

Public Engagement and Government Collaboration: Theories, Strategies and Case Studies

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1. Introduction

This special issue features selected papers from the dg.o 2010 conference on the theme of “Public Engagement and Government Collaboration: Theories, Strategies and Case Studies.” E-government initiatives and solutions are characterized by the use of Information and Communication Technology (ICT) for public administration to achieve their strategic goals. US government strategies in implementing e-government are focused on citizen-centered, result-oriented and innovation-based services and processes [2]. Recently the US federal government has also started the Open Government Directive to promote information transparency, citizen participation and cross-government collaborations [4]. Similarly, municipal and state governments have their own strategic goals and missions to be implemented via ICT-based e-government programs and initiatives. In order for each government and each agency to achieve its strategic goals, e-government projects and initiatives need to be properly planned, modeled, managed and implemented. Quantifiable measures of success also need to be defined in terms of productivity gains, service quality improvements and cost reductions.

In this issue, we present two broad categories of government strategies for collaboration. One deals with public engagement in citizen-to-government (C2G) collaborations, and the other is government-to-government (G2G) collaboration to achieve data transparency and strategy sharing as well as innovative technology implementations.

2. C2G Collaboration - Public Engagement

Public engagement, as a form of Citizen to Government collaboration, can be achieved by different forms of communication and dialogue between government, the public and other stakeholders to develop specific policies or services or to arrive at consensus-based decisions. It can range from surveys and questionnaires, to town meetings, focus group discussions, and correspondences, all of which can be delivered in face-to-face mode or in a virtual mode. Public engagement can also differ in the degree of citizen involvement. The engagement can range from citizens as voters, citizens that share government information, citizens that demand government accountability, to consultations of public opinion, dialog with citizens, and citizens involved in shared governance and government decision making.

Matt Tee has stated the motivation for and the benefits of public engagement in [5]:

“It is in the interest of government that the policies and services it creates are deemed to be relevant and successful by the very people they aim to serve. In recent years, it has become increasingly clear that the best way to ensure this is to include the public and stakeholders in the policy-making process, putting their opinions and experiences at the very heart of government decisions that affect them. From gathering information on the attitudes and behavior of citizens to creating strong partnerships in which the public or organizations have a direct influence on policy or service outcomes, public engagement now plays an important role as part of the democratic process.”

The benefits of this collaboration of public and government include:

- It can lead to new, more creative and often more cost-effective solutions to policy issues.
- It increases the sense of civic influence and empowerment by giving citizens a meaningful opportunity to participate in the democratic process.
- It increases public confidence in government activities,
- It provides information about the motivations, preferences and priorities of the public to the government representatives to make better decisions when making policy.
- It helps give a voice to wide sections of society (including those that have previously been marginalized).
- It provides feedback on the services to ensure that the proper allocations of resources are made.
- It may uncover the unintended consequences of a proposed policy or service by public deliberations and crowdsourcing.

The growth of public engagement has been expedited through the use of readily available open source and easy-to-use social media. The innovation of social media technologies has been a driving force for the recent transformations of public engagement. With the advent of the Internet and social media technology, one of the government’s strategies is to increase collaboration with the public by linking the citizens with the governments and engaging them in policy making and deliberations.

The added benefits of social media-based public engagement may include:

- Real-time engagement enhances awareness of new policies, services or social issues and fosters real-time interaction with and feedback from the government.
- Continuous engagement on a 24/7 basis provides feedback on policy issues from planning to implementation to execution stages, in contrast to intermittent engagement.
- Ability to amass large numbers of content contributions. Massive crowdsourcing may reveal collective intelligence (patterns and trends), innovative ideas and unexpected solutions in a low-cost, rapid manner.
- Lessons learned from other parts of the country or from other countries can be easily shared.

However, the social media-based public engagement can also pose the following challenges and questions:

- The engagement process can be scattered, haphazardly organized and transient as opposed to the conventional meeting-based one. How do we make sure the engagement is consistent, stable and meaningful?
- Does the approach to adoption of social media differ from government to government? The successes and failures of social media-based engagement are still emerging. What kinds of factors should government consider in order to design and evaluate participatory technologies for effective public engagement?
- How do the government officials consider the idea of public engagement? Is the government culture ready for open public engagement? Can the policy process models in the literature assume and effectively encourage the public to participate in open discussions through low-cost social media?
- Are the comments and discussions contributed by ordinary members of the public vs. domain experts equally valuable for scientific or other specialized policy domains? If not, how do we design the engagement systems for appropriate group participation?

We have selected three papers to address some of the above challenges and issues.

