Social-Enabled Policing

Leverage the power of social media to enhance outcomes
Modern policing traces its lineage to the early nineteenth century and the concepts espoused by Sir Robert Peel, the United Kingdom’s Home Secretary. Attempts in founding the London Metropolitan Police were met with opposition and distrust of an armed force to maintain order as an extension of the government. Peel’s guiding principle was that rather than an extension of the Government, “the Police are the Public and the Public are the Police.” It was about a good relationship and trust between the public and the police, working together to prevent crime and disorder. And, the test of police efficiency should be the absence of crime and disorder, not the visible evidence of police action in dealing with it. That was the beginning of community policing.

While there are many fine examples of community policing and crime prevention adoption, such as Japan’s Koban system and the Singapore Police Force, it has been more an exception than norm. In the 20th century, community policing seemed to give way to problem-oriented policing, with a focus on rigorous and effective methods to solve problems in crime and disorder, including methodology, tools and data; but not on community relationship let alone on prevention. In the early 21st century, problem-oriented policing evolved into intelligence-led policing. The focus was on integrated crime and criminal analysis, profiling of serious offenders, supported by an informed police command structure. While prevention was an objective, such actionable intelligence was mainly targeting at problems solving, with little focus on the community. That is now changing; we are seeing more and more police forces turning to social media as a way to engage with the community.

With advancements in analytical tools, intelligence-led policing soon led to today’s predictive policing (PredPol). This is about predicting crime and disorder before they happen, or when they are about to be committed. This allows police to mobilize and deploy the necessary resources to mitigate the threats. While PredPol does support prevention, its main value is in early detection. PredPol relies on past crime and criminal data, and thus assumes that the cause/reason of crime/disorder does not change.

Movie such as Minority Report and the sight of neighborhood police officers in military-grade weapons worsen the situation, leading to mistrust between the community and the police. Did we really prevent a crime/disorder or merely suppress its symptom?

Oracle began using the term “Social-Enabled Policing” in 2013 to represent the opportunity for policing and law enforcement agencies to embrace and leverage the growth of social networking and crowd-sourcing in the context of community policing.

Social-Enabled Policing supports the prevention, detection and solving of crime and disorder. It’s about community policing, intelligence-led policing and predictive policing. It’s made possible through social networking and crowd-sourcing, and the effects brought about by them, complementing traditional policing. Mere engagement of the community through physical police presence is insufficient, we need a holistic social strategy and social presence to listen, analyze, understand, engage and communicate with the community.

Oracle is at the forefront of Social-Enabled Policing. We offer complete solutions that can assist law enforcement agencies, leverage the power of social media to achieve better outcomes for the community. Our goal is to help you harness this wealth of new information to not only prevent and solve crime, but to achieve the objectives set forth by Sir Robert Peel of getting closer to the community. We live in a new world, but the principles remain the same “The police are the public and the public are the police”, however this we now need to combine both the physical and digital worlds.
Social Media is an Opportunity for Law Enforcement

We live in the age of the empowered citizen—always connected, always on-the-go, and always vocal. Social media usage, fueled by mobile growth, will transform the way citizens and businesses interact with law enforcement agencies. With the adoption of online banking, Facebook, Twitter and mobile applications, people expect to access commercial and governmental data and services online. Social networks empower citizens with the ability to learn, share, engage and let their voices be heard—all in real-time. Citizens are demanding more transparency from Law Enforcement. At any moment, millions of social conversations are underway globally. How many of those are about the services your agency is delivering?

In this new era, law enforcement agencies are working through the legal and business ramifications of social media, while improving responsiveness and transparency to citizens. It is not always easy as law enforcement agencies are often made up of siloed departments, which can make it a challenge to connect the dots and push out information in an organized fashion. Law enforcement organizations that embrace the opportunity to understand the value of social data and interactions across their service delivery channels will be able to deliver higher levels of service while meeting the transparency expectations of their citizens.

Much of the public perception of law enforcement is based upon stereotypes and misconceptions. However, agencies can utilize Social to highlight their organizations’ positive initiatives and events. Law enforcement agencies can market their accomplishments, and reach out for public collaboration while acknowledging and protecting privacy data. Social provides law enforcement agencies the ability to promote new innovation campaigns or gather feedback on an existing initiative.

Don’t forget that your employees have embraced the efficiencies and effectiveness of social networks to interact, learn, share and collaborate with family and friends. Similar to citizens, public servants expect the government to identify ways of leveraging social media as a new innovative channel they can use to serve citizens. Social enables effective outreach campaigns that can be leveraged as needs arise for both external and internal initiatives.

Enter Social-Enabled Policing

Today we are in the age of social networking and crowd-sourcing breaking down barriers, speeding up information exchange, giving rise to citizen journalism, people/consumer power and evolving human behavior (e.g. selfie, videos, chatting, sharing/liking as opposed to factual reporting). Furthermore, the bad guys are evolving and getting smarter. Rumors being mongered at the speed of Internet, herding effects, vigilante, flash mobs/rioting and looting. Individuals, organized crimes and even terrorists are “crime-sourcing” to help each other though they may not know each other. There are also many cases of criminals bragging about their illicit activities through social media, such as the Roast Busters in New Zealand. Are they plain stupid or openly challenging the authority through their newly found “social power”? Or is it a reality TV? Or even a competition as in gamification?

Even if they are out in the streets, young people today tend to be more aware of what’s happening on their smart devices and social networking world than in the physical environments. In the event of an incident, be it traffic accident or major fire, chances are
Oracle offers a complete solution that can assist law enforcement agencies leverage the power of social media to achieve better outcomes for the community.

Key capabilities include:

- Oracle Social Relationship Management
- Oracle Intelligence Hub & Alerts
- Oracle Integrated Policing Platform

the social generation will snap a photo, if not a selfie, or record a video and share it with their friends and connections across the multiple social networking sites they are subscribed to. Calling an emergency number may not be at the top of their mind, if at all. Try “air crash selfie” on Google. Likewise, the social community is contributing to Big Data by sharing lots of information and media that are of high value to police and law enforcement agencies.

Origin of Social-Enabled Policing Concept

It is precisely because of such behavior that the Boston Police Department (BPD) was able to quickly identify the two terrorists after the marathon bombings on April 15, 2013. BPD had been doing a great job in engaging the Bostonians through social networking before the attack. The “Return on Relationship” (ROR) was clearly visible when they sought help through various sites in a social and friendly manner. BPD received many tips along photos and videos, to help them identify the two terrorists. But the good officers of BPD had to put in days of laborious efforts to analyze such tips and OSINT (open source intelligence). Nonetheless, it was because of this unfortunate incident that Oracle conceived the idea of Social-Enabled Policing, and the need for technologies to empower such concept.

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It can be as simple as listening through social sites people expressing their concerns about dark alleys and unhappiness over rowdy neighborhood or frustration about a traffic jam; reporting a crime in progress; posting photos of looters in action; and even criminals bragging about their illicit activities. Social-Enabled Policing is not just about listening, analyzing and understanding the community. It’s also about taking prompt actions, engaging and communicating with the community. Examples include giving crime prevention advice, alerting on disaster, seeking information and assistance, updating police actions, and giving assurance. Strengthen the relationship through social networking and increase the ROR!

A point to note is that Social-Enabled Policing is not just about adoption of social networking technologies and collecting OSINT. It’s still about traditional community policing, intelligence-led policing and predictive policing, complemented by social media and social networking. It facilitates community sentiment analysis and fusion of OSINT with traditional data sources for better analysis, preventing or allowing early detection of crime and disorder. It allows the social-savvy generation to report incident and be engaged through multiple channels including social sites, 24x7. Social-Enabled Policing is also about removal of barriers and stovepipes, facilitating a lifecycle 360-degree view of the victim, witness, suspect and incident.
Oracle Solutions for Social-Enabled Policing

In addition to Twitter, Facebook, YouTube, LinkedIn, Instagram, Weibo, WeChat, Line and WhatsApp, there are millions of other social platforms including chat rooms, forum pages, reviews and news media. These platforms are both channels for engagement/communication and also sources for OSINT. Rather than individually connecting to such millions of platforms, Oracle offers a one-stop service through the Social Relationship Management (SRM) cloud service, which can provide more than 700 million messages per day.

Oracle SRM provides various analytical tools, including sentiment and demography, and even identifying top influencers. This cloud service comes with workflow and automation, triggering actions once a criterion is met. OSINT can be inputted to Oracle Intelligence Hub & Alerts and combined with traditional data sources for further analysis; or to initiate a crime investigation in the Oracle Integrated Policing Platform. The social community can be engaged and can be communicated to through multiple social platforms via the one-stop service provided by Oracle SRM.

Oracle’s Intelligence Hub & Alerts is a Big Data analytics solution. It fuses high volume and high velocity of structured and unstructured data, including OSINT inputted from Oracle SRM. The value of this solution is to provide insights on anomalies and patterns discovery. OSINT has high level of noises, untruths, sarcasm and hidden meanings. To reduce the level of false positives, various analytical technologies are deployed to filter away the noises, discover the unknowns and connect the dots. Technologies such as
Oracle Intelligence Hub & Alerts Capabilities

Big Data analytics solution that fuses high volume and high velocity of structured and unstructured data, to provide insights on anomalies and patterns discovery

- **Reduce the level of false positives:** various analytical technologies are deployed to filter away the noises, discover the unknowns and connect the dots
- **Discover the unknowns and connect the dots**
- **Supports** prevention, detection and solving of crime and disorder

Oracle Integrated Policing Platform

Enables agencies to have a single repository for all operational information used to support end-to-end processes and delivered to officers wherever they are, easing integration with partner agencies and ensuring efficient policing.

