven Moore of the Federal Bureau of Investigation Computer Forensics team stated, "It is not uncommon to suggest that computer processors and data storage will rapidly improve, to the point where a body camera and a police radio could easily be the size of a police officer's badge and worn upon an officer's chest" (Moore 2015) As processors get faster and digital storage becomes more efficient, there will be a rapid integration, or links, between all forms of data collection and data processing devices. For example, an officer's body camera will be linked to facial recognition that could also be linked to many different databases. The police officers of the future will have more data immediately available to them. How will this information be used and will law enforcement agencies have the technical ability to stay current on these rapidly emerging technologies?

## Managing the rapid influx of data

Coal, iron ore, and oil were the key productive assets that fueled the Industrial Revolution. Today, data is the vital raw material of the information economy. The explosive abundance of this digital asset, more than doubling every two years, is creating a new world of opportunity and challenges. The collection and interpretation of data techniques are very useful in the private sector as a way to identify market

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trends and target specific customers. Detailed algorithms are being developed to identify personality traits, buying patterns and even to predict behavior.

Margret Zhou, a computer scientist at the IBM Almaden Research Center in San Jose, is working on a social media project, “KnowMe”, that has the ability to acquire a deeper understanding of one’s demographics, political orientation and even personality traits based on the linguistic footprint left by individuals on the internet (Zhou 2014). Her system, in part, queries social media sites, including tweets and categorizes these individuals into specific personality classifications. She suggests that her system can get an understanding of one’s personality traits in less than 200 tweets.

Collecting data from social media sites are not the only signals that can be used in algorithms to identify personality traits and help predict behavior. There are many other data collection points that can easily be captured without a gross intrusion of one’s privacy. Acxiom is one of the largest data collection companies in the United States, headquartered in Little Rock, Arkansas. This company has collected data on hundreds of millions of consumers worldwide. For each person, the company boasts, it typically has thousands of signals of behaviors or “attributes”.

Data collection signals (Lohr 2015):

- Social media sites
- Name search public records
- Police complaints
- Web browsing history
- Credit card purchases
- On-line purchases
- GPS tracking
- Federal data based entries
- Sensor signals
- Genomic information

These are just a few signals. By linking this information, algorithms can be created that can predict traits and even behavior. As companies are developing the ability to predict potential behavior and traits, it can have a major influence on law enforcement agencies and their police officers. It is easy to see how predictive information could impact law enforcement hiring, risk management, liability rates, public perception, agency funding and even police officer or police department credibility. Rather than waiting for those impacts to occur, the time to manage its influence is now.

### **Big Data Influence on Law Enforcement**

In the public sector, there is an increasing demand for immediate digital information, suggests Lieutenant Michael Irving who supervises the media relations staff at the Los Angeles County Sheriff’s Department (Irving 2015). The public, media, and other stakeholders have developed an appetite for quick information. There is an expectation that law enforcement agencies will provide immediate data on crime,

arrests, police officers complaints, liability records, hiring standards, and demographics. Sometimes it seems like the need for quick digital information outweighs the validity of the information obtained.

As digital access to information proliferates and more data is available, the public, media outlets, and businesses have immediate access to information that was once difficult to retrieve or simply not available. In this digital age, anyone could quickly obtain crime statistics, agency and community demographics, training records including personnel complaints, and agency recruiting objectives. This immediate form of transparency caused by the accessibility of all types of information offers new challenges to the credibility of both police officers and police agencies.

If a potential applicant or police officer makes inappropriate contributions on social media that contradicts or compromises the agency's values, it could be captured and evaluated. Custom algorithms similar to those used to target potential customers in the private sector could easily be modified to determine this individual's personality traits, potential behavior, political affiliation or likelihood of becoming involved in a high-risk liability incident. Depending on how this information is interpreted, it could have detrimental influences on public perception, liability rates, and continued employment. Although there are obvious pitfalls in the ways data can be captured or used, if the police do not actively seek to do so, others will fill that void.

### **Obtaining Big Data Competency in Law Enforcement**

As big data rules, then the people that have these quantitative skills and talents will be the new rulers. Elite universities may give lip service to the humanities, but the so-called STEM disciplines (science, technology, engineering and mathematics) are in the ascent (Girod 2013). Law enforcement recruiting efforts must evolve with the technology demands of the future. This must be done to not only maintain adequate recruiting numbers, but also to ensure that the law enforcement workforce is technically savvy enough to keep up with the rapidly growing big data demands.

