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ABSTRACT

Through a case study of the City of Philadelphia's 311 service, Philly311, this paper creates new understanding about city-level service integration enabled by a 311 service center. The papers looks at how the capabilities of 311-enabled service integration influence the city government in both citizen-facing and internal management. The analysis is based on findings from semi-structured interviews with city executives, staff of the Philly311 contact center, and representatives of departments related in various ways to Philly311. The Philly311 contact center serves as a front door to municipal services for residents, businesses, and visitors, the service itself enhances transparency and accountability of service delivery by empowering citizens to engage more easily in their neighborhoods and communities. Philly311 has allowed the city to gain new efficiencies and increased the effectiveness of many programs by using data captured through the 311 system to monitor performance and inform resource allocation decisions. Interdepartmental collaboration and cooperation is considered central to the ability of Philadelphia to achieve these benefits.

Keywords

311 service, service integration, shared services, service level agreement, e-government, city government.

INTRODUCTION

3-1-1 is the nationwide abbreviated dialing arrangement for non-emergency access to local government services in all US jurisdictions. 311 systems, first launched in Baltimore in 1996, have rapidly spread across the US and similar systems are in place and being considered in many localities throughout the world. These systems provide quick and easy access to non-emergency municipal services and information through a single, consolidated channel. The channel extends from the three-digit toll-free dial number to any possible means that the public can easily use to communicate with their municipal government—for example, email, text messaging, social media (Twitter), and more recently smart phone applications in some cities. In our view, 311 service centers are comprised of a city government agency that manages the consolidated channel and a suite of systems encompassing a call center, digital media for communication, and in some cities such as Philadelphia, a walk-in center.

311 service centers are becoming a core driver to integrating municipal services. Service integration capabilities created by 311 service centers are categorized into two facets: citizen-facing and organizational/managerial. The public see 311 service as a contact center and as easier and more convenient access to city hall. Not only do 311 service centers integrate frontline services, they also create capabilities for shared services in internal work processes. While a shared service center has recently emerged as a powerful form of gaining efficiencies, 311 service centers as an instance of shared service centers may exert more effects—the improvement in customer relationship management (CRM) and performance management—beyond increased efficiency (Bergeron, 2003; Dollery and Akimov, 2008; Walsh, McGregor-Lowndes and Newton, 2008).

311 service needs to be considered an important and timely research topic as city governments are increasingly investing in the belief that 311 systems are one of the keys to serving citizens and customers (both internal and external) in new and innovative as well as more efficient ways. However, so far only a handful number of studies have paid attention to 311 service (Holzer, Schwester, McGuire and Kloby, 2006; Reddick, 2010, 2011; Schellong, 2007; Schellong and Langenberg, 2007; Schwester, Carrizales and Holzer, 2009). Both current academic research on 311 service programs and professional reports are contributing to current knowledge about 311 systems, however, the academic contributions generally addresses technical properties and improvements strategies for Customer Relationship Management (CRM) rather than more broadly to the policy and organizational context surrounding 311. Practical reports as well such as those produced by the International City/County Management Association's case study series (see www.icma.org/311) create useful knowledge worthy of sharing across cities and offer valuable lessons for city governments. This paper begins to fill the gap in current knowledge with a particular focus on 311 systems and institutional and organizational changes in city government.

This study focuses on the City of Philadelphia's 311 service center (hereafter Philly311) as a research case. Though Philadelphia is the last city of its size in the U.S. to introduce a 311 system, the three-year old 311 service center is contributing to transforming the city government by consolidating frontline services and providing shared service capabilities for the back office operation. Through a case study of Philly311, this study purports to create new understanding about city-level service integration enabled by means of a 311 service center. Two research questions are addressed: 1) *How do the functions of the 311 service center influence interactions with citizens?*; and 2) *How do the functions of the 311 service center influence city government?* To inform these questions, the authors conducted semi-structured interviews with selected individuals related to Philly311. By reflecting on what we learned from the interviews, this study ultimately suggests a simple model that can help cities understand the impact of service integration capabilities created in the process of standing up the a 311 system. The paper unfolds as follows: the next section reviews the literature of service integration, the subsequent section describes the research method and the case of Philly311 itself. The result of the qualitative data analysis is then discussed and, a preliminary model to understand service integration enabled by Philly311 is introduced. The final section addresses concluding remarks.

UNDERSTANDING OF SERVICE INTEGRATION

Four streams of research pertinent to "service integration" within a government have been identified; human and social service, shared service, e-government, and citizen-centric service. This research is presented below in terms of these four streams and then discussed.