- **Information is easier to find and use at the front line:** Data is re-used, not re-entered
- **Management can make more informed, intelligence led decisions:** Improves response times and resource efficiency
- **Integrates information across entire justice process:** Simplifies sharing with courts and prosecution, and promotes sharing with partner agencies

Oracle Event Processing, Real-Time Decisions, Master Data Management, Semantic Analysis, Oracle Business Intelligence, Endeca Information Discovery, Big Data Appliance and Big Data Discovery. Oracle Intelligence Hub & Alerts solution, especially with Oracle SRM, supports prevention, detection and solving of crime and disorder.

Furthermore, Oracle provides an Integrated Policing Platform, which is an end-to-end rules-driven and adaptive case management solution allowing 360-degree view of the victim, witness, suspect and incident. It supports engagement of the stakeholders through multiple channels including social sites through Oracle SRM. It breaks down barriers and stovepipes present in a police/law enforcement agency, allowing end-to-end management of people, objects, locations and events from incident reporting to prosecution preparation. It is built on WebCenter Portal, ADF Mobile, Siebel Public Sector, Business Process Management, Oracle Policy Automation, WebCenter Content, etc. Oracle Integrated Policing Platform can truly meet the highest demands by the social-savvy generation, and allow proactive engagement with them through traditional and social channels.
The Argentine Federal Police is a good example of Social-Enabled Policing. They have invested in many Oracle technologies mentioned here, including the Oracle SRM cloud service, to improve their community engagement as part of community policing. They now have a better understanding of the public sentiments, and can earlier detect suspicious activities and even crime suspects. Their investment also allows them to incorporate new techniques in crime investigation and improve crime analysis.

**What are the main trends in data analysis in support of Social-Enabled Policing?**

Data analysis is not new and it has been used widely in intelligence-led policing (e.g. to identify a suspect) and predictive policing (e.g. to prevent a crime through proactive patrolling). Oracle has been enabling predictive policing too (e.g. Italy) for decades, after all, the company started as a security project. Oracle understands the difference between success and failure in predictive policing lies in the relevant data model. The Data model is built based on knowledge from experienced police/intelligence officers.

For example, why do robbery cases increase near a mall at month end? - Because there is an ATM in the mall and many workers in the neighborhood need to deposit their paychecks and otherwise access their accounts.

It's clear that traditional data analysis based on past incidents, crime records, intelligence, Call Detail Records (CDR), video surveillance and ANPR (automatic number plate recognition) is not sufficient. New threats with poorly understood root causes, dealing with entities with no prior records, and an inability to connect the dots. It's a case of "we do not know what we do not know".

This is where Big Data comes in. It's about fusion of many varieties of data: traditional, social and OSINT, and usually at high velocity with high volume. Oracle Intelligence Hub & Alerts solution is designed with that purpose, to provide insights on anomalies and patterns discovery. It provides valuable and actionable intelligence to the police officers; be it to prevent a threat, detect a threat, or mitigate a threat. To handle whitelist, Oracle Event Processing is used to pick up unknown entities real-time based on rules (e.g. a cell phone with no record being used in a suspicious way); Real-Time Decisions to detect abnormal behaviors; Master Data Management to connect seemingly different entities; Semantic analysis to uncover hidden meaning and infer relationship.
Endeca Information Discovery is particularly powerful to address the pain of “we do not know what we do not know”. It compliments traditional business intelligence based predictive policing. Endeca is a visualization tool to help discover correlations and anomalies. For example, we discovered why drug pushers were selling drugs near a designated police parking lot, because as per Standard Operating Procedure the officers were performing foot patrol elsewhere. And why a piece of land occasionally caught fire with no apparent reason, because of the army conducting exercise using blanks. Big Data Discovery is similar to Endeca Information Discovery, but works directly on a Hadoop environment such as the Oracle Big Data Appliance.

Although technologies like Hadoop and NoSQL offer specific ways of addressing big data problems, they can introduce data silos that complicate the data access and analysis needed to generate critical insights. Organizations need to evolve their data management architecture into a big data management system that seamlessly integrates all types of data from a variety of sources, including Hadoop, relational, and NoSQL. While simplifying access to all data, a big data management system should also enable organizations to leverage existing skills and maintain enterprise-grade data security and governance for sensitive or regulated information. The new Oracle Big Data SQL offers all these features.

