Chapter 66

Big Data and Innovation in the Delivery of Public Services:
The Case of Predictive Policing in Kent

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ABSTRACT

This chapter aims to discuss the role of Information and Communication Technologies (ICTs)—especially of the so-called Big Data—in the innovation of public service delivery. After reviewing the relevant literature on innovation and innovation diffusion in the public sector and the rise of Big Data, the chapter presents a narrative of the case of the adoption and implementation of predictive policing in Kent County Police, UK, as an instance of (early) application of Big Data in public sector organizations. On the whole, the analysis of the case suggests that past conditions and adoption strategies play an important role in the introduction and acceptance of innovative work practices that exploit the potential of contemporary ICTs.

INTRODUCTION

In the next decades, we may witness the emergence of more challenging social, economic, and political issues than the governments have been used to tackle so far. Contemporary trends, such as the booming digitalization of social activities, the growing call for transparency and public participation, and the increasing stress on public finance will most probably call for more advanced ways of providing public services than is generally performed nowadays. Within such scenario, public sector organizations need to develop and cultivate the capacity to innovate their 'business processes' (the ways of delivering public services) and 'products' (the kind of quality of public services) if they are to enhance governments' capacity to cope with the expectations of citizens and local communities. One way to fulfill this requirement is to develop strategies for searching, adopting, and implementing new technologies that can be effectively employed in the delivery of public services.

Among current sources of technological change and Information and Communication Technologies (ICTs) in particular, the emergence of so-called Big Data – that is, of datasets that are so large in size that they cannot be captured, stored, managed, and analyzed through typical database software – seems particularly relevant. Big Data are formed through the recording and storage of traces of various acts performed by several individuals over time, such as financial transactions, social media traffic, health records, and GPS coordinates, often by means of mobile tools (Manyika et al., 2011). Big Data are typically generated in digital format, are passively obtained as 'by product' of daily activities and interactions, are collected automatically when data is generated, and are geographically and temporally traceable (UN Global Pulse, 2012). Typically, Big Data are controlled by financial, telecom and Internet companies, although recently also the governments and non-profit organizations have increasingly paid attention to the creation and use of such datasets.

Various works have highlighted that Big Data provide enormous opportunities for designing and delivering more efficient and effective public policies (Bollier, 2010; Boyd & Crawford, 2012; Manovich, 2011). Big Data may enable public authorities to detect early signs of emerging phenomena (e.g., disease spread), monitor social behavior (e.g., response to emergency), measure behavioral or economic impact of policy measures (e.g., traffic congestions or credit card expenses), and pick the 'sentiment' of communities (e.g., through the analysis of blogging topics and crowd-sourcing). By means of advanced statistical and computational techniques, public sector analysts may unveil patterns and anomalies within these large socio-economic datasets that may not be ordinarily evident on the basis of 'conventional' information channels. Big Data, then, potentially enable the production of information that can be used for innovating processes and products of public sector organizations in ways that have not been accessible so far.

This paper aims to discuss the role of Big Data in the innovation of public service delivery on the basis of the case study of the adoption and implementation of predictive policing in Kent County, the UK, taken as an early instance of application of Big Data in the public sector. Originally developed in Los Angeles and Santa Cruz (California), predictive policing is a system for analyzing past offence records and providing police officers with indications of the likely areas and time of criminal activity on daily basis. The case will show the rationales for the adoption of productive policing, the organizational interventions made for inserting the technology into existing work practices, and the perceived effects on service delivery. More generally, the case study will provide some explanatory arguments that are used as a basis for discussing how public sector organizations may grasp the opportunities offered by Big Data for improving public service delivery (Albury, 2005; Hartley, 2005; Jun & Weare, 2010; Osborne & Brown, 2011; Rashman & Radnor, 2005).

Innovation in Public Sector Organizations: The Rise of Big Data

During the last decades there has been a growing interest towards innovation in the public sector. Several scholarly works have addressed issues about what innovation in the public sector is, what stimulates innovation and its diffusion, and what are the effects of innovation on the efficiency and effectiveness of public service programs (Albury, 2005; Altschuler & Behn, 1997; Borins, 1998; Hartley, 2005; Moore, 2005; Moore & Hartley, 2008; Mulgan & Albury, 2003; Osborne, 1998; Osborne & Gaebler, 1993). Innovation is typically regarded as an important mean to attain improvements in the provision of public services, both in terms of enhanced quality of service delivery and of increased responsiveness to the needs and aspirations of citizens and users (Moore & Hartley, 2008).

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