Human Service Perspective

The term "service integration" in government has been used in the social and human service fields since the middle of 1960s: for example, the earliest efforts made by the US Department of Health, Education, and Welfare's Services Integration Target of Opportunity and Partnership projects (Agranoff, 1991; Hagebak, 1979; Hassett and Austin, 1997; Kagan, 1991; Waldfogel, 1997). The question of how to improve the delivery of human services, adequately respond to multi-problem clients, and reduce fragmentation, duplication, discontinuity, inaccessibility and unavailability of services has concerned scholars and policy makers (Agranoff, 1991; Kahn and Kamerman, 1992; Myrtle and Wilber, 1994; Polivka, Imershein, White, and Stivers, 1981; Sowa, 2008: 300). In 1992, Kahn and Kamerman (1992) defined service integration in the context of human service integration as: "A systematic effort to solve problems of service fragmentation" with the goal of creating a "coherent and responsive human services system" (p. 5). O'Looney (1993) introduced a number of manifestations of service integration in the human service field, such as, "one blanket coverage service system," "new, more effective, integrated networks of full-service delivery," and "one-stop, comprehensive outlet or service department stores staffed with cross-trained, flexible personnel, any one of whom would be able to adapt to the personal needs of individual clients while tapping into a larger resource network in order to find and deliver the set of services that best fits specific clients" (p. 504). Service integration involves interagency efforts and activities for collaboration (Hassett and Austin, 1997; Sowa, 2008). According to Kagan (1991: 2-3), service integration is identified as further progress in the continuum of interorganizational relationships, which ranges from cooperation (personal relationships between management and staff in different organizations) to coordination (multiple organizations work together to coordinate their services) to collaboration (multiple organizations share resources, staff, and rewards) to service integration (multiple organizations work together to provide a new package of services to their mutual clients).

Shared Service Perspective

Generally in the private sector, shared service arrangements can be broadly defined as a bundling of supporting processes and non-strategic activities into a separate organization or entity (or a dedicated shared service provider) which in turn treats these processes and activities as its core business (Schulman, Harmer, Dunleavy, and Lusk, 1999: 2). For example service integration was identified by Deakin, Lombardi, & Copper (2011) as an enterprise-wide business model for a shared enterprise. In the government context, the term "shared service" denotes "a generic service that is jointly developed by public agencies and can be used many times in different business processes of various government agencies" (Janssen and Wagenaar, 2004: 32). Services, in this context, can be shared by multiple agencies to avoid the development of similar functionality over and over again. Functionality of one system can be shared and provided to other agencies. Shared services can meet a strong need to coordinate joint efforts on all levels of public administration, avoid duplication of efforts, and establish one shared back office (Janssen and Wagenaar, 2004: 31). Shared services promise mainly three benefits: reduced costs, improved quality of service, and fewer distractions (Bergeron, 2003: 6; Dollery and Akimov, 2008; Walsh, McGregor-Lowndes and Newton, 2008). Dollery and Akimov (2008) identified the most popular shared service functional areas in the public sector as waste management, use and procurement of physical assets, back office operations, information technologies, governance, compliance and audit services, and human resource management.

E-government Perspective

Service integration in the e-government context involves e-government maturity models. Existing models that explain the evolutionary nature of e-government development commonly see integration as the most mature stage (Andersen and Henriksen, 2006; Janssen and van Veenstra, 2005; Layne and Lee, 2001; Reddick, 2004). Sophistication of e-government offerings requires systems integrated across different functions and real one-stop service for customers such as citizens and businesses (Holden, Norris, & Fletcher, 2003). The mature stage for integration enables integration in both information and service. There are three sequential stages of e-government integration (Gil-Garcia, 2012: 5-7). *Vertical integration* across different levels of government is the first stage of integration. Once services are provided through vertical integration, citizens have higher expectations and vertical integration would move to a necessary next transformation (Layne and Lee, 2001). To obtain all the potential of ICTs in government from a citizen perspective, it is necessary to develop a comprehensive vision of the government as a whole by horizontal integration (Assar, Boughzala and Boydens, 2011; Grönlund, 2010; Klievink and Janssen, 2009). The *Horizontal integration* stage requires a radical and complex transformation in the distribution of intra- and inter-organizational power (Rocheleau, 2003) and relies on the development of trust and creative collaboration models among government agencies (Chen, 2010; Gottschalk, 2009; Williams, Fedorowicz and Tomasino, 2010; Zheng, Yang, Pardo and Jiang, 2009). In *Total integration* as the most advanced stage of integration, citizens can access all information and services using a single window or portal (Baqir and Iyer, 2010; dos Santos and Reinhard, in press; Gant, Gant and Johnson, 2002; Gouscos, Kalikakis, Legal and Papadopoulou, 2007; Kim and Grant, 2010; Klievink and Janssen, 2009; Kunstelj and Vintar, 2004; Lee, 2010; Lenk, 2002; Sariskas and Weerakkody, 2007).