3. G2G Collaboration and Innovation through IT strategies and Data Transparency

Collaboration between government agencies or between a government agency and other organizations (e.g. businesses or non-profit organizations) requires coordination and alignment at different levels to achieve common goals. Many cross-agency projects have been initiated (see [6] for some examples of federal projects). The collaborations have shared common goals among participating parties, and each party performs a set of tasks or activities towards achieving the goals. The collaboration models may differ in the degrees of integration, ranging from loose to tight couplings, from a model of simple sharing of each other's data, knowledge, skills, and resources, to agglutination or composition of services and processes to re-engineering or innovation for new services, processes or creation of new knowledge.

The collaboration model that has to coordinate, align and integrate different layers of activities of participating organizations, which we call a *multi-layered collaboration model*, is depicted in Figure 1 for two organizations. In order to achieve a common goal, organizations should align their objectives such that the composition of these objectives can achieve the goals. Each organization should embark on a set of strategies how to achieve the objectives. They need to align their strategies to achieve consistency and coherence in order to reach the objectives and goals. Each strategy may trigger a set of tasks, and these tasks may have some contingency relationships among participating agencies that should be coordinated; the composition of all the tasks should yield the common goals and objectives. Each task can be achieved by coordinated activities that are called processes, and these processes should also be coordinated and aligned according to the task relationships. Each process may require data from different organizations. Thus, the data need to be shared, integrated, fused and repurposed.



Figure 1 Multi-layered Inter-organizational Collaboration Model

Some layers can be supported by Information Technology, such as the data integration, interoperability and process layer, while other layers tend to depend heavily on face-to-face human coordination, as in strategy alignment or objective layer coordination.

In this special issue we have selected three papers on this topic: a paper that provides a systematic framework to support the strategy level collaboration between governments for IT project management; a paper that addresses the data layer collaboration solution between governments using Semantic Web Technology to provide better integrated services for citizens; and lastly a paper that analyzes the implementation of new innovative smart grid IT systems in different small-size local and public utility organizations to realize the goals of energy conservation and sustainability.

4. Paper Summary

The six featured papers are summarized in Table 1, including three in the area of citizen-to-government collaboration and public engagement, and three on the topic of government-to-government collaboration and innovation adoption experiences.

Table 1: Special issue papers research topics and issues

Topic Area	Issues	Paper
Public Engagement – Citizen to Gov Collaboration	How does the government consider public engagement in general? Is the government culture ready for open public engagement? Can the policy process models in the literature assume and encourage the public for the open discussions and	<i>Public Policy and Obstacles to the Virtual Agora: Insights from the Deliberative E-Rulemaking Project</i> Peter Muhlberger, Jennifer Stromer-Galley and Nick Webb

	participation through low-cost social media? What kind of factors should government consider in order to design and evaluate participatory technologies for effective public engagement?	
	The engagement process can be scattered, not well-organized and transient as opposed to the conventional meeting-based one. What triggers governments and citizens to adopt the social media and how do we make sure the engagement is meaningful?	<i>Tweets And Retweets: Twitter Takes Wing In Government</i> F. Dianne Lux Wigand
	Are the comments and discussions by ordinary public vs. by domain experts equally valuable for scientific or other specialized policy domains? If not, how do we design the engagement system for appropriate group participation?	<i>Peer to PCAST: What does Open Video have to do with Open Government?</i> Mark Deckert, Abram Stern, Warren Sack
Gov-to-Gov Collaboration and Innovation adoption	How can the alignment design of strategies be facilitated for inter-government collaboration?	<i>Whole-of-Government Approach to Information Technology Strategy Management: Building a Sustainable Collaborative Technology Environment in Government</i> Adegboyega Ojo, Tomasz Janowski and Elsa Estevez
	How can the data layer collaboration be achieved through Semantic Web technology for the government data integration to achieve better citizen services?	<i>A Case Study for Integrating Public Safety Data Using Semantic Technologies</i> Alvaro Graves
	Can the modernization to the smart grid or other innovative IT technology be achieved across different types of government? What are their strategies for successful adoption and implementations?	<i>Making the Smart Grid Work for Community Energy Delivery</i> Robert J. Sarfi, Michael K. Tao and Leopoldo Gemoets

The first paper by Muhlberger, Stromer-Galley and Webb presents their experience in the Deliberative E-Rulemaking Project (DeER) which intended to facilitate public engagement and commenting in democratic deliberation of rule-making through information technologies. They looked into two cases of e-rule making processes, but these projects ran into obstacles of full endorsement and support by the agency officials and public interest groups for recruiting and facilitating the public engagement. The authors investigated the political policy process literature to make sense of the political and institutional actors' resistance in the direct public participation in the rule commenting process, which is an essential element that provides legitimacy to the democratic process. Through their literature studies, the authors uncover the underlying assumptions about the public role in policy processes.

