

## Chapter 25

# The Impact of a BI-Supported Performance Measurement System on a Public Police Force

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### **ABSTRACT**

*Performance measurement, as an effective tool for implementing organizational strategy and assisting ongoing control and surveillance, is broadly adopted today. The performance measurement system (PMS) explored in this case study was implemented, using business intelligence (BI) technologies, for a public police force. The system lets police commanders view and analyze the performance scores of their own units and get feedback on the success of their activities. The study examines the system's impact, through analysis of the metric results over a time period of five years. The results show that the vast majority of the metrics examined indeed improved. Further, the results underscore the moderation effect of relative metrics weights, as well as the different behavior of metrics that reflect activity versus those that reflect outcomes. The study underscores both the positive and the negative aspects of those results, and discusses their implications for future PMS implementation with BI technologies.*

### **INTRODUCTION**

The common saying “What gets measures, gets managed”- attributed to Peter Drucker (1955), the influential management thinker – reflects the importance and the benefits that are attributed to organizational performance measurement as a managerial tool. Performance Measurement Systems (PMS) are information systems (IS) that collect and store performance-measurement data, process the data toward producing insightful analyses, and distribute these analyses throughout the enterprise. Such systems may assist implementing organizational strategy, align employees with the derived targets and goals, and act as an effective tool for control and surveillance. PMS implementation is often based on Business-Intelligence

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(BI) technologies. The common BI infrastructure - Data-Warehouse servers, Extraction-Transformation-Loading (ETL) utilities, and tools for data retrieval, visualization and analysis - can help integrating data resources and provide means for viewing and analyzing them toward gaining important business insights - capabilities that are critical to the success of a PMS.

Studies have suggested that, in the long run, these important benefits will have a positive impact in organization's performance. However, even though PMS have received considerable research attention, the claims regarding their major impact on organizational performance are yet to be supported by rigorous evidence. Following a comprehensive survey of performance measurement literature, Bourne (2008) suggests that a significant contribution to the study of PMS should approach organizations that operate comprehensive PMS, which cover a broad range of units and processes. He also recommends that such studies should be based on detailed real-world data rather than on surveys, and should take a longitudinal approach by examining the performance in several points of time. The study contributes to that end and follows those guidelines, by exploring the impact of a PMS in a real-world setting. It explores a comprehensive PMS that covers the entire organization, reflects a large variety of processes and activities, and uses the data that was collected in the system over a long period of time. The PMS explored, named "MENAHEL" ("Manager" in Hebrew, and also an acronym for "A System for Analysis and Evaluation for the Commander"), was developed by the Israeli Police Forces and became operative in 2006. The system embeds a large number of performance metrics, each reflecting a key aspect of police activity. Using the system, which was implemented with advanced Business Intelligence (BI) utilities, police commanders can view and analyze the measurement results for their own units, compare them to the overall performance, and get feedback on their success. Based on testimonies from police representatives, the system had major impact on work processes within the organization, and its contribution is well recognized.

The study described here attempted to confirm those claims for major impact through an in-depth investigation of the behavior of metric results over time. The analysis was based on a comprehensive dataset provided by the Israeli Police, which included monthly results of 70 performance metrics for all units over a 5-year period (12 monthly scores per year, 60 scores overall per metric). The results strongly supported the claims regarding positive impact, as with the vast majority of the examined metrics the performance results have indeed improved. Further, the results confirmed a preliminary assumption that the relative weights of the metrics moderate the improvement - i.e., a positive correlation between the relative weight and the performance gain. The assumption that metrics that reflect activities will act differently than metrics that reflect outcomes has also been supported. The next section reviews previous research of PMS, the use of BI technologies for their implementation, and their organizational impact. The following section introduces the development of the theoretical model that directs this study and the derived hypotheses. Next the data collection and preparation procedures are discussed, as well as the analysis methods - followed by a discussion of the results on their implications. The concluding section summarizes the study, highlights its key contributions and the insights gained, and discusses possible directions for future research.

## **BACKGROUND**

Performance measurement, a common practice in organizations today, has attracted substantial research in recent decades, as well as much discussion by practitioners. It is considered as a field of a broad

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