Citizen-Centered Service Delivery Perspective

Citizen-centered service delivery denotes "the process of bringing together and fitting together government services so that citizens can access these services in a seamless fashion based on their wants and needs" (Kernaghan, 2005: 120). Citizen-centered service integration is a comprehensive, concerted, and committed effort to integrated services not only across departments, governments and sectors but also across service channels (Roy and Langford, 2008). The philosophy of citizen-centered service integration is that seamless services to citizens would not stop at any jurisdictional boundary defined politically by geographic territory (Roy and Langford, 2008: 13). Public services are traditionally delivered through a plethora of government agencies via programs that are not typically connected to each other. Network or governance models for integrated service delivery recognize the failure of traditional hierarchical government organizations and the inability of individual agencies to interconnect and reach out to wider community-based stakeholders (Roy and Langford, 2008: 14). The integration of citizen-centered service delivery is the way to rethinking traditional and conventional government machinery (Charih and Robert, 2004), extending beyond the mere efficient and effective delivery of services through a single web portal of government agencies. The citizen-government relationship and the government-to-government relationship may change with citizen-centered service integration. Practices in Canada, in particular, show notable examples such as Government On-Line, Service Canada, and Service British Columbia (Charih and Robert, 2004; Fafard et al., 2009; Flumian, Coe and Kernaghan, 2007; Kernaghan, 2005, 2009; Roy and Langford, 2008). Service Canada suggests a distinction between citizen-centered service integration and e-government integration. The service delivery mechanism is a multi-channel (both offline and online service offerings) as well as one-stop and multijurisdictional initiative (Flumian et al., 2007; Roy and Langford, 2008), ensuring people can choose the means by which they interact with government whether in person, by mail, by telephone or via the Internet.

Summary

The term "service integration" is rooted in the area of human and social service delivery, but more recently it is used to refer to the consolidation of government services (citizen services and internal services) enabled by technological advances and also seamlessly supported multiple channels. Table 1 summarizes how service integration is addressed in citizen-facing and organizational/managerial aspects with respect to each stream of literature.

Perspective	Citizen-facing	Organizational/managerial
Human service	• One blanket coverage system or one-stop comprehensive outlet to reduce fragmentation, duplication, discontinuity, inaccessibility and unavailability of services	• Interorganizational (interagency) cooperation, coordination, and collaboration
Shared service		• Coordinating joint efforts on all levels of public administration, avoiding duplication of efforts, and establishing one shared back-office
E-government	• A single window or portal through which citizens can access all information and services	• Integration of government organizations across the different levels of government and between different government services, agencies, and policy domains
Citizen-centric service	• Seamless services to citizens that would not stop at any jurisdictional boundary and at any particular channel	

Table 1. Views of Service Integration

From the discussion of theoretical arguments and empirical findings in terms of each perspective of service integration, we see three common dimensions can be used understand service integration: technology, management, and governance. E-government integration relies on how the potential of ICTs are used for vertical, horizontal, and total integration. Compatibility across different systems is a prerequisite for interoperable e-government (Gil-Garcia and Pardo, 2005). Technological concerns broadly include incompatibility as well as complexity, staff experiences, flexibility, privacy, security, and standardization (Gil-Garcia et al., 2009; Lam, 2005). In shared services literature, interoperability across legacy systems and standardization of platforms and applications are major technical concerns for shared service organizations (Joha and Janssen, 2010). Citizen-centric service literature emphasizes a common (or interoperable) infrastructure and architecture as a basic requirement for service integration across multiple channels (Flumian et al., 2007; Kernaghan, 2005; Roy and Langford, 2008). A variety of management-related factors are identified as barriers, challenges, and promoters of service integration. In all four streams of the literature reviewed, these factors broadly include resource allocation, organizational structures, organizational cultures, staffing, funding, and turf issues (Becker et al., 2009; Charih and Robert, 2004; Flumian et al., 2007; Gil-Garcia and Pardo, 2005; Hagebak, 1979; Imershein et al., 1986; Kernaghan, 2005; Lam, 2005; Polivka et al., 1981; Walsh et al., 2008). Cross-organizational governance is also identified as an important dimension for the understanding of service integration. The level of services integration depends on the nature of existing and potential interorganizational relationships (Gil-Garcia and Pardo, 2005; Kagan, 1991; Yang and Maxwell, 2011). Citizen-centered service requires engaging citizens, communities, and a wider set of stakeholders in service delivery (Roy and Langford, 2008).

RESEARCH METHOD AND CASE DESCRIPTION

Data

The data collection process was conducted as part of the multinational research project titled Smart Cities Service Integration. As members of the project team, the authors conducted 16 semi-structured interviews with city government managers and officials with responsibility for managing and operating the City of Philadelphia's 311 service center, Philly311. Interviewees included different levels and functions included executives (the mayor, the managing director, and the deputy director), Philly311 staff (director, operation manager, and technology expert), and representatives of other service departments (commissioner and chief of staff) related to 311 operations. Each face-to-face interview lasted approximately one hour, and additional information was collected through follow-up email communication.