There are more than 18,000 law enforcement agencies in the United States (AJF 2014). One major challenge is that most agencies do not have the technical competence to keep up with the big-data explosion. Chief Bill McSweeney, of the Los Angeles County Sheriff's Department is part of an organization that employs more than 19,000 employees and has vacancies for 1,300 more. He commands a major crimes detective division that investigates high technology commuter crimes. Chief McSweeney states that law enforcement needs to modify its recruiting standards, for the past 60 years law enforcement has placed a higher priority on physical ability rather than proven academic success (McSweeney 2015).

A critical area of need is for the technologically adept to join the Department. As technology advances, not only it is difficult to find sufficient number of deputies to adequately investigate certain high technology crimes, but also deputies that are technology competent to understand and interpret the significance of big data. Law enforcement agencies need to fill a void with employees that have a technical background and a 'quantitative perspective'.

Not only do law enforcement agencies need to investigate high tech crimes, but also have to understand and stay current on current technical trends, data retrieval



techniques and even open source internet practices. These skills are necessary to investigate crimes, maintain accurate records, and to provide timely information to the public. The necessary task is train all of their employees as to how a linguistic footprint left on the internet could jeopardized the credibility of an agency or even an entire profession. An unskilled agency that is unaware of the potential of big data is at risk of not only losing credibility and effectiveness but it could jeopardize their very existence.

### **Data Collection Influencing Health Care**

Before focusing on how this big data explosion could potentially impact law enforcement, it is helpful to see how this emerging technology has impacted other professions and industries. In the health care industry, there are huge financial payoffs to developing predictive models of behavior based on the growth of data. These big data collection companies have demonstrated the ability to accurately predict if a person has a chronic disease or is financially strapped. Edward Felten, a computer scientist and former chief technologist in the Federal Trade Commission compares the current state of affairs to the digital equivalent of attending a conference with name badges. However, instead of names, the people are wearing badges that say, “I’m a diabetic” or “I’m deeply in debt” (Felten 2013). While this information is not personally identifiable, it is much more sensitive information than your name. Health care providers could deny or not encourage membership with individuals that are a potential risk to their bottom line.

The larger danger in using this information is if groups of people are systemically misclassified or discriminated against. The Obama administration’s big-data report, published in May 2014, warned that big data has “the potential to eclipse long-standing civil rights protections in how personal information is used in housing, credit, employment, health care, education and the marketplace” (Podesta 2014).

Major challenges in using big-data modern algorithms are that they are not transparent, the specific formulas that generate predictive traits and behaviors are hidden and proprietary, and as a result, there is minimal oversight. As these data collection companies gather and sell these quantitative social indicators that are used for decision making, the more likely it is subject to corruption. Felten suggested that as a way to minimize a general categorization towards an unhealthy lifestyle, one might want to use their credit card to pay for their health club membership. However, when buying cigarettes or alcohol, cash might be a better alternative (Felten 2013). Given that a pattern of collection signals might influence opinions or challenge an agencies credibility, it is important to develop and utilize relevant policies and procedures.

### **Developing Policy and Procedures Concerning Data Interpretation**

As big data technology moves rapidly forward in all major industries, it is striking law enforcement disproportionately. A majority of police executives have neither the internal talent nor technical competency to manage this new challenge. It is clear that the old systems of managing and processing data have outrun the old rules, laws, and definitions. Law enforcement leaders need to look to the private sector for guidelines and procedures on how to collect, analyze, interpret, and use

this wave of predictive data. Felten suggests that maybe the police should work their way toward an accommodation with this data technology rather than a solution.

Interpreting this wave of data will be key. Law enforcement efforts to control the collection of data may be time wasted, given there are so many usable collection signals. Instead, law enforcement leaders should focus on policy and processes as to the use of this predictive data. Instead of passing laws and strict policies that attempt to limit and control available information, there should be more focus on responding to or providing explanation for the data that is made public.

In his book *Data-ism*, Steven Lohr suggests that instead of trying to legislate this new technology, we should use “rules, tools and social expectations to regulate digital perceptions” (Lohr 2015). He cited an example in the early 2000’s when cell phone cameras were becoming prevalent. Some municipalities aggressively passed laws that regulated where and when people could use these cameras, like prohibiting use in a locker room or rest room area. Instead of strict laws, informal social contracts developed and the majority of people found it distasteful to take these types of photos. Consequently, strict laws were not necessary. He added that the longer cell phone camera technology was around, the more comfortable people became with its general use and it became self-regulating. This is one alternative to managing the influx of predictive law enforcement data.

While a technology policy that relies on self-regulation may be a bit “laissez faire”, it is important to realize that a law enforcement agency, or even a municipality, cannot regulate every aspect of this digital explosion of data. Instead, police executives will be better served by recruiting, training, and fostering a workforce of technologically-savvy employees to clearly identify the latest data trends. Additionally, these law enforcement leaders should promote an environment of networking among technically competent experts that realize the significance of big data scenarios.

## **Conclusion**

The most effective law enforcement agencies will be the ones that adapt and respond to this big data advancing technology. Who would have thought 10 years ago that police agencies would be proactively monitoring social media pages like Instagram and Twitter, actively searching for digital images and key words to prevent crime and arrest individuals. Law enforcement agencies will have to respond to this challenge. They will have to either initiate recruiting campaigns that attract technologically savvy people or outsource individuals that have these skills. Larger portions of a law enforcement agencies budget will have to be dedicated for technology training and full-time social media positions.

As law enforcement agencies are at the beginning of this rapidly growing technology, the challenges seem daunting. However, with a strong commitment to educating and training employees, these challenges offer many new opportunities. If managed properly, this will attract the most qualified, competent and empathetic personnel, while improving community relations, preventing crime and creating safer communities.

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# Hybrid Policing Models — Are They Possible?

**By: Assistant Chief Jonni L. Fenner,  
California Highway Patrol - Valley Division**

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What is possible? Often the idea of what is possible appears intangible but can unexpectedly become very palpable, similar to the volcanic eruption from the Kilauea Volcano in Hawaii. This story on the volcano provides an interesting perspective relative to implications for the future of policing.

The story begins with a volcano eruption. A slow moving river of molten lava edged ever so close to the village of Pahoa at a pace of 14 meters an hour. Many specialists had been evaluating the trajectory of the flow to anticipate the “corridor of risk.” Needless to say, this “current” eruption began in 1983 with new activity surfacing from early in June 2014. The village stayed in the “corridor of risk” despite early implications that eventually the volcano would erupt and the village would be in the path of destruction. Law enforcement is analogous to the village of Pahoa and the residents of that village. The villagers were living under the assumption things would never change. If law enforcement remains in its own “corridor of risk”, until there is imminent danger of being torched by 900 degrees Celsius molten rock, things will also stay very much the same.



Across California cities have filed for bankruptcy and many others are on the fringe. One of those cities, East Palo Alto with a population of 28,000, is considering outsourcing police services (Frank, Stephen, 2014). By adopting a hybrid model, East Palo Alto and other municipal police agencies would benefit in all areas of operations. If consideration is given to the viable possibilities and solutions with a hybrid model, a law enforcement agency could ensure the credibility of law enforcement, reduce liability, increase service, decrease crime, reduce costs and increase the quality of life for citizens.

## **Hybrid Models of Policing**

A hybrid model differs from hybrid blends currently in practice. A hybrid blend is often comprised of volunteers outsourcing to a variety of contractors for nonessential services and police officer reserves. For example, Los Angeles Police Reserves Corps is comprised of community members who volunteer their time to fulfill many of the roles handled by full-time sworn police officers (“Reserve Police Officer Program,” 2014). Reserve officers receive the same training as full-time officers, work alongside them in every aspect of department operations and

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are accredited by the California Peace Officers Standards and Training (POST). In Atlanta at the 1996 Olympic Games, the city employed 4,800 state and local police officers, 14,000 soldiers, and 13,000 private-security guards (“Welcome to the New,” 2009). In 2012, the Los Angeles County Sheriff’s Office estimated reserves were 10 percent of their full-time force and donated over 210,000 hours at \$30 per hour (half the salary paid to a full-time deputy), equating to a value of \$6.3 million (“For the Love of the Job,” 2014). Extending on these concepts can create a police agency of the future that combines the best of fulltime peace officers with a blend of volunteer and private-sector contractors.

Economically, privatization, outsourcing, or temporary workers have shown to boost local economy through the contracted companies paying taxes while also reducing municipal budgets. About 36 percent of private companies hire contract or temporary workers. This employment practice can create great economic benefits for a public agency following suit. Job search site CareerBuilder reports that 42 percent of employers plan to hire temporary or contract workers in 2014—an increase from 40 percent in 2013. This means the temporary staffing industry was expected to grow by six percent in 2014 and seven percent in 2015 (Dill, Kathryn, 2014).

