

The changing face of a city government: A case study of Philly311



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ABSTRACT

This study explores the transformation of a city government led by a 311 program, which provides a consolidated channel for non-emergency services and information. The paper first discusses the concept of “smart city” as a foundation for the examination of the 311 non-emergency contact program as a practice of government innovation, and then presents the details of the 311 program as instantiated in the City of Philadelphia. In-depth interviews with Philadelphia City government officials and managers responsible for creating and operating the City's 311 non-emergency contact program (Philly311) offer practical insights into the contributions the program is making to a more efficient, effective, transparent, and collaborative city government.

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1. Introduction

The phrase “smart city” is used more and more regularly by elected officials, civil society, the private sector, and academia. Nevertheless, there is no agreed-upon description of what “smart” implies in the context of a single city. Some conceptual studies (Allwinkle & Cruickshank, 2011; Boulton, Brunn, & Devriendt, 2011; Chourabi et al., 2012; Hollands, 2008; Nam & Pardo, 2011a,b) understand a city's smartness as an aggregation of improvements in infrastructures, public services, and a variety of urban resources and assets. Smart city strategies—e.g., integrating critical infrastructures and services, consolidating systems, and interconnecting networks—are emerging as responses to complex problems such as crime, health concerns, pollution, deteriorating infrastructure, and traffic congestion, that cities are currently facing due to dense congregations of people in spatially limited areas (Washburn et al., 2010). The desirable status of being “smart” is an outcome sought by the public and city officials alike. In this sense, increasing attention is being paid to city governments who are successful in transforming their cities through “smart city” initiatives. Discussions and research of smart cities increasingly highlight the characteristics of city governments that make their city smarter (Chourabi et al., 2012; Nam & Pardo, 2011a,b).

Adopting the view of a smart city as one that has a smarter government, this study raises two research inquiries: 1) *What does being smarter mean in the contexts of a city and a city government?*; and 2) *How does a smart city initiative make a city and a city government smarter?* To answer these questions, the paper employs a case study

of Philly311 (the City of Philadelphia's 311 non-emergency contact program) among a variety of current practices representing government efforts to make cities smarter. A non-emergency contact program is basically a local telephone exchange communication system that allows people to access non-emergency local government information and services by dialing an abbreviated telephone number (e.g., 3-1-1 in the U.S. and Canada, 1-2-0 in Seoul, Korea, 1-2-3-4-5 in Shanghai, China, 1-9-9-9 in Taipei, Taiwan, and 1-1-5 in Germany). The extension toward a multi-channel contact center incorporates phone, web, email services, social media, and newer technological capabilities. This system is usually equipped with Customer Relationship Management (CRM), which refers to a software application that allows governments to track interactions with residents on an ongoing basis and manage amounts of data and information effectively (Fleming, 2008; Richter, Cornford, & McLoughlin, 2004; Schellong, 2008). The 311 non-emergency contact program in North America consolidates the government phone number (and also other channels) into one 24-hours, 7-days-a-week (sometimes flexible in operation hours changing with citizen needs) call center staffed by specialists (not simply call-takers, but rather customer service representatives) trained to answer all questions and follow through on work orders and permit requests (Chen, 2010; Reddick, 2009, 2010, 2011).

The concept of a “smart city” is used as a foundation for the examination of the 311 non-emergency contact program, which is a practice of governmental innovation in the way government operates and government connects with citizens. Philly311 is one of the city government's flagship initiatives being carried out to make the city smarter. A case study based on qualitative data from semi-structured interviews with the city's executives, Philly311 staff, and managers of other related departments allows for a close investigation of how the Philly311 program is helping make Philadelphia a smarter city.

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The remainder of this paper is structured into six sections. Section 2 draws on recent research to outline the characteristics of a smart city and a smart government. Section 3 presents the methodology used in the study and introduces the case. Section 4 presents the case analysis with a particular focus on changes observed in city management and service delivery in the City of Philadelphia. Section 5 discusses challenges the city faces in operating Philly311 and also opportunities Philly311 offers. Section 6 suggests policy recommendations drawing from the analysis on Philly311 as one instance of smart city initiatives. Section 7 concludes this paper.

2. Conceptualizing smart city and government

This section introduces a set of working definitions of a smart city, followed by a review of the core components constituting the concept of a smart city derived from both academic research and practical research. Then we discuss how a smart government is recognized as one of the core capabilities of a smart city. Finally we suggest a simple metrics to assess a smart government program. Fig. 1 illustrates the research framework of this study.