For a series of semi-structured interviews, we used the interview protocol that the Smart Cities Service Integration project team jointly developed for a comparative study on multiple cases of service integration around the world. Using the protocol, we asked broad questions for semi-structured interviews based on the three key dimensions (technology, management, and governance) drawing from the literature review. The broad questions were designed to maximize the flexibility of semi-structured interviews to follow up on new information presented in the context of each interview and to explore new findings in depth. Table 2 describes sample questions asked for this study.

Category	Questions
Case description	• How did Philly311 start?
	• What are the main goals of Philly311?
Technology	• How is information and communication technology being used for Philly311?
	• What are the barriers or challenges to using technologies for Philly311?
Management	• How is Philly311 organized and managed?
	• What organizational challenges is Philly311 facing?
	• How are those challenges being overcome?
Governance	• How is Philly311 governed?
	• What's the authority and role of staff, partners, and stakeholders?
	• How are citizens and other organizations involved in Philly311?

Table 2. Interview Questions

Interviews were transcribed and analyzed following an inductive logic approach and using grounded theory techniques. Employing a qualitative analysis software tool (Atals-ti), the authors conducted a systematic iterative process of joint coding and analysis. The coding of qualitative data involves creating initial codes by breaking down and categorizing the data and then further classifying the initial codes into some categories. For that, descriptive codes were used so that interview transcripts were coded in sentence or multi-sentence chunks (Miles and Huberman, 1994). Table 3 describes codes emerging from interview data.

Category	Descriptive code	Description
Case description	*Motivation*	Motivation for launching Philly311
	Purpose	Purposes, goals, objectives, and mission of Philly311
	Uniqueness	Differences from other agencies and other programs in the city; Differences from other cities' 311 systems and services
	Timeline	Events that happened from the beginning to the present
Technology	*System*	Characteristics of technological systems
	Software	Characteristics of software used for Philly311
	New technology	New technologies used for Philly311 including social media and smart phone
	Technological challenge	Technological challenges in achieving the objectives
Management	*Structure*	Philly311's impacts on organizational structure of the city government
	Business process	Philly311's impacts on core business processes of other departments and agencies
	Performance management	Philly311's impacts on tracking and monitoring operational performance of city departments and agencies
	Managerial challenges	Managerial challenges in achieving the objectives
Governance	*Governance model*	Institutionalized governance model and body for decision making and conflict resolution
	Interorganizational relationship	Relationship between Philly311 and partners or stakeholders
	Citizen involvement	Citizens' involvement in service requests, feedback, or other activities
	Governance challenge	Governance-related (related to interorganizational collaboration, partnership, and citizen engagement) challenges

Table 3. Descriptive Codes

Case Description

Philadelphia is one of the last cities of its size to activate a 311 non-emergency number. At the end of 2008, the mayor and the managing director opened Philly311 as a concrete step toward the administration's goal—smarter, faster, and better government through customer service, government efficiency, and accountability. The idea—giving the public a direct way to request services or complain and using their feedback to hold government accountable—was not entirely new to Philadelphia. The city already had multiple customer hotlines, but there was no single contact point. The new 311 contact center absorbed the City Hall Switchboard, the Mayor's Action Center, the Department of Licenses and Inspections' customer line, and part of the Department of Streets' customer line. Philly311 offers various ways to contact the city: phone call, in person (Philadelphia is one of a few cities that have a walk-in center), email, short message service (SMS), and social media (Twitter). In planning Philly311 with the understanding that at that time 311 service is not mandated to all city departments and agencies, staff identified key citizen service areas of the city and selected those to be the first wave of Philly

311 agencies. Currently, Philly311 responds to service and information requests related to the following seven departments Managing Director's Office, Streets, Licenses and Inspections, Police, Water, Parks and Recreation, and Fairmount Park. Integrating. As a result, the seven departments have been identified as core providers of frontline service. The city's executives and Philly311 staff are considering the expansion of the scope of services and information by adding more departments to the service level agreements.

FINDINGS

Main findings from the case study are categorized into how Philly311 overcomes challenges in building service integration capabilities and how these capabilities influence the city government in Philadelphia. First, from the interviews, we identify the main challenges in establishing and developing capabilities for service integration and how the city has overcome those challenges. Second, we describe how the 311 service center has created capabilities for both citizen-facing services and internal management and how the services have changed operations and processes of the city government.