A “hybrid model” is distinguished from a more traditional blend of sworn and non-sworn fulltime public employee positions in a police agency. It is designed to integrate a specialized, highly trained, well-qualified temporary peace officer from an accredited agency, making augmentation seamless. The anchor of this model is that temporary officers will derive from an accredited, licensed law enforcement temporary, or temp, agency. The hybrid model will eliminate a lack of uniformed regulatory controls on the quality of the temporary employee for hire that can occur with current blends. Thus, it will become a benchmark for certification requirements for both the temporary employee and the vendor providing the service to reduce risks and liability to the police agency. Blends utilizing volunteers have been instrumental in policing. However, as there are many variations of hybrid augmentation, this new hybrid model can become a gold standard for policing in the 21st century.

To illustrate the advantages of a hybrid model, let’s look at a temporary agency in the near future named POSSIBLE INC. POSSIBLE INC (PI) provides a platform for standardized highly trained and qualified temp officers contracted to municipal police agencies for sworn police services. An added option from PI is to also contract for civilian staff temporary employment.

### **A New Public Safety Staffing Agency**

On March 12, 2017, the following full-page advertisement appears in the daily edition of USA Today:

“POSSIBLE INC: A global agency that offers our clients award-winning support service solutions. We are committed to excellence, and are

accredited by Commission on Accreditation for Law Enforcement (CALEA) and Peace Officer Standards and Training (POST). The International Association of Chiefs of Police (IACP) has recognized us for our leadership in innovation and quality of work.

We recruit diverse experienced and retired members from the law enforcement community. Through our process, staff is carefully pre-screened through an extensive background investigation. With most agencies, the emotional intelligence of staff is essential, so we also ensure we hire the right people to fit into the right positions. Our uniformed staff all receive basic POST training. For specialized needs, our veteran staff receives ongoing training to hone their skills.

Our staff can fill positions in any of the following areas:

- Advanced Officer Safety Training trainers
- SWAT training
- Criminal and traffic investigations
- Traffic enforcement and California vehicle code knowledge
- Forensics
- Computer crimes
- Crowd control and tactical deployment training
- Protective services training, and many others.

Solutions are cost effective and scalable to any level of need, whether it is a case-by-case basis, part-time or full-time temporary staffing members. The process allows for the ease to scale back at any given time as demand changes. For more information on services, contractual agreements, and assessment of your organization's needs, call (800) 555-5555."

About 26 percent of law enforcement agencies nationwide have reduced their staffing in a variety of ways. Another 38 percent discontinued specialized training units such as gang and traffic enforcement. Certainly, law enforcement agencies are looking for solutions (DOJ Office of Community Oriented Policing Services, 2011). With these types of statistics, an ad placed such as the one above would draw substantial interest. POSSIBLE INC would be an intriguing, timely and money-saving approach. Beyond saving budget dollars, PI would enhance effectiveness as it alters the way policing is delivered to communities.

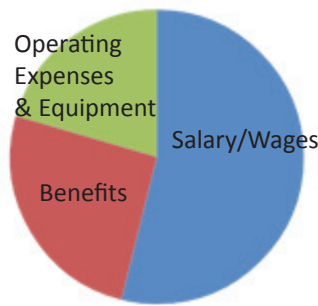
Is this something that can work in our policing culture? It could resolve many longstanding challenges. With salary and benefits being the largest chunk of the budget, there would no longer be the incessant demands of entitlement pay increases, increasing benefit packages and the detrimental cost of PERS pensions. Police agencies would have more flexibility and be more effective while increasing police presence and deterring crime by enhancing the guardian side of their

crime triangle (Center for Problem-Oriented Policing, 2015). Additionally, the generational differences in new employees have reshaped the police environment and connectivity. (Houstoun, Feather O'Connor, 2013).

### **Current Challenges**

There are three primary motivators for police agencies to consider a hybrid public-private model: budget, diversifying workforces and recruitment/retention. There is a continual dichotomy to balance the budget and meet both the political and economic external and internal demands. Relative to the budget, consider the pie chart of a budget with several slices dedicated to equipment, salaries, benefits, etc. Those pie slices are not all equal.

**California Highway Patrol Budget**



The California Highway Patrol budget depicted above illustrates the large slice of the pie belonging to salary and wages. If combined salary, wages and benefits, it is over 75 percent of the entire budget. The hybrid model would change the size of those pie slices. There would be smaller portions for salary and benefits, which then could be redistributed for other essential organizational needs.

Law enforcement agencies nationwide struggle with the ability to diversify the organization to reflect the communities they serve. Additionally, with diverse population growth and the strain on resources, the ability to bring in temporary officers that mirror the community will increase public trust and bridge gaps. The temp agency would be symbiotic with the diversity requests of the police agency due to the accessibility of a police agency to select their employee based on their needs. An agency could address community issues and perceptions with a simple request for a temporary officer. Additionally, the flexibility the temp agency has in hiring employees for their agency is vast. PI could advertise and market in a way that appeals to candidates without the constraints of police agencies that have to keep the right approach. PI could also offer incentives to their temp employees and be selective in who they hire based on their company policies. In police agencies, there is not much flexibility to make agencies competitive, as most agencies all fish from the same pond. That pond is currently reflective of California's current drought situation; dismal. Policy agency policies disadvantage the effectiveness of

recruiting and retaining officers. However, a hybrid model enriches the recruiting/hiring streams and creates vitality.

It is not an exaggeration to say today's conditions have created a concern in the relationship between peace officers and the communities they are sworn to serve. Based on the panel of professionals used to work on this issue, general consensus was community policing needs to be a priority and not a buzz word. The group felt the hybrid model would help overcome the legacy of challenges by police agencies to meet the demographic trends of our nation's communities while providing cost effective sustainability.

This segues into the ability to hire quality members for law enforcement and retaining them, which has been a longstanding struggle for policing. A new study by Randstad finds many U.S. companies are more committed to utilizing a mix of permanent and contingent workers as a long-term business strategy in the post-recession economy (HR.BLR.com, 2012). Of those studied, 67 percent of companies indicated they currently use contingent workers in some capacity and most indicate that contingent workers comprise a steady or increasing percentage of their overall employee populations. The survey was conducted of 225 human resources managers and 2,035 employed adults. What was discovered was workers are choosing to work in a contingent capacity and finding higher job satisfaction. Overall, 78 percent of temporary and contract workers agree their experience as a contingent worker has been a positive one. Specifically, the study finds that 86 percent of temporary/contractors agree their current level of job satisfaction is very good/excellent compared to 73 percent of permanent workers. Additionally, temporary employees hope their temporary assignment will lead to permanent employment, as well as a managerial or supervisory position. The study showed that nearly one-third of temporary workers (32 percent) are currently holding those types of positions (HR.BLR.com, 2012).

Therefore, the hybrid model moored by a standardized, accredited foundation through an agency such as POSSIBLE INC would create a clearinghouse to streamline the recruitment and hiring process. PI could provide a pool of Peace Officer Standards and Training (POST) certified officers with completed screening in backgrounds, medical and psychological processes. Basically, waiting for an agency to put in a request for what they are looking for and the temporary agency able to look through PI's temporary staff profiles to match them with the police agency seeking temporary sworn staff. Instead of matching for a personal relationship, it would be matching for a professional partnership.

### **Hybrid Policing Model a Long-Term Strategy – Managing the Risks**

Some primary concerns for using a temporary workforce for municipal police agencies include:

- will it be a long-term strategy for staffing?
- how to manage the risk liability factors of using privatized employment.

Managing risk covers accountability gaps and suitability of the hybrid model (Donahue, John, 2006). Determining whether it will be a long-term strategy



depends on the effectiveness with which an agency integrates the hybrid. It will be important to ensure there are standards established by control agencies for the qualifications and training of the temporary officers, as well as standards set for the agency qualifying and training these individuals. These concerns will be shared by police unions/associations.

A past president of the Sacramento Police Officers Association expressed a concern that a hybrid model might be the “beginning of a slippery slope.” In his mind, privatization and hybrid models would lead to the elimination of sworn officer positions and the inability to create competitive wages/benefits for officers. The comment was made that temporary workers will not have the investment in the community as agencies already deal with transient permanent officers who do not live in the communities they serve now. Additionally, temporary officer will not be as well trained and could not perform the job as well as permanent full-time officers. Although these points may be valid from a union perspective, without strong supportive evidence to demonstrate the model would not be successful, it could be chalked up to simply opinion.

