

Establishing an Analytics Culture in Public Safety

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The explosion of big data provides a vast new resource that can transform organizations, helping them build smarter systems that drive economic growth, sustainable development and societal progress.

In the world of public safety, big data comprises existing data often stored in disparate databases, including a wide range of sources, from arrest records to court documents and mug shots. Much of it is also text-based documents, police reports, and field reports to name a few. For many agencies, it can be difficult to make sense of this data in a meaningful way that can help solve and even prevent crime. Combined with the near infinite volumes of new data sources from the Web and mobile applications, this challenge is compounded further.

Sometimes lost in the big data discussion, especially in public safety circles, is the challenge of overcoming organizational cultural challenges in employing analytics as part of day-to-day operations. Renowned criminologist Jerry Ratcliffe suggests in his article, "Integrated Intelligence and Crime Analysis," that while analytical technology and analysts can be introduced into the organizational structure of police departments, the receptiveness of police departments to assimilate this information may be difficult.

Despite well-documented cases of this mindset being prevalent in some police organizations, the Vancouver Police Department did not encounter the issues reported by Ratcliffe.

Mindful of these challenges, the Vancouver PD approached the integration of analytics into its policing model in a way that was sensitive to both police experiential contributions, and the adoption of technology. The end goal: enhance existing programs rather than replace them.

Since deploying an analytics-led approach to policing in 2008 with IBM and Esri technology, the City of Vancouver has seen property crime rates drop city-wide per 1,000 residents by 24 percent, and violent crime rates decrease by nine percent from 2007 to 2011.

These results did not happen immediately. As Herb Brooks, the legendary hockey coach once said, “Great moments are born from great opportunity.” For the Vancouver PD, that opportunity was the 2010 Winter Olympics, an event with a significant focus on security and public safety. This “perfect storm” in terms of necessity and resources helped the Department advance and develop the value of an analytics-driven approach to policing.

From the outset, the issue was never the availability of data, but rather the integration of data from disparate sources and silos. Without a common data repository, officers lacked a comprehensive view of criminals, robberies, assaults or gang violence across jurisdictions and in different areas of the city. Making connections between seemingly unrelated data sets was difficult. It was also difficult, if not impossible, to mine and analyze data, and to identify crime patterns. As such, police couldn’t react and respond to crime trends as quickly as they wanted or get ahead of any emerging problems as soon as they surfaced.

The Vancouver PD developed and deployed a sophisticated crime and intelligence analysis system called the Consolidated Records Intelligence Mining Environment (CRIME). Using GIS mapping plus spatial, temporal and link analyses, the solution helps the department’s crime analysts make sense of location and event-related data. By tracking and mapping crime events and its movement over time, the department can better identify and understand any underlying patterns and trends common to a crime series, such as open, unmonitored parking structures that are known to a select group of property offenders. By identifying potential crime hot spots, the department can focus its police resources at these locations and direct efforts toward specific offenders, with the goal of preventing crime before it happens.

Further reinforcing the merits of the analytic contribution to the Department were a host of success stories that showcased the positive outcome and net return on the investment in technology and development of a professional analyst cadre. One example involved the successful identification and subsequent arrest of Ibata Hexamer. Hexamer had been preying on children throughout the metro area for a number of years, and was responsible for serial child sex assaults against six victims. Despite a year-long exhaustive investigation under the banner of a joint task force, no leads surfaced. As a result, an analytics team was assigned to the task force when the investigation had exhausted all other options. Within seven weeks, the team successfully identified the offender, which was later confirmed through DNA evidence. Hexamer was charged with 23 sex-related offenses.

Evolution of the Vancouver PD analytic services delivery model saw technologists and analysts as trusted members of the team. They are front and center throughout the decision-making process and analytics is used to determine how to effectively deploy officers, how to best assess situations, and how to plan for large scale events like the Winter Olympics. The evolution in the use of analytics saw a merging of technology and the analytic process in a way that complemented an officer's investigative knowledge, gathered from years of experience, rather than detracting from it.

Further supporting this initiative, the Vancouver PD has a management team who are technologically well-versed, progressive in building organizational capacity, and mindful of the merits of analysts working in conjunction with sworn members to deliver crime control strategies.



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<http://www.govtech.com/data/Establishing-an-Analytics-Culture-in-Public-Safety.html>