Overcoming Challenges in Establishing Capabilities for Service Integration

With the goal of catching up with other cities and becoming a national leader in customer service, the city government launched Philly311 under a very tight timeframe (only 11 months from February to December in 2008), within which no other city of Philadelphia's size has launched a 311 center operation. The aggressive timeline itself was not a serious problem, but rather early challenges arose from financial constraints stemming from the budget crisis experienced by the whole city government during the national economic recession. The budget cuts meant scaling back or postponing key elements of the Philly311 strategy. The insufficient budget created two severe challenges: under-staffing and under-equipping. Philly311 started with a shortage of six agents, and the original operational goal of 57 agents has still not been met. In the beginning, Philly311 did not hire experienced call-center agents. Instead of recruiting professional agents externally, the 311 launch team decided to get only internal city government transfers, including city employees who might otherwise been laid-off due to the economic downturn. Philly311 was not able to install the kind of software best suited for integrating 311 with city agencies' computers and generating data for the public and city managers to analyze, they had to use old CRM software. For three years starting from 2008, challenges resulting from under-staffing and under-equipping have not been fully addressed. However, interviewees, looking back on the three years, offered insights for overcoming challenges. "[Philly311] can serve as a model for other countries and cities that are thinking about starting 311," said one Philly311 staff person. The Philly311 experience highlights how a city can launch and operate well with an aggressive timeline and budgetary constraints. Four key critical factors for overcoming the challenges are identified from the interviews.

Adaptation and flexibility

Since recession-driven budgets cuts were causing under-staffing and under-equipping, the city had to create a smart (less costly and less resource-consuming) way to achieve its Philly311 objectives. The Philly311 team had to adapt to the unfavorable—under-staffed and under-equipped—conditions. This turned out to be critical because the best case scenario for peak performance and operation without any glitches has never happened; instead, the staff has developed the skills through internal training of inexperienced transferred employees to perform well even under less than ideal conditions. Philly311's adjustments include tailoring a web-hosted CRM to meet the needs of Philly311 at a fraction of the costs. Managers of the system patched together software to emulate aspects of a full-blown 311 system. Overall, adaptation and flexibility was pivotal to overcoming the earlier challenges from under-staffed and under-equipped conditions. However, the patchwork of software enabled limited functions of CRM and had concern for interoperability with legacy systems in other departments.

Champions and support

One of key organizational factors is managing challenges in Philadelphia is strong executive support and commitment to the 311 service. As champions of Philly311, the top leadership suite (the mayor, the managing director, and their team) has a shared vision for customer service. The Mayor proposed a strategic goal for the city: to make the city's government a national leader in customer service. He and his leadership team see Philly311 as the primary tool for making this happen. Consistent strong support from city leaders and top management is vital to making this vision a reality; interviewees said that executive support is playing an important role in ensuring city government employees are aware of the value of Philly311 and turning them into internal champions for Philly311. However, the lack of budget for marketing, is keeping Philly311 from gaining the active external support that other cities who have been able to invest in such marketing have received.

Internal partnership within the city government

Strong internal partnerships with city departments was found to be beneficial to the Philly 311 operations. These partnerships help align each department, including Philly311 with the city's broad, strategic goals. The early days of Philly311 did not

bode well however, for the future of such partnerships. Interviewees said that building partnerships with other departments was not easy work in the beginning stage of Philly311 because there was a concern that Philly311 might take result in the agencies themselves losing connections to citizens. Philly311 staff contacted representatives from key citizen service departments and bringing the departments into the service level agreements took several months or more, depending on the department. The values and benefits of 311 service were introduced to them, with lessons from practices in other major cities. In the initial stage, strong leadership from the top and the whole city government-wide customer service orientation helped departments come on board. Once they decided to join the Philly311 system, volunteers from the departments came together with Philly311 staff to populate the Philly311 knowledgebase (the searchable database of information about various city services and the list of questions that can be asked about those services and answers). Continuous feedback and communication (through monthly meetings) between Philly311 and those departments has resulted in ongoing updating and enhancements to the knowledgebase. According to some interviewees, now there is a growing recognition that the expansion in Philly311's coverage to other departments will help those departments do their jobs more efficiently and effectively, rather to threaten them.

Strategic partnership with external organizations

Private sector partners with their own customer service center were important partners to the Philadelphia team in developing a detailed strategy and implementation plan for 311 call center operation. They also helped the Philly311 effort by providing "on-loan call takers" to the city when budget cuts made it difficult to keep the Center staffed. The Philly311 call center agents learned from private sector best practices, and in turn the on-loan agents from private call centers learned more about how the city works. The partnership with customer service professionals from some private companies offered a mentoring opportunity for Philly311 agents and supervisors. This strategic partnership for agent training and knowledge sharing was considered by all involved to be a smart way to acquire practical knowhow, given budgetary constraints.

The Impact of 311-Enabled Service Integration Capabilities

Philly311 built capabilities for the integration of both citizen-facing services and internal services. This section presents findings from the interviews in terms of how Philly311's functions as a consolidated channel and internal management strategy impact the government of Philadelphia.

