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Final Copy of Case Study

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New York, NY, US

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2011

STATUS:
Laureate

CATEGORY:
Safety & Security

ORGANIZATION:
Charlotte-Mecklenburg Police Department

ORGANIZATION URL:
http://charmeck.org/city/charlotte/CMPD

PROJECT NAME:
CMPD Predictive Crimes Analytics

PROJECT OVERVIEW

The Charlotte-Mecklenburg Police Department (CMPD) provides police services for Charlotte and the unincorporated areas of Mecklenburg County, North Carolina. The department, which has 1,716 officers and 530 civilian staff, serves a population of more than 700,000 citizens. The goal of the Charlotte-Mecklenburg Police Department is to make Charlotte one of the safest large cities in America. To do that, it continually advances strategies that prevent crime and increase safety. This philosophy recently led CMPD to deploy business intelligence (BI) dashboards and predictive analytic technology from Information Builders. As a result of this BI solution, CMPD is better equipped to proactively fight crime with intelligent, timely, and complete information. Like most police departments, CMPD has been collecting data on criminal activity for many years. However, the department previously relied upon a manual process of sifting through 13 disparate data sources to analyze crime statistics, identify trends, and model resource allocations, so making sense of all this information wasn't easy. Users typically had to run multiple queries to be able to drill into the data and answer specific questions. CMPD Command staff recognized the need for improvement and sought funding through an Urban Area Security Initiative (UASI) Homeland Security Grant to finance the project. Once funding was secured, the City of Charlotte and CMPD performed an in-depth evaluation of software vendors in the marketplace via a formal procurement process. They selected Information Builders' LEA dashboard and predictive policing solution based on the technology's fit for CMPD and its successful track record in reducing crime and increasing officer efficiency, effectiveness, and safety at law enforcement agencies throughout the country. Information Builders' customizable off-the-shelf (COTS) software automates the analytical process and provides up-to-the-minute, graphical reports to police officers directly in their patrol cars. The solution includes Web-based key performance indicators, management dashboards, interactive-mapping capabilities, predictive analytics, and data mining to spot subtle trends and predict future outcomes. CMPD is also using Information Builders' WebFOCUS RStat BI and data-mining platform in conjunction with statistical models and algorithms from Fractal Analytics to

develop crime-forecasting applications. Using historical data of crime patterns, these predictive models tell the CMPD when and where they should deploy resources to fight specific types of crime. Implementing these models through WebFOCUS lets the police department drill down through data and reallocate officers to targeted areas to reduce criminal activity. While CMPD has always used data to understand trends, this is the first time the department is using a specific set of data from multiple sources to forecast future trends. The WebFOCUS RStat application enables CMPD supervisors to forecast crime and develop strategies to prevent it using statistical models based on historical crimes, calls for service, the nature of crime, population density, weather, special events, and more

SOCIETAL BENEFITS

The LEA solution enables law enforcement professionals to analyze past crime trends and patterns and identify criminals likely to repeat offenses. It also enables them to predict the likelihood of particular crimes due to factors such as geographic zones, particular dates, police shifts, city events and weather.

PROJECT BENEFIT EXAMPLE

Division Commanders, Captains, and Executive staff are receiving weekly reports in a more dynamic and proactive format. The reports are bundled and distributed based on their specific area of responsibility. Everyone from the management level on down uses the Predicative Crime Analytics system to prepare for meetings where crime statistics will be discussed including Compstat. For example, officers on patrol use the priority offender screen, which pulls all information stored about priority offenders and makes it available on laptop computers in the patrol vehicles. Previously, officers had to search different databases for different things (for instance, stolen vehicles or burglaries). Now they can find this information all in one place and obtain instant updates on the items that interest them. They can also get All Points Bulletins (APBs) and mid-shift information updates telling them to be on the lookout for certain people, places or events. The Sergeants can also put bulletins out instantaneously to let officers on patrol know what to focus on during their shifts. Previously, the communication of this type of information was delayed until a shift change. “Patrol officers have targeted information available at their fingertips for every call to service. This reduces the element of surprise and makes their jobs safer on a daily basis.” –Deputy Chief Harold Medlock of CMPD. “Information Builders’ dashboard and predictive analytics software allow staff at every level of the police department to deal with facts in real time. We are better equipped to optimally assign officers to response areas with the highest likelihood of criminal activity, resulting in reduced crime and lower operating costs.” – Chief Rodney Monroe of CMPD
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IS THIS PROJECT AN INNOVATION, BEST PRACTICE? Yes

ADDITIONAL PROJECT INFORMATION

CMPD created an operational data store (ODS) that combines information from the department's records management system (which houses all cases and criminal reports), computer-aided dispatch data (including 911 calls for service), arrest data, priority offender data, electronic monitoring information, probation data, gang data, warrants, property and evidence data, employee data, and pertinent information about special events, weather, and school calendars. The department has been collecting this information for more than a decade now, but this is the first time that data has been put into context and pushed out to the officers. New analytic dashboards eliminate manual reporting processes and consolidate report packages to make crime analysts more efficient, improving safety in Charlotte and Mecklenburg County. The information in these reports is role-specific, with delivery targeted to provide only relevant information to key players in a timely and efficient way. For example, weekly statistics are automatically delivered to division commanders every Monday morning reflecting their area of responsibility. Being able to identify subjects and catch them faster has helped improve police performance for CMPD. They can put out APBs on people or vehicles, which can shorten the span of time it takes to solve a crime. This application not only helps officers reduce crime but also ensures that police officers' time is used effectively. The ability to target areas where crimes might occur allows commanders to deploy officers proactively, increase safety, and reduce the number of calls for assistance. "Our officers don't have to sift through piles of data to figure out what to do. The system uses data to target the officers' activities and provides them with duties they can take action on immediately." – Chief Rodney Monroe of CMPD