A data-driven software tool for enabling cooperative information sharing among police departments

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Abstract

Police departments utilize information technology for combating crime, however, mostly for tactical purposes. This paper presents an Artificial-Intelligence software, Crime Similarity System (CSS) that helps police departments develop a strategic viewpoint toward decision-making. CSS utilizes socioeconomic, crime and enforcement profiles of cities to generate a list of communities that are best candidates to cooperate and share experiences. By providing a list of relevant similar communities from whom past experience and learnings can be shared, this tool offers the potential for proactive management. CSS provides a user-friendly front-end enabling easy usage. Camden, NJ and Philadelphia, PA police departments were partners in this development effort. Feedback from these two police departments has validated the benefit of this software in uncovering opportunities for police departments to cooperate. An evaluation using human subjects showed that the CSS software provided significantly better support than a conventional database. The modeling framework developed in this work is versatile, potentially useful for applications beyond law enforcement. © 2002 Elsevier Science B.V. All rights reserved.

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1. Introduction

"Probably the single greatest technical limitation on the criminal justice system’s ability to make decisions wisely and fairly is that people in the system often are required to decide issues without information" (Katzenbach, 1967). Information technology for law enforcement has improved significantly since those words were written. Now police managers regularly retrieve and use information on crime patterns, responses to calls for service, vehicle locations, personnel, finances, and various aspects of departmental performance (Northrop et al., 1995). Emerging technologies in data collection and usage have opened possibilities for police departments to develop and test new problem-solving techniques (Block et al., 1993). However many of these policing trends, such as