Citizen-facing impacts

Philly311 is recognized as providing new connections for citizens to Philadelphia city hall as well as consolidating existing connections (other departments' call centers). One of the executive-level interviewees viewed Philly311 as an interaction tool, by saying "[Philly311] connects to government as much as possible. It is interactive to see what's on people's minds." Through integration of channels for municipal services and information, Philly311 is seen as a main gate to residents, businesses, and visitors of the city. As well, Philly311 is recognized as a the front line for service with agents reachable via a toll-free phone line and often digital media. One of the Philly311 launch project team members said:

> *311 is a front door. Before 311, Philadelphia had hundreds of front doors. Most were blocked, not open at all. The city created the best face of the front door for the city.*

Philly311 as a front door to city hall provides people with integrated services that are seen as changing the citizen-government relationship in terms of accountability and citizen engagement.

External accountability

Philly311 is seen by many as more than a tool for customer service. For external accountability, callers, senders of emails and text messages, and walk-in customers receive a tracking number for the service request they submit. This allows them to follow-up on their requests either by calling back or visiting the 311 homepage. Customers are given a specific timeframe within which the requested service will be provided so they can has realistic expectations about when their requests will be filled. One interviewee said, "People want to see government's workings more connected through technology." Philly311 is an effective tool for external accountability and transparency in that it shows the public how and when the city government does its work.

Venue for citizen engagement

Philly311 as a consolidated channel for non-emergency service and information requests is seen as enabling and empowering Philadelphians to engage in their communities. One Philly311 staff person said that "311 enables citizens to become involved in their neighborhood by reporting a problem they see". The interview data indicates the 311 functionality is delivering more than the original expected outcomes – increase satisfaction in government services – it is also credited with increasing the level of citizen engagement in neighborhood environments around such issues as built infrastructure, public safety, and

public facilities. As citizens, through the use of Philly311 see how reporting a problem can impact the neighborhood—for example, requests for removing graffiti from a local park or clearing up a vacant property that can be potentially a place for crime—they are further inspired to become involved in improving the neighborhood they live in. With Philly311, citizens see a direct connection between their action- filing a service request and realizing an improvement in the quality of life in their community.

Proactive engagement by volunteer liaisons

The Philadelphia neighborhood liaison program, unique to other 311 systems, is a crucial part of Philly311's connection with residents. In Philadelphia a neighborhood liaison is someone who serves their community by reporting issues directly to the Philly311 system and provides the community with progress reports. The program is open to all residents who are willing to participate in a two-hour training session that provides and orientation to city departments and the Philly311 system. They know their neighborhoods and are familiar with what members of their community want and need. One Philly311 staff person said:

> *The liaisons are community leaders. We train them to use our system. They have ability to put information directly into our system. That's our strong connection in a different way of outreach. Multiple sources of information are embedded in neighborhoods.*

The neighborhood liaisons also serve as contact points for integrating service requests. Their are central to the process of connecting 311-enabled services with the service needy, who are usually the poor and the technology-illiterate, especially in distressed neighborhoods.

Managerial impacts

City agencies perform hundreds of tasks, but Philly311 only handles the ones it can hold an agency accountable for performing within a previously agreed upon timeframe. Service level agreements are used by the city to lay out agreements about service standards that are measurable and can be used to support accountability (e.g., response times). For instance, a residential property that is not being maintained must be investigated by the Department of Licenses and Inspections within forty-five days. A dead animal must be removed by the Department of Streets in three days and an abandoned vehicle within thirty days. Similar to this, if a department has agreed in its service level agreements to deal with a citizen's service task in X number of days, the requestor must be informed of that service standard when the request is filed. The department is held accountable to complete the service in that amount of time or provide information back to Philly311 as to why the service could not be completed in the agreed-upon amount of time.

The information and technology integration being put in place to support Philly311 and the new expectations about service delivery across the city are creating new managerial capabilities for the city government. The 311 program is about service-related information. Regarding this point, one Philly311 staff person said, "We are the only agency-level centralized database. Nobody has that." The 311 center manages the repository of all logs of communication (calls, emails, and text messages) with citizens. Data is extracted from the repository and then used for PhillyStat (the city's performance management meetings) and other policy and management processes within the agencies themselves. In addition to integrating information and services, technologies are also being integrated. The integration of technologies such as CRM and GIS software is essential to 311 service report and tracking as well as service delivery. Requests from residents can be grouped and mapped by zip codes, police service areas, and City Council districts, displaying where services are needed and using that data to direct resources. Philly311 is not adopting smart phone applications yet but is currently considering using new platforms for mobile communication. Such mobile applications are expected to enable more accurate positioning of reported issues within the city and the inclusion of visual images.