2.1. Smart city

Table 1 describes some working definitions of a smart city found in literature. These definitions share common features as well as have unique aspects. For example, while Giffinger et al. (2007) view a smart city as one performing in a “forward-looking” way, the Natural Resources Defense Council considers “smarter” as more efficient, sustainable, equitable, and livable. Harrison et al. (2010) conceptualize a smart city in a technological sense as instrumented, interconnected, and intelligent. Similarly, Washburn et al. (2010) see a smart city as intelligent, interconnected, and efficient. The definitions of Anavitate and Tratz-Ryan (2010), Harrison et al. (2010), and Washburn et al. (2010) each emphasize the role of information and communication technologies (ICTs). The technologies include smart computing (Washburn et al., 2010) and a range of instruments such as sensors, kiosks, meters, personal devices, appliances, cameras, and smart phones (Harrison et al., 2010). Technology is central to defining a smart city, but a smart city is not built simply through the use of technology. Technology is a means to enable social, environmental, economic, and cultural progress. Smart cities thus must be capable of sustaining such progress across the diversity of city components (Allwinke & Cruickshank, 2011; Hollands, 2008). Along with this view, Nam and Pardo (2011b) characterize smart

Table 1
Working definitions of a smart city.

<ul style="list-style-type: none"> • “An urban area functioning and articulated by modern information and communication technologies in its various verticals, providing ongoing efficient services to its population” (Anavitate & Tratz-Ryan, 2010) • “A city well performing in a forward-looking way in economy, people, governance, mobility, environment, and living, built on the smart combination of endowments and activities of self-decisive, independent and aware citizens” (Giffinger et al., 2007, p. 11) • The foundational concepts are instrumented, interconnected, and intelligent city. “Instrumented refers to sources of near-real-time real-world data from both physical and virtual sensors. Interconnected means the integration of those data into an enterprise computing platform and the communication of such information among the various city services. Intelligent refers to the inclusion of complex analytics, modeling, optimization, and visualization in the operational business processes to make better operational decisions” (Harrison et al., 2010, p. 1) • “A city striving to make itself ‘smarter’ (more efficient, sustainable, equitable, and livable)” (Natural Resources Defense Council: see smartercities.nrdc.org) • “The use of smart computing technologies to make the critical infrastructure components and services of a city—which include city administration, education, healthcare, public safety, real estate, transportation, and utilities—more intelligent, interconnected, and efficient” (Washburn et al., 2010, p. 2)

city initiatives as urban innovation in not just technology but also management and policy.

Washburn et al. (2010) highlight seven key areas where cities are investing in becoming “smarter” including city administration, education, healthcare, public safety, real estate, transportation, and utilities. Giffinger et al. (2007) identify six key aspects of a city where smart cities are seeking to have an impact from their investments: economy, people, governance, mobility, environment, and living. Chourabi et al. (2012) put forth eight components of a smart city: technology, management and organization, governance, policy, people and communities, economy, built infrastructure, and natural environment. In sum, a smart city is defined with the meaning of smartness penetrating the urban context, the role of technologies in making a city smarter, and focal domains (infrastructures and services) that need to be smarter.

City ranking tools and frameworks merit attention as comprehensive sets of smart city components. The ranking system to score European medium-sized cities includes six categories of smart city evaluation indicators (Giffinger et al., 2007; also see www.smart-cities.eu): economy (competitiveness), people (social and human capital), governance (participation, transparency, and the functioning of the administration), mobility (transportation and ICT), environment (natural resources, environmental protection, and sustainable resource management), and living (quality of life, cultural facilities, health, and safety). IBM’s core city systems are categorized into three systems (Dirks & Keeling, 2009; Dirks, Keeling, & Dencik, 2009): operating systems (city services system comprising public service management and local government administration), user systems (citizens system comprising health, education, public safety, and business system), and infrastructure systems (transportation, communication, water, and energy). Forrester Research (Washburn et al., 2010) suggests seven critical infrastructure components and services including city administration, education, healthcare, public safety, real estate, transportation, and utilities.

2.2. Smart government

One of smart city components penetrating the smart city literature and city ranking frameworks is a smart government because a city government is a central actor that plays a pivotal role to lead and coordinate smart city initiatives and efforts. The concept of a smart government comprises public service management and local government administration. Thus city management and city services are identified as two main dimensions of a smart government. Nam and Pardo (2011b) consider a smart city in the aspect of government management as enhancing efficient, effective management both in front-office and back-office

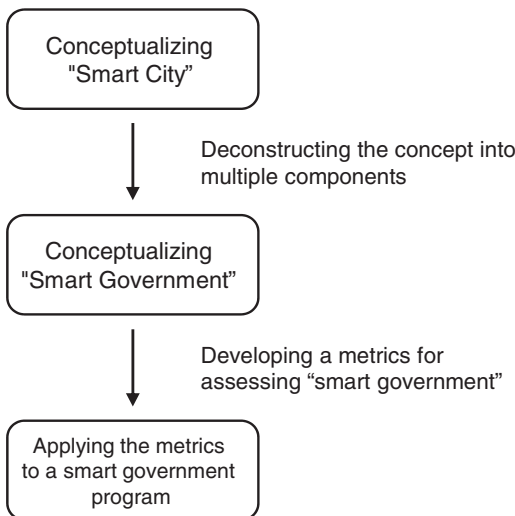


Fig. 1. The framework of this research.

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