There is always the delicate balance to meet organizational needs by using temporary staff to do the work of permanent employees. For example, one agency was faced with discontinuing contract services for a specific service due to a union grievance. The agency was required to utilize current employees for those services. The agency had to go through an internal process to increase the departmental classification to meet those needs which some would argue cost more money, created more inefficiency and took longer than expected. On the other side of the coin, there can be some hidden risks including poorly conceived contracts that create cost increases surpassing the cost of in-house services, and a lack of oversight that could lead to the potential for lax accountability.

## **Recommendations**

Law enforcement agencies are not cookie cutter. Accordingly, this business model is not one-dimensional. The foundation of the hybrid model is centered on the quality of the model itself and the temporary staff that would provide the services. This should include the accreditation of the temporary agency.

Law enforcement agencies should assess the needs of their departments and identify areas that could benefit from augmenting staffing with temporary sworn members. They can then begin to integrate the temporary positions at a pace that is tolerable for the overall internal environment. Assess the benefits of the changes, modify as needed and begin to include the resources at a more progressive pace to meet needs.

In addition to self-assessment and implementation, this staffing business model should also solicit support from law enforcement accrediting entities. The support provided by these entities would create the framework for certification guidelines for the the model’s success. Additionally, there may be potential for legislative changes to create a more effective operating environment to implement the model, giving police agencies the leverage needed to move forward.

## **Conclusion**

Jim Link, Managing Director of Human Resources for Randstad US recently said “The recession produced such significant operational and financial duress for U.S. companies that the business model of the future will rely heavily upon the ability to be insulated from economic downturns. We live in a world now that rewards financial flexibility rather than fixed-cost business models, and agility, cost containment reign supreme...What used to be viewed as a temporary stop-gap measure, the utilization of a contingent workforce alongside full-time talent is no longer a contingency plan. This integrated staffing model will be fundamental to operational and fiscal success for the foreseeable future” (HR.BLR.com, 2012).

In any business practice, it is essential to evaluate all options and identify those that have viability and sustainability. Law enforcement agencies are wise to recognize the signs of a sluggish economy only slowly recovering and at a pace that may take much longer than expected. Therefore, with decreasing fiscal pools to draw from, along with environmental and technological changes, agencies must be open to new ways of doing business (Lyons, Joseph 1993). Law enforcement agencies remain in the corridor of risk much longer than they should and then take evasive action too late. Avoid the corridor of risk and consider what’s possible by adopting a hybrid model of policing.

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# Sixth Sense Technology Credited for Nabbing Sex Offender

By: Captain Ron Raman, Pittsburg Police Department

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A habitual sex offender was arrested today as he wirelessly streamed child pornography from inside of his vehicle. He was parked at an elementary school parking lot when officers received an alert, pinpointing the sex offender's location as well as his recent cyber downloads. The offender was arrested within minutes of the alert. His identity



was confirmed through facial and voice recognition "Sixth Sense" software. Believable? It is as believable as video conferencing was in the late 1980's; something that can now be done in the palm of your hand. The technology is here. Are law enforcement agencies prepared to make this a reality?

## Trending Toward a Sixth Sense Device

Information once retrieved from printed material on a library shelf (typically dated by months or years) is now available real time through a mobile device. This has allowed the transmission of information within seconds of it being created rather than years. As a result, newspaper circulations are down seven million over the past 25 years. Conversely, in the past five years, readers of online newspapers are up 25 million. (The World is Changing Fast, 9/2009) Data suggests that more than 90 percent of Americans own cellular phones and one in two of them are smart phones. (Foresman 2007) The new smart phone will be a device providing its user with information without being asked; a "Sixth Sense" device. What will tomorrows "Just Google it" be?

## The Need: High Tech Through the Eras

In a 2010 research study conducted by the National Institute of Justice, high priority on technology was identified as a necessity to ensure officer safety. "Through collaboration and consultation with practitioners, NIJ has identified high-priority technology needs....aimed at ensuring officer safety." Further noted in this research was the ability to use technology to identify an individual's identity

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*Technology will continue to change the way officers protect and serve their communities. The Pittsburg Police Department is always seeking innovative ways to solve crimes.*

in a timely manner, including iris and facial recognition. ([www.nij.gov](http://www.nij.gov)) Following N.I.J.'s lead law enforcement leaders need to embrace the development of devices that bridge the path of information from the thousands of databases, remote computers and other communication devices to its intended user.