According to the interviewees, Philly311 is a driver for managerial innovation influencing city government intern al and external operations. Innovations in back office management and operation, in enabling effective use of resources, improving business processes and performance management, facilitating other initiatives and programs, developing capabilities for internal customers, and solidifying interdepartmental collaboration are occurring throughout the city.

Data-driven management

Philly311, according to the interviewees is seen as vital to the larger performance management effort being carried out in the city. Data pulled from Philly311 relating to service level agreements is being used to identify what residents care about most. The mayor, managing director, relevant deputy mayors, and representatives from the departments and agencies meet regularly for PhillyStat meetings where the data is used to discuss departmental performance. Managing, tracking, and monitoring organizational performance through these meetings relies heavily on data from Philly311 and this type of data-driven management is recognized by city officials and others as changing the roles of public managers in line departments.

With the data provided by Philly311, they see themselves acting as data and process managers as much as direct problem solvers.

Data collected from Philly311 is used in conjunction with the PhillyStat process provide internal accountability. Data is being used to track, evaluate, and, if necessary, correct service patterns in the departments. Guidelines for service described in service level agreements create a sense of accountability that was, accordingly to city officials, noticeably absent before 311. In PhillyStat sessions, each department is responsible for accounting for their performance in front of the city's executives with respect to service standards put forth in the service level agreements.

With data about service requirements and information needs now readily available Philly311 helps other government agencies and departments promote their individual programs. For example, PhillyRising is a neighborhood revitalization program initiated by the City's Managing Director's Office. Philly311 data from residents and neighborhood liaisons helps PhillyRising staff understand the immediate wants and needs of distressed neighborhoods and to develop targeted action plans accordingly. In addition, neighborhood information from Philly311 keeps police officers aware of potential crime-prone areas (e.g., abandoned houses or cars) as well as other community needs. According to one interviewee, Philly311 enables "hot spot policing," by which the police department strategically concentrates their energy on some priority spots in police service areas.

Philly311 is recognized as helping other departments use their resources more efficiently and effectively. Just as Baltimore's original motive for launching its 311 was to reduce the crush of calls flooding into 911, Philly311 allows Philadelphia's 911 center to devote more resources to life-threatening and urgent situations and fewer to responding to and rerouting basic service calls. Philly311 also enables the City Council (the city's legislative body) to use their resources more effectively, by saving their budget and staff time spent on providing constituent services. Philly311, according to interviewees, has freed-up Council resources, primarily the time of Council members, so they can focus on other important needs of city residents. Philly311 provides the City Council with information about service requests and completion status with respect to Council Districts. Importantly, since the City Council recognized the value of Philly311, the relationship between the City Council and Philly311, according to Philly311 staff interviewees, has changed from being competitive in terms of constituent services to being complimentary.

Furthermore, the information Philly311 provides to other departments is driving internal business process changes. One Philly311 staff person gave an example:

> *[Department A] had a fairly random process in how they prioritize replacement of street lights. Once we got the data, we are able to provide GIS maps. That shows where the calls come from—hot spots. They can visually see the clusters. Now they have a data source. The data source actually gave them an opportunity to say "we need to do this." We send our resources to the right places.*

By providing city agencies and officials with access to information about needs Philly311 is recognized as providing a foundation for more informed decision making across the city, in general there is a feeling that city resources are being more effectively and strategically allocated and used.

Internal customer-oriented service

Shared service strategies are expected to enable more efficient and effective back office operation. Philly311 as a shared service strategy is doing exactly this, according to the interviewees, for internal customers within the city government. The Philly311 staff interviewed were unanimous on this point - everybody is their customer—not only those outside government but city departments as well. As a foundation of this view, the mayor created a position that is unique to the City of Philadelphia; the Chief Customer Service Officer. This role is filled by the Philly311 director. With the Philly311 director's dual roles, the organizational responsibility of Philly311 as a city agency extends to inspiring the whole city government with a strong customer service spirit. The vision is for customer service representatives of city departments to view themselves as ambassadors who have a major role to play in the relationship with those who live in or do business with the city. In addition, Philly311 hosts a program for internal customer service training of all city employees, titled *Customer Service Leadership Academy*. This academy provides the opportunity for all employees, not just those in the 311 center, to learn about how to be a customer service leader in the city. Some Philly311 agents have expanded their own job responsibilities and begun to train other employees about call centers, service delivery, and customer service..

Collaboration and partnership

Philly311 staff, according to the interviewees collaborate on reviewing, updating, and revising the service level agreements and the knowledgebase through regular meetings with internal partners who are key to citizen service (representatives of the departments involved in the service level agreements). The review and revision process allows those departments to learn

about Philly311 operations and in turn allows Philly311 to learn about the activities going on inside each agency. Philly311 staff listen to agency staff to understand their concerns, their culture, and the constraints they work within,. Building partnership around the development of service level agreements, is considered by many in the city to be a way to increase transparency across city departments. "We get everybody's input. People bring their concerns into the table," said one Philly311 staff person. "We own the system and they own the content." Hence the partnership of Philly311 with other departments is built on the integration of the departments' knowledge about their services (content) into the 311 system.

