Chapter 86

Performance Measurement in Public Networks:
Developing a PMS for Network Actors and Network Managers

Deborah Agostino
Politecnico di Milano, Italy

Michela Arnaboldi
Politecnico di Milano, Italy

Giovanni Azzone
Politecnico di Milano, Italy

ABSTRACT

This chapter outlines the development of a PMS (Performance Measurement System) to support the management and evaluation of public networks from the perspective of the individual actors operating within the network and the managers with responsibilities over the activity of the entire network. The study concerns two systems, the first, called "PMS accounting for network effects", evaluates the network from the angle of individual organizations in charge of operations within the network and is, therefore, intended as a support for management within the network. The second system, called "PMS accounting for the network as an entity", evaluates the networks from the viewpoint of the network manager in charge of the whole network; this system is meant to support the management of the network itself. Both the systems are based on the multi-layered concept of a public network and make use of individual components that constitute a PMS.

INTRODUCTION

Public networks, nowadays, are widespread organizational structures providing public services from healthcare and culture to public transport and education. Their emergence is often linked to the privatization and "agentification" processes that evolved from New Public Management (NPM) (Hood, 1991, 1995), which led to the inception of the logics of competition, although, at the same time, this created higher fragmentation in the provision of public services. Managing networks has long been recognized as a complex issue (Chisholm, 2008) for several reasons. First, there are decision-making difficulties involved in defining the network objectives and aligning the actors' objectives to the common network goal (Koppenjan & Klijn, 2004). Second, motivational difficulties can arise when trying to align the actors' strategies and actions (Keast, Mandell, Brown, & Woolcock, 2004), and, last, network measurement has become more complex in terms of defining the criteria to evaluate networks (Kenis & Provan, 2009) and identifying the network actor who is accountable overall (McGuire & Agranoff, 2011). It is now obvious that new management skills, strategies and governance tools are necessary for the success of the network (Agranoff, 2006; Crosby & Bryson, 2010; Silva & McGuire, 2010).

In this context, many authors (e.g. Provan & Milward, 2001; Mandell & Keast, 2007; Agostino & Arnaboldi, 2015) claim that Performance Measurement Systems (PMS) are a valuable tool to manage network complexity, helping with aspects such as decision-making, coordination and motivation. Moving from an organizational setting to a network setting does, however, require making changes to the underpinning logic and components of traditional PMSs (Kenis & Provan, 2009; Barretta & Busco, 2011; McGuire & Agranoff, 2011; Marques, Ribeiro, & Scapens, 2011). Starting from previous theoretical contributions on the concept of public networks and the elements that constitute a PMS and, on the basis of empirical evidence from different public networks (e.g. Mandell & Keast, 2007; Arnaboldi & Spiller, 2011; Agostino, Steenhuisen, Arnaboldi, & de Bruijn, 2014; Guo & Kapucu, 2015), this essay provides a conceptual framework for designing and analyzing PMSs in public networks.

More specifically, the objective of this chapter is to develop a PMS for public networks that can serve both the perspective of the individual organization operating within the network and that of the network manager in charge of the entire network. The structure of the PMS and how it differs from a traditional system involving individual public organizations are aspects that will be discussed, together with suggestions about how it can be designed and implemented, and finally providing future research directions mainly related to the exploitation of Web 3.0 technology.

The chapter is articulated into five sections. The first section introduces the two basic pillars as the basis of our arguments: public networks with their distinctive elements and the components constituting a PMS. The second section begins by conceiving a public network as a multi-layered system and then discusses the proposed PMS models for individual network actors and for network managers. The third section makes use of the insights gained from previous empirical studies on PMSs in public networks to discuss the validity of the model and provide recommendations on how to design and implement a network PMS. Finally, directions for further research and conclusions close the chapter.

Related Content

Decision Support for River Quality Management: The REKA Model in Bulgaria

James M. Hamlettand C. Gregory Knight (2010). *Decision Support Systems in Agriculture, Food and the Environment: Trends, Applications and Advances (pp. 1-20).*

www.irma-international.org/chapter/decision-support-river-quality-management/44753

A Text Mining Approach Agent-Based DSS for IT Infrastructure Maintenance

Sidhamed Elandaloussi, Pascale Zarateand Noria Taghezout (2021). *International Journal of Decision Support System Technology (pp. 1-21).*

www.irma-international.org/article/a-text-mining-approach-agent-based-dss-for-it-infrastructure-maintenance/282132

D-Sight: A New Decision Making Software to Address Multi-Criteria Problems

Quantin Hayez, Yves De Smetand Jimmy Bonney (2012). *International Journal of Decision Support System Technology (pp. 1-23).*

www.irma-international.org/article/sight-new-decision-making-software/75117

Cloud-Based Big Data Analysis Tools and Techniques Towards Sustainable Smart City Services

Suresh P., Keerthika P., Sathiyamoorthi V., Logeswaran K., Manjula Devi R., Sentamilselvan K., Sangeetha M.and Sagana C. (2021). *Decision Support Systems and Industrial IoT in Smart Grid, Factories, and Cities (pp. 63-90).*

www.irma-international.org/chapter/cloud-based-big-data-analysis-tools-and-techniques-towards-sustainable-smart-city-services/282427

Open Data

(2020). *Utilizing Decision Support Systems for Strategic Public Policy Planning (pp. 109-120).*

www.irma-international.org/chapter/open-data/257622