In summary, fusion and analytics of Big Data through Oracle SRM and Oracle Intelligence Hub & Alerts solution, including Endeca Information Discovery, Big Data Discovery and Oracle Big Data SQL-driven big data management system are crucial in...
BARRIERS TO OVERCOME

Law enforcement agencies have concerns about privacy and the public’s perception. Privacy protections, and an important related topic – security, are important issues to address.

- **Proper judicial processes** need to be in place for police/intelligence agencies to access some of these usually privacy-protected data sources.

- **Exploiting even public data** may raise concerns of overreach.

- **Participating in the Social Community** can help police avoid the Us vs Them mentality.

support of Social-Enabled Policing, especially in the prevention, detection and mitigation of threats. Threats including crime, disorder, terrorism and even disaster.

What are the possible barriers to Social-Enabled Policing?

Many police and law enforcement agencies have concerns about privacy and the public’s perception. Indeed, privacy protections, and an important related topic – security, are important issues to address. As a nation develops, there will be increasing concerns over privacy infringements. Such infringements are counterintuitive to Social-Enabled Policing, where trust between the people and the police is paramount. Police and the government have to protect the privacy of their constituents. Laws, policies, governance, compliance and audit trail have to be in place allowing constituents to maintain their privacy. A law-abiding citizen should not be afraid.

However, in this world of cyber-facilitated crimes (e.g. pedophiles targeting victims through social networking, terrorists recruiting and enabling online), proper judicial process needs to be in place for police/intelligence agencies to access to some of these usually privacy-protected data sources. Strict governance and audit trail are needed to prevent and detect abuses. There is also a need for separation of duties. For example, United Kingdom has a National ANPR Data Centre; law enforcement/intelligence agencies follow strict guidelines on the use of such data. Likewise, CDR and Internet-Protocol Detail Records (IPDR) are preferably kept by the service providers in accordance with regulations or by a centralized retention agency with no law enforcement/intelligence responsibility. Access and usage of such data should follow a judicial process including proper court order.

As for OSINT, if a person does not shy away posting on social networking site publicly, he/she needs to understand that anyone, including marketing companies, government agencies and even criminals, can view such contents without his/her permission. Furthermore, Internet never forgets, although the owner can delete contents, they are likely to be mirrored, reposted, and even downloaded. In recent years, some countries have started passing legislations on “right to be forgotten”. It's important to point out that a cornerstone of Social-Enabled Policing is the ability to analyze public sentiments through such OSINT.

It is important to realize that one cannot uphold privacy without security. All the laws and policies point to the need for information security, such as the strong Security Inside Out offerings by Oracle, including infrastructure security, identity management, GRC (Governance, Risk & Compliance), cloud security and mobile security.
Secondly, there are concerns on costs, especially on the adoption of technology in support of Social-Enabled Policing. We need to understand that traditionally when a customer wants to build a system, they tend to buy the system in parts. They buy the network, the server, the operating system, the storage, the database, the middleware, the application, etc. They then pay hefty sum of money for these parts to be integrated.

Oracle has invested heavily in R&D for Engineered Systems (e.g. Exadata, Exalogic, Exalytics, Big Data Appliance) since five years ago. An “Engineered System” is essentially putting the different parts together and fine-tuning them for optimized performance in a single system in the factory. This eliminates much of the integration, tuning, and optimization that would otherwise fall upon the customer. One such customer migrated their intelligence application housed on 120 racks of traditional hardware/software to just 12 racks of Oracle Engineered Systems. In addition to reducing the total cost of ownership and increasing performance, such Engineered Systems are also more secure and easier to maintain. As such, Oracle is a leader in the new Gartner 2014 Magic Quadrant for Integrated Systems.

Increasingly citizens across the community turn to social channels to learn, engage and share information. Oracle takes a long-term strategic approach to social media – understanding that organizations want a range of best-of-breed social media capabilities, working in concert together, while integrating with other business systems. The social technology space can be overwhelming. Today, there are many social media management vendors in the marketplace all claiming to meet changing needs. The reality is most of the solutions are point solutions, meaning they offer one piece of the social solution. Organizations are then left to piece together three or four of these solutions to create a software suite that meets all their social media needs. A few enterprise software providers have attempted to piece together smaller point solutions to create a social media suite to handle a variety of social media activities. In reality, the tools within these suites are neither unified with each other nor integrated with other critical systems. As a unified and integrated platform, Oracle is ready to meet today’s social media management needs, with an eye towards the future, as law enforcement agencies evolve to extend social across every public touch point and throughout their organizations.