Summary

Philly311 works through a variety of mechanisms (See Figure 1). The core departments who hold service level agreements with Philly311 (SLA in the figure) possess capabilities for processing non-emergency service requests received through the consolidated channel of Philly311. Building and developing back-end capabilities for internally shared services requires these departments to engage in interdepartmental collaboration and partnering activities with the Philly311 team. The city government then uses the agreements to drive standards for performance management and evaluation of each department. The use of these agreements for developing performance monitoring strategies also offers service departments an opportunity to enhance internal accountability for their performance based on data drawn from Philly311. The data allows other departments to use their resources more effectively and efficiently, improves business processes by informing day-to-day operational decision making, and enables new programs or initiatives. On the other hand, Philly311 provides external customers with integrated services. Clear standards for customer service are set in service level agreements so that customers know the progress of requested services and the expected timeline to service completion. In turn, citizens give the 311 center feedback which contributes to improving the quality of departmental services. The 311 service goes beyond simply the reception of non-emergency service and information requests. Importantly, as it turns out in Philadelphia ,it is also a venue for citizen engagement.
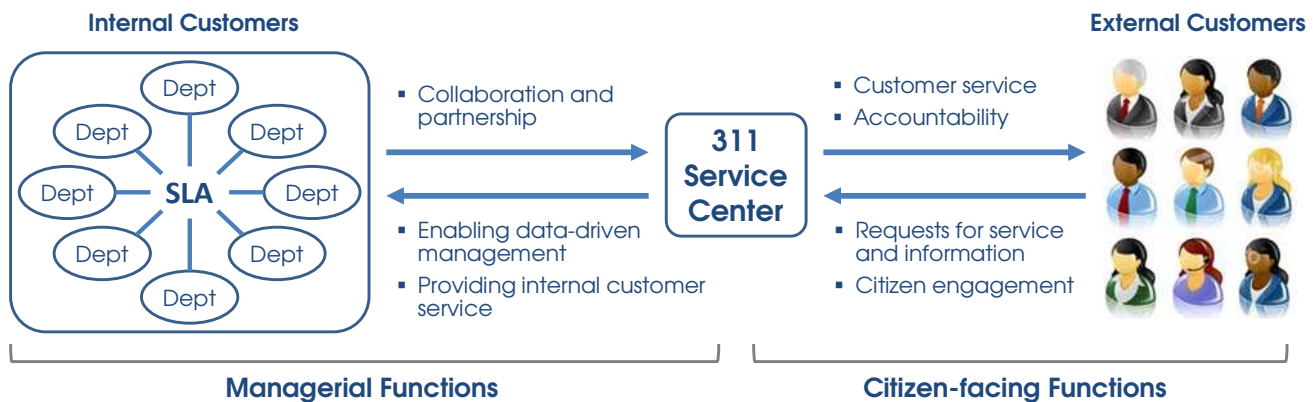

Figure 1. 311-Enabled Capabilities through Service Integration

CONCLUSION

Findings showed the capabilities for service integration enabled by Philly311 create new opportunities for citizen engagement and data-driven and information-centric management. The case of Philadelphia has important implications for other cities that already have a 311 service center or are considering launching such a system. As discussed up to this point, Philly311 is more than a contact center for city government, it serves as a front door for municipal services for residents, businesses, and visitors. The back-end functions of Philly311 merit attention as well in that they enable Philadelphia to gain greater efficiencies by allocating and using managerial and operational resources in a smarter way—driven in part by new access to performance data. Enhancing transparency and accountability of service delivery through the 311 service center is also one way to improving municipal services. Philly311 provides a basic tool for citizens to engage more easily and in a more informed way in their neighborhoods and communities. Internally, Philly311 enables and promotes interdepartmental collaboration and cooperation. While how a city government harnesses a 311 system may differ across cities, Philly311 offers a critical example of how such a system makes a city smarter—more efficient, more cost-effective, more transparent, and more accountable—given budgetary and even technological constraints, and facing increasing demands from residents. A next step of our research is the development of additional case studies followed by a comparative study of the cases to suggest a more comprehensive set of capabilities . As well, we will drill down to specific aspects of 311-driven impacts on city government—for example, performance management, citizen engagement, customer service, and information integration.

To overcome inevitable weaknesses inherent in a single-case preliminary study, our future research will explore the operation and impacts of 311 centers at varying geographic and demographic contexts of multiple cities, through various theoretical lenses.

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