Imagine empowering officers with a handheld (or wearable) device to allow them to see crimes as they occur, provide them with information necessary to make communities safer, and capture real time video of their response. With the advent of widespread interactive personal devices such as smartphones, the time is now to plan for that device. As we have moved through the eras of policing, such development is only a natural outgrowth of the penchant for policing to take advantage of emerging technologies.

### **Policing in the 21st Century and Technology**

Although some might resist the deployment of novel technologies to allow instantaneous interaction with the myriad of data available today, police have historically seized opportunity whenever it emerged to do just that. A technology report provided to the N.I.J. by Seaskate Incorporated, identified three historical eras in policing. (Seaskate, 1998) Police equipment and technology has evolved in each era of policing in the United States. Telephones, Police callboxes and the use of fingerprints to assist in criminal investigations were implemented in the Political Era (1840-1920). The Professional Era (1920-1970) brought regionalized training, crime laboratories, introduction of two-way radios and automobiles. The Technology and National of Crime Era (1970) introduced radar guns and the first effort by the federal government to foster and develop new technologies to assist the police. Prior to this era the ability to call 911 for help was non-existent and a farfetched idea. According to a 1998 article in the Police Technology magazine personnel at AT&T initially balked at the idea of a centralized phone line citing several reasons, including jurisdictional boundaries. (Seaskate 1998) In January of 1968 AT&T announced the creation of 911 lines.

With the availability of surveillance cameras and the capabilities of smart phones, officers now have an invaluable tool in crime fighting. With advances already in the planning and development phases, they will have simultaneous information at their fingertips. Interagency communications will benefit from the ability to transmit data real time to their counterparts nationwide. Think of the possibilities if the police had such tools at their fingertips. A brief example of the felony response of the near future illuminates the possibilities.

### **The Near Future – The Sixth Sense in Action**

A bank robber robs a string of banks while he drives north on Interstate 5 headed toward Sacramento from the Los Angeles area. In each incident, parts of the suspect and vehicle descriptions are captured on surveillance footage. All of the media footage is uploaded and immediately accessible to law enforcement through a "Sixth Sense" device. As the robber stops at an intersection next to an officer several hundred miles away from the initial robbery, the officer receives a

high alert on his device, indicating that the person and vehicle next to him match the descriptions of several recent bank robberies. The suspect is contacted based on the information given to the officer and ultimately arrested.

In this scenario the device is constantly utilizing available information and providing it to its user, the officer may have not even had prior knowledge of the robberies. Radio communications, identifying information, criminal histories, and intelligence information provided to officers on the field through the device. It also seamlessly filters all this information. Interestingly, the device as described may already be on the horizon.

### **Technology Today**

There have been documented incidents in which officers have been injured or put at risk due to the lack of information. Similarly, violent offenders have eluded capture for the same reasons. In 2010, the National Institute of Justice identified a high priority need in technology for the criminal justice field intended to create technologies that could optimize the flow and capture of electronic information. Most significant amongst their goals was to create systems that would:

- Identify individuals from video and audio surveillance.
- Perform Iris Scanning and Facial Recognition.
- Identify individuals in a timely manner.
- Remotely compare information to criminal justice databases. ([www.ojp.usdoj.gov](http://www.ojp.usdoj.gov))

In the public realm, anyone can purchase a device that already interacts with the user, provides instant access to information, and engages the user in a “conversation” to facilitate desired ends. That device is the smartphone. In 2011, Apple launched new software for the Iphone 4S that allowed the user to verbally communicate with their phone labeled SIRI. ([www.apple.com](http://www.apple.com)) The evolution of SIRI for policing purposes could be a wearable, intelligent, and interactive device for law enforcement. In one high tech lab, this concept is already under study. Pranav Mistry, a PhD student in the Fluid Interfaces Group at the MIT Media Lab, is in the initial phase of developing a prototype of a “Sixth Sense” device. [www.pranavmistry.com](http://www.pranavmistry.com)

Mistry’s device is comprised of a pocket projector, a mirror, and a camera the user interacts with via hand gestures. For example, making a gesture by connecting your thumbs and index fingers together with both hands would signal the device to take a photograph. The mirror projects images back to a smart phone with image recognition software. A barcode projected onto the mirror gives identifying product information, including the best local sales prices. A device that projects information to the user today could deliver it directly to their brain tomorrow. In its current development stage, the device is compact, cost effective, and connects to public information systems.