The findings of the literature studies show that most of the political and policy process models, including rational choice theory, economic theory, theory of subgovernments, incrementalism, mixed scanning theory, theory of issue networks, multiple streams approach, and punctuated equilibrium theory, do not consider the public as the active agent in the policy making. These theories allege the "democratic unfitness of the public," claiming that the public is poorly informed, lacking the basic concepts needed to understand politics, which are important for ambiguous stand points on policy alternatives and their value implications. Alternatively, the

public consists of “rational egoists” who choose to be left ignorant, or “cognitive misers” whose attention is limited, offering no role to the public, and emphasizing the importance of institutional stability and the role of expert elites or policy entrepreneurs who can manipulate the public’s weak opinions. The systematic resistance against a public role in rule-making processes by the government officials and public interests group in the DeER project seems to reflect attitudes of public agency managers and their public interest group counterparts, stemming from the negative implications of public engagement engrained in these policy process theories.

The authors suggest and recommend that policy scholars should consider the importance of the public’s role and examine novel engagement models, as suggested by the deliberative theorists who assume that people are intrinsically social and altruistic and wish to enter the political deliberation process in search of a better understanding of their own preferences, including their responsibilities as citizens and conceptions of the common good.

Social media have been exploited by governments to increase citizen participation. One micro-blogging medium, specifically, Twitter, has proven to be a powerful communication medium for citizens linking to other citizens. Its characteristics include ability to link people to people (follower/following feature) and its capability to broadcast a message (Tweets, Re-tweets). In addition, unlike a static blog page, anyone who is linked can be alerted by the micro-blog messages (also known as Tweets) in real time. This combination of characteristics creates the process of viral message sharing in real time. The involved governments also jumped onto the opportunity of using Twitter, trying to reach out to the citizens and create an information sharing environment. However, a systematic understanding of how, why, and when Twitter is adopted by public organizations and citizens is needed.

Wigand presents mixed theories to explain the diffusion and adoption of Twitter as a technology innovation by governments and by citizens. She uses the concepts and models introduced in the literature, such as opinion leaders, decision making processes, innovation attributes and technology adopters’ characteristics, to explain the adoption variability of Twitter by governments and by citizens. Twitter is being adopted because of the increased expectations that governments should provide these channels for citizens to seek information and interact with government agencies and officials. In addition, the ease of use of this tool and communication channel, and the improvements it achieves over existing communication channels to rapidly disperse information make it attractive for use in digital government.

Another finding is that federal and local/municipal governments are adopting Twitter at a faster rate than state governments and can be identified as early adopters influencing the states. At the federal level, Twitter is adopted primarily for engaging the community, broadcasting and disseminating information, knowledge collection and sharing, extending outreach, recruitment, advertising key events, and updating content. State agencies use Twitter primarily for emergency alerts and for updating content and referring Internet users to a main web site. Local and municipal governments use Twitter for engaging citizens and information collection as well as for sharing and emergency alerts. This paper provides useful guidelines for governments preparing to adopt Twitter as a communication and content sharing platform.

Parts of the open government initiatives and Government 2.0 involve the transparency of government contents and government affairs and encourage citizen participation and collaboration. The shared digital contents are not limited to a textual format, but appear as multi-media videos as well. One such collection of video contents consists of recordings of the President's Council of Advisors on Science and Technology (PCAST). PCAST videos capture the policy deliberation processes where science and technology experts discuss the benefits and impacts of science and technology-related policy proposals.

Deckert, Stern and Sack investigate the historical, political and legislative contexts for PCAST's role and functions for the open government initiatives, and propose a web-based forum called Peer-to-PCAST where scientific testimony videos for PCAST can be peer-reviewed and commented on by peers, just as in the Peer-to-Patent project that has been a successful Government 2.0 example for evaluating US patent applications. Using their previous experience with the Open Video project for congressional proceeding videos, they advocate open content, open format and open technology, allowing the content to be accessible with non-proprietary open source software to be used for designing the Peer-to-PCAST system.

The Peer-to-PCAST system allows the scientific community, policymakers and the public to contribute their comments and reach a consensus. It is a social-media system for commenting and reviewing the video contents by different stakeholders but it makes use of a moderator to make sure that a consensus is found. It also suggests using the notions of boundary work and expertise seeking where the scientific reviews or comments are coming from reputable qualified scientists. In order to ensure the use of experts, the invitation system searches academic papers relevant to the keