

Project Summary

The Smart Cities Service Integration project is funded by the Social Sciences and Humanities Research Council (SSHRC), a Canadian federal agency that promotes and supports university-based research and training in the humanities and social sciences. The aim of the project is to create a framework for service integration for Smart Cities. The international research team includes researchers and graduate students from the US, Canada, Mexico, and China. The project will produce a series of comparative case studies of Quebec City, Canada, New York City, Seattle and Philadelphia, U.S., Mexico City, Mexico, and Shanghai and Macao, China.

Scope of Work

The aim of this project is to use comparative case studies of several cities investing in integrated service strategies to develop a methodological framework to guide the integration of city services. An additional aim of this project is to build the capacity of graduate students as international researchers by working with an international team of faculty to establish a framework of service integration for smart cities of various sizes. The students will focus on specific policy domains such as environmental issues, health care, or transportation to better understand how smart city systems in use by different types of city-level governments can be integrated to deliver better services to citizens.

The Smart Cities Service Integration research team consists of researchers and graduate students from the Center for Technology in Government, the Rockefeller College of Public Affairs and Policy, University at Albany, USA, Laval University, Canada, Centro de Investigacion y Docencia Economicas, Mexico, University of Washington, USA, International Institute for Software Technology, United Nations University, Macao, and Fundan University, China.

The cities to be used for the comparative case studies are Quebec City, Canada, New York City, Seattle and Philadelphia, U.S., Mexico City, Mexico, and Shanghai and Macao, China.

The project is scheduled to run for 18 months with an expectation of additional funding to continue the work in the future. The work will begin with extensive literature reviews conducted by all five teams, which will be incorporated into the development of a common interview protocol for all five case studies. Each team will then conduct a series of interviews in each of the designated cities and produce a comparative case study to inform the design of the theoretical framework for integrated service delivery systems as part of an overall “smart cities” strategy.

This research will advance current knowledge about the integration of information and information systems among city-level government agencies.

This research project is embedded within a larger set of investigations by the North American Digital Government Working Group (NADGWG), which was formed in 2007 by researchers and practitioners from a variety of institutions and disciplines in Canada, United States, and Mexico to advance electronic government research across geographic and political boundaries in the region. NADGWG was supported partially by a grant to CTG from the National Science Foundation Digital Government Research Program for its Building a Sustainable International Digital Government Research Community initiative.

Publications & Results

Journal Articles and Conference Papers (7)



Identifying Success Factors and Challenges of 311-Driven Service Integration: A Comparative Case Study of NYC311 and Philly311

January 9, 2013

A 311 system provides quick and easy access to non-emergency municipal services and information through a consolidated channel. This study explores the operation of 311 contact centers in New York and Philadelphia and identifies critical success factors and challenges of 311-driven service integration. Analyzing the qualitative data from semi-structured interviews with 311 center staff and city government officials, the study presents some key findings. Having the right technology in the right time is identified as a critical technological factor. While the lack of interoperability between a 311 system and departmental legacy systems remains a major technical barrier to connecting a variety of systems, human agents fill the middle ground so that training for qualified agents is crucial for their role. Inter-agency coordination and collaboration is pivotal to creating and updating service level agreements and knowledgebase. However, turf protection raises cross-organizational concerns. The mayor's strong leadership, political champions, and the executive support help resolve interdepartmental conflicts.

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Transforming City Government: A Case Study of Philly311

October 22-25, 2012

This paper describes 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 program as a practice of government innovation. The paper then presents the details of the 311 program as it is being instantiated in the City of Philadelphia. In-depth interviews with city government officials and managers responsible for operating the city's 311 system (Philly311) offer insights into the contributions the system is making to a more efficient, effective, transparent, accountable, and collaborative city government. Performance data provided by Philly311 enables more efficient resource allocation and informed decision making. Philly311 is credited with making the process of service delivery more transparent to the public, and providing traceability of requested services imbues service departments with a sense of accountability. Service level agreements are providing measurable standards of municipal services and are used to support accountability in terms of service status. Regular reviews of service level agreements and content of the system promote interdepartmental collaboration. 311 systems are broadly recognized as powerful tools to engage residents in improving their neighborhoods. Interviews also revealed challenges Philly311 is facing including limited funding impeding further improvements in software, systems, and staffing, and provided some insights into innovative strategies for addressing resource constraints. Institutionalizing interdepartmental collaborations also emerged from the interviews as a critical new capability required for advancing from the initiation stage of Philly311 to the operational, expansive, and sustainable stages. **[Winner of Best Innovations in Practice Paper Award, ICEGOV2012]**

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Understanding Smart Cities: An Integrative Framework

January 5, 2012

Making a city “smart” is emerging as a strategy to mitigate the problems generated by the urban population growth and rapid urbanization. Yet little academic research has sparingly discussed the phenomenon. To close the gap in the literature about smart cities and in response to the increasing use of the concept, this paper proposes a framework to understand the concept of smart cities. Based on the exploration of a wide and extensive array of literature from various disciplinary areas we identify eight critical factors of smart city initiatives: management and organization, technology, governance, policy context, people and communities, economy, built infrastructure, and natural environment. These factors form the basis of an integrative framework that can be used to examine how local governments are envisioning smart city initiatives. The framework suggests directions and agendas for smart city research and outlines practical implications for government professionals.

