

> Richmond Police Department

Law enforcement agency uses PASW Modeler* to increase public safety

Situation

The law enforcement community is increasingly inundated with information, while simultaneously facing reduced budgets and manpower. Waging war on terrorism has created the additional burdens of requiring compilation, analysis, and integration of even more information.

Critical issue

No analyst or team of analysts could swiftly and accurately sift through all the data to uncover patterns that might indicate, for example, how to best deploy forces to prevent crime or determine whether or not a threat is real. Like many police departments, the Richmond Police Department (RPD) needed a solution that could identify these trends and patterns both expediently and inexpensively.

Solution

The RPD turned to data mining, a powerful and inexpensive tool that allows analysts to identify actionable patterns and make high quality decisions by fully exploiting huge data sets. Specifically, they chose SPSS Inc.'s PASW Modeler solution because it does not require specialized personnel or advanced statistical training. As a result, both analysts and officers now use PASW Modeler to make better analytical, operational, and policy decisions.

Results

- Facilitated the deployment of officers to where they were most needed
- Identified minor crimes likely to escalate into violence
- Accelerated the criminal investigation process

At-a-glance

Country: United States

Industry: Government

City Founded: 1782

Organization Type: Public

Officers: 700

An additional 130 citizens serve in a variety of functions, such as crime analysts, forensics technicians, and crime prevention specialists

Operational Areas: Field services, investigative services, and special services

Application

Crime prevention

Solutions used

PASW® Modeler

* PASW Modeler, formerly called Clementine®, is part of SPSS Inc.'s Predictive Analytics Software portfolio.

Critical to crime fighting is the intelligent and timely analysis of the thousands of incident reports, crime tips, calls for service, and other data resources that police departments receive every day. Within this deluge of data lies the key to increasing the safety of the public.

Fortunately, like most human behavior, criminal behavior follows predictable patterns. For example, some criminals have geographic comfort zones or may commit crimes only at certain times of the day. These tendencies can be uncovered using data mining tools.

One of a small number of public safety agencies employing data mining in law enforcement, the Richmond Police Department uses PASW Modeler from SPSS Inc. as its data-mining tool. Under the direction of Chief André Parker and Crime Analysis Unit (CAU) Program Manager Colleen McCue, the CAU uses this software to analyze very large datasets for a variety of law enforcement applications, including crime analysis, behavioral analysis of violent crime, and deployment strategies.

“PASW Modeler and data mining represent a revolution in our ability to access previously unobtainable data, and pull meaning and value from it. This is as close to a crystal ball as we are ever going to get,” McCue said.

According to McCue, because PASW Modeler is “friendly, easy to use, and highly intuitive,” anyone can use it. Although the RPD crime analysts create the models, officers and command staff also use this software to improve their own police work. The ability to actively work on cases with live data enables operational and analytical personnel to put more “science” into their analytical, operational, and policy decisions.

Results

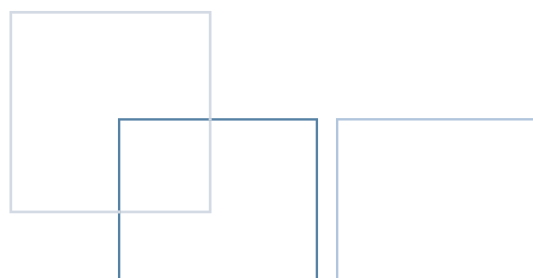
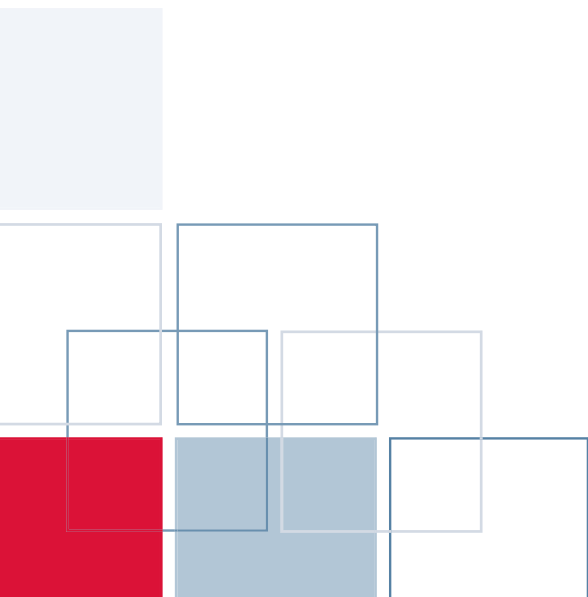
Facilitated the deployment of officers to where they were most needed

Personnel resource costs typically comprise a large percentage of any law enforcement agency budget. The ability to efficiently allocate and deploy these resources using an information-based decision process is not only cost effective, but also enhances public safety.

The RPD has two types of officers in the field: patrol and tactical units. While police on patrol generally respond to citizen-initiated calls for service, tactical units can be deployed proactively and mobilized for rapid response anywhere in the city.

☐ “With PASW Modeler, data analysis is easier than ever before.”

– Colleen McCue
Program manager of the Crime Analysis Unit
Richmond Police Department



■ Crime prevention

By investigating police dispatch data, the CAU used PASW Modeler to explore a vast array of factors, such as complaint time of day, day of week, priority, and geography, to create models that pinpointed areas of interest. This is far beyond what a single analyst, or even an analytical team, can accurately review. As a result, the RPD can place its tactical units—a scarce and expensive resource—where they are needed most, increasing community public safety while also conserving the department’s budget.

Identified minor crimes likely to escalate into violence

Using PASW Statistics Base and PASW Modeler to analyze Virginia’s criminal offender databases, the CAU identified a strong correlation between certain types of property crimes and escalation into sexual assault. Surprisingly, this correlation was greater than that between being a prior sex offender and sexual assault in some cases. The CAU validated this link by reviewing past cases, including the Southside strangler, who began his career with burglaries in Northern Virginia.

Accelerated the criminal investigation process

Crimes must be solved quickly or risk never being cleared. In addition, costs increase as a case is prolonged. PASW Modeler increases investigative efficacy by allowing the CAU to quickly sift through large data sets to generate investigative lead information. “With PASW Modeler, data analysis is easier than ever before,” McCue said.

□ “PASW Modeler and data mining represent a revolution in our ability to access previously unobtainable data, and pull meaning and value from it. This is as close to a crystal ball as we are ever going to get.”

– Colleen McCue
Program manager of the Crime Analysis Unit
Richmond Police Department

Drug-related homicides are typically harder to solve. Witnesses are reluctant to come forward, and there is frequently no relationship between the victim and the offender. Rapid development of a motive using PASW Modeler can, in many cases, facilitate suspect identification and apprehension before a case grows cold.

In the future, McCue envisions “24/7 semi-automated crime analysis” where “agent analysts” will be able to access crime models over the Web whenever they need them. No matter what the future holds, the Richmond Police Department, with the help of PASW Modeler, will be well positioned to protect the residents of Richmond.



For more customer stories, visit www.spss.com/success.

SPSS is a registered trademark and the other SPSS Inc. products named are trademarks of SPSS Inc. All other names are trademarks of their respective owners. © 2004 SPSS Inc. All rights reserved. RPD05-0209