Mistry’s device is an initial look at similar technology available today. Extending on his work, a revolutionized version of a Sixth Sense device for law enforcement should have the ability to:

- Stream information to and from the user simultaneously.
- Utilize voice commands.
- Identify individuals through facial and retina scans.
- Record and retain data.

Sadly, an event from the real world exemplifies how significant such a device could be to save the lives of the police.

### **Trooper Randall Wade Vetter**

On August 3, 2000, Texas Highway Patrol Trooper Randall Wade Vetter stopped a 72-year-old driver for not wearing his seatbelt. Unbeknownst to Trooper Vetter, the old man had been known to local officers for statements he'd made — he'd said he would shoot any officer who tried to write him a ticket for not wearing a seatbelt.

Trooper Vetter was attacked by the suspect, who had exited his vehicle and opened fire with a rifle. Trooper Vetter, struck in the head, survived for four days before succumbing to his injuries. (Wyllie 2009)

Trooper Vetter's tragic death sparked the invention of COPsync, an officer safety notification system utilizing several databases for delivering real time information to the officer's mobile computer. (Wyllie 2009) According to an article published by Doug Wyllie of PoliceOne.com, "Getting vital, real time, officer safety information in to the hands of cops on the street became the life mission of two Texas police officers after the incident that claimed the life of Texas Trooper Randall Wade Vetter."

COPsync was launched in April 2004 by Texas law enforcement officers Shane Rapp and Russell Chaney. Extending on the Copsync philosophy, sixth sense technology would go a step further to deliver real-time information through the device. Some might think the police would be reluctant to partner with devices that may offer "too much, too often." In fact, the pathway to this type of interaction is already in the field.

Several law enforcement agencies now equip their police officers with audio/visual recording devices to assist in court proceedings and civil liability. Compact recorders with enhanced abilities are infiltrating law enforcement organizations and are quickly becoming a mandatory tool worn by officers. In October 2009, San Jose Police Department became the first police department in the nation to have video cameras as a part of their officers uniform. (Rusk, ABC 7) Audio/Visual hardware worn by officers is a significant step toward the evolution of a Sixth Sense device.

Officers are already wearing cameras on their uniforms; a Sixth Sense device similar in size would be an easy transition. Offenders would know they were being recorded and that whether they were truthful or not, the officers had accurate real time information. This knowledge alone would weigh on an offenders decision not to be violent. This device will hold officers and the community accountable for their actions.

Sixth Sense technology will change the way many systems operate within

the criminal justice system. For example, cases will have video evidence to assist in changes to case law as well as adjudicating cases. Policies articulating Sixth Sense evidence retention and management procedures will have to be developed. Law enforcement leaders must ensure accountability of the policies and procedures to ensure that all information transmitted through the Sixth Sense device is secure and only used in an official capacity.

### **Recommendations**

Budget shortfalls cannot be an excuse; if planned and implemented correctly these devices will provide a safer environment while quite possibly decreasing the numbers of sworn police officers. Costs will always be a legitimate concern for private and public sector leadership. As presented, a Sixth Sense device should cost about the same as supplying an officer with a firearm. Grants through vendors and government agencies could help offset costs. In fact, Office of Justice Programs Information Technology Executive Council establishes guidelines for funding local law enforcement agencies with safety driven by technology. The council's goal is to ensure that technology is deployed in a manner that allows information-sharing across agencies. Technology to Fight Crime program OJP's website indicates, "Technology helps to improve public safety in several ways. For example, enhanced criminal records and identification systems keep high-risk individuals from obtaining weapons or positions of trust." ([www.ojp.gov](http://www.ojp.gov))

Law enforcement organizations collaborating with each other can solicit the help of vendors in an effort to develop a physical device. There are several databases available to law enforcement personnel that would need to be merged into this device in a manner similar to the way applications are currently delivered to smartphone users. The end user will need to be trained on how to utilize the device safely, and the community will need to be aware of what the capabilities and restrictions are of such a device. Contacting possible vendors for this device would be the first step. Vendors would need specific guidelines for the development of this device. An information technology specialist familiar with police databases and police practices should be involved from the beginning.

A Sixth Sense device will become reality, regardless of law enforcement involvement. The time is now for law enforcement leaders to embrace this technology and direct the device's future role in law enforcement. As we continue to adapt to using enhanced technologies, we hope our sixth sense officers can become safer and more efficient in their duties. In a desired future, a sex offender would never be able to be near potential defenseless children without the knowledge of police.

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