Orange County Sheriff’s Department Uses “Big Data”

*The Orange County Sheriff’s Department is using Microsoft Dynamic’s CRM in a new and creative way. by managing “big data” using this innovative approach, we are improving our internal operations as well as improving our service to the community.*

Orange County Sheriff’s Department

Population: 3.1 million

**Synopsis**

“One of the most significant barriers to effective problem assessment is the lack of data integration. Most government databases are not fused with one another, impairing our ability to establish causation and evaluate the concentration and interaction of problems over geographic areas.”[[1]](#footnote-1)

In April 2007, the Center for American Progress identified the above stated problem which often plagues city, county and state governments:

However, the Center also identified a few solutions:[[2]](#footnote-2)

* Close gaps in knowledge by harnessing new technologies to collect, analyze and disseminate key data.
* Focus on results by setting quantitative, outcome-focused goals, measuring policy performance, and comparing results among peers.
* Develop systems to ensure data is used to guide policy priorities and solutions.

In California, the Orange County Sheriff’s Department (OCSD) was no different. Five years ago, OCSD had few, if any, databases collecting information in key performance metrics. Without readily available data, policy decisions were made, training was conducted and practices were implemented without any understanding of their true effectiveness. With that in mind, the Department embarked on a process of creating databases and implementing procedures to use data when making decisions.

**Intent of the Project/Program/Service**

Inspired by how the corporate world has been able to target marketing efforts based on the information they gather on customers, the Orange County Sheriff’s Department is seeking to harness the power of ‘big data’. Like these corporations, we are using data to become a more effective organization. Instead of using customer data to customize advertising efforts, we are using employee performance data to set up an early-warning system that alerts managers to any employees who may be developing patterns of behavior that are potentially harmful to our organization. This includes tendencies to use force or be involved in traffic collisions more than what would normally be expected in the course of routine police work in our jurisdictions. We call our system the Personnel History Index (PHI).

For each employee, the PHI tracks six, risk-management related indicators: commendations and complaints, risk management claims involving the employee, traffic collisions, uses of force, Internal Affairs investigations and workers compensation claims filed by the employee. Each of these six components of the personnel history index has a threshold that, once reached, causes an automatic notification to be sent to an employee’s manager. The manager then looks into the matter, taking necessary steps to address any underlying issue causing the spike in high-risk behavior by the employee.

**Innovative Characteristics**

While such early-detection systems are not new to law enforcement, what is innovative about our particular system is the software we use, Microsoft’s Dynamics Customer Relations Management (CRM). To our knowledge, CRM has not been used by law enforcement in this manner. Historically, CRM has been used by companies to track interactions with customers such as orders placed, payments received, or customer complaint’s logged. The OC Sheriff’s Department broke new ground when we decided that CRM was the best solution to our challenge of tracking and monitoring employee performance across our six identified metrics.

Starting in May 2012, our department began customizing CRM to integrate our mismatched sets of tracking methods into a single, easy-to-mine database. Beginning with commendations and complaints, our department collaborated with a CRM vendor to gradually roll out each of the six components of the personnel history index over a 15-month period. Use of Force, the final component, debuted in July 2013. The Sheriff’s Department has already seen successes in the implementation.

In the first instance, the Department of Justice asked us for information on our use of a particular type of force and our use of force against a particular class of inmates. Using the data stored within the CRM platform, combined with the system’s accessibility, department employees were able to quickly pull the requested data. The report showed there was nothing problematic in our Use of Force policy or application.

In the second instance, CRM allowed our department to produce data that refuted media insinuations that our deputies were bad drivers. Our data showed that, on the contrary, our department has one of the lowest traffic collision rates in the area.

One of the most exciting features of CRM is its ability to pull together information across a variety of metrics, allowing our research analysts to identify correlations among employee behaviors that potentially could help predict when an employee is likely to begin behaving in a way that creates unnecessary additional risk.

Using CRM, we have been able to explore important questions such as:

Does an increase in the amount of force an employee uses bring about an increase in the likelihood of employee injuries?

What is the relationship, if any, between seatbelt use and employee traffic collision injuries?

We are finding that the answers to these questions are often counter-intuitive, challenging our assumptions about how to best manage risk throughout the department. It is our plan that these and other yet-to-be-discovered findings will guide our training and management, making us a more effective organization.

CRM is moving our department from reacting slowly to increased levels of risk, to reacting in a timely manner. Our goal is to eventually be able to respond proactively, averting risk before it even occurs.

CRM has also allowed us to easily track workflows. In the past, paper-based and obscure databases meant that it was difficult to determine who had to take the next step in completing a report. Now, each step of the workflow is shown in CRM. The system automatically notifies concerned parties, making it easy to see the progress on a report or incident. This ensures that data captured on an incident is complete and thorough.

**Outcomes**

Notable Results:

* 80% reduction in year over year use of force incidents in the city of Aliso Viejo.
* 34% reduction in the number of lost work days due to work comp injuries (aggressive back to work program).
* Reduction in Department-wide number of use of force incidents.
* Accurate and effective response to DOJ inquiry. Data base showed incidents of force, ECD’s and carotid control hold were extremely low and that force was not disproportionately applied to female inmates.
* Reduction of staff time necessary to respond to multiple requests for Public Records.
* Creation of single source of data. Elimination of conflicting data from multiple sources.
* Data used to refute/respond to negative publicity related to the department (Most recently, an O.C Register article on traffic collision data)
* Implementation of a completely paperless Worker’s Compensation reporting system that captures all W/C claims data, automatically distributes necessary documentation and make all necessary notifications.
	+ CRM analytics allow for customized dashboard and root cause analysis to identify problematic work locations and/or body part injuries.

**Applicable Results and Real-World Practicality**

The use of readily available data and the focus on improving data collection processes and retrievable systems has many significant benefits:

* Track results in training efforts to measure effectiveness
* Allow for comparative analysis
* Allow for causation studies
* Allow for Multi-variant regression analysis
* Predictive Analysis
* Forecasting Models
* Accurate measurement of policy effectiveness

In conclusion, implementing CRM has had the benefit of sending a clear message to our department that accountability and transparency are highly valued by our executive leadership. CRM’s robust ability to thoroughly capture data and its accessible graphical user interface have empowered managers to be alerted to and respond to concerns about employee behavior in a timely manner. Managers are able to customize dashboards to monitor areas of concern within the area they supervise. They are also able to view other areas of the department to gauge how they are doing relative to others. This has sent a clear message that transparency and openness are the new operating principles in our department.

1. Center for American Progress, Governing by the Numbers, Daniel Esty & Reece Rushing, April 2007 [↑](#footnote-ref-1)
2. IBID [↑](#footnote-ref-2)