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Smart City as Urban Innovation: Focusing on Management, Policy, and Context

September 26-28, 2011,

This paper sees a smart city not as a status of how smart a city is but as a city’s effort to make itself smart. The connotation of a smart city represents city innovation in management and policy as well as technology. Since the unique context of each city shapes the technological, organizational and policy aspects of that city, a smart city can be considered a contextualized interplay among technological innovation, managerial and organizational innovation, and policy innovation. However, only little research discusses innovation in management and policy while the literature of technology innovation is abundant. This paper aims to fill the research gap by building a comprehensive framework to view the smart city movement as innovation comprised of technology, management and policy. We also discuss inevitable risks from innovation, strategies to innovate while avoiding risks, and contexts underlying innovation and risks.

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Conceptualizing Smart City with Dimensions of Technology, People, and Institutions

June 12, 2011

This conceptual paper discusses how we can consider a particular city as a smart one, drawing on recent practices to make cities smart. A set of the common multidimensional components underlying the smart city concept and the core factors for a successful smart city initiative is identified by exploring current working definitions of smart city and a diversity of various conceptual relatives similar to smart city. The paper offers strategic principles aligning to the three main dimensions (technology, people, and institutions) of smart city: integration of infrastructures and technology-mediated services, social learning for strengthening human infrastructure, and governance for institutional improvement and citizen engagement.

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Information Sharing at National Borders: Extending the Utility of Border Theory

February 15, 2009

Research has identified the potential and challenges of information sharing in government settings mostly within the context of a single country. The challenges facing inter-governmental information exchanges that take place across national border governments, however, are thought to be different. To date, research has failed to provide theoretical guidance in understanding the complexities that the cross border environment brings to information sharing initiatives. This paper brings together Brunet- Jailly's theory of borders [10] and definitions of crossboundary information sharing from Gil-Garcia et al. [39] to develop a framework that incorporates the information sharing and technology dimension with the economic, political and cultural contextual factors impacting border regions. This study is an initial step toward understanding the challenges that the border environment brings to information sharing initiatives. Future research is necessary to empirically test the utility of the proposed theory as a tool for understanding this new area of both practical and theoretical importance.

Collaborative Governance and Cross-Boundary Information Sharing: Envisioning a Networked and IT-Enabled Public Administration

September 5-7, 2008

Governments around the world are moving toward a more global perspective in their efforts to address complex social, political, and economic issues. New requirements for international cross-boundary collaboration, driven by this global view, demand a new understanding about how individual nations respond to public problems and how nations work together in response to transnational problems. In addition, new forms of government enabled by information technologies and made possible through new models of collaboration are emerging. The future of public administration is clearly linked to the development and management of new forms of collaborative governance and the use of information technologies. Globalization is also contributing to the internationalization of the public sector, in which cross-boundary collaboration and information sharing will happen not only within a country, but between nations. This paper contributes to the exchange of knowledge about the future of public administration by presenting a view that considers important trends in public management and public service around the world. As a backdrop we first present a discussion about the emergence in public administration toward post-bureaucratic organizations and interorganizational networks. E-government and cross boundary information sharing are then introduced as part of the new context of public administration. We then draw the focus back to the importance of collaboration and information sharing in transnational public problems and international cooperation and characterize the need for new capability in working across the boundaries of organizations, governments, regions, and nations. Finally, drawing on this discussion we outline four topics of critical importance for inclusion in the public administration classroom to fully prepare students to work in the government of the 21st Century; Post-Bureaucracy and Organizational Networks, Information Technologies and Inter-organizational Information Integration, Collaborative Governance and Interoperability: Creating policy, management, and technology capability, and Transnational Problems and the Internationalization of Public Administration. The new generation of public administrators must understand the importance of collaborative governance, information technologies, and the internationalization of complex social problems for the public administration of the twenty first century.

Partners

Academic Partners

- J. Ramon Gil-Garcia, Assistant Professor and Director, Data Center for Applied Research in Social Sciences, Centro de Investigacion y Docencia Economicas <http://www.cide.edu/index.htm>
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Press Releases & News Stories

Press Releases

UAlbany's Center for Technology in Government Receives Grant to Build Capability of Graduate Students as International Researchers
Tue, 08 Feb 2011

News Stories

Police look to predict crime by analyzing trends, data
Schenectady Gazette
February 3, 2013

Smarter Cities Use Software to Engage Citizens
The Triple Pundit
December 24, 2012

Boston unveils BAR app, or Boston About Results, a virtual score card for city services
Boston Globe
December 3, 2012

How Edmonton embraces open data
it World Canada
December 5, 2012

Tech Trends Targeting Cities
United Business Media's Future Cities
December 4, 2012

10 Trends That Are Changing Cities Forever

Business Insider

December 11, 2012

Related Web Sites

North American Digital Government Working Group

Building a Sustainable International Digital Government Research Community

Laval University, Canada

Centro de Investigacion y Docencia Economicas, Mexico

University of Washington, USA

International Institute for Software Technology, United Nations University, Macao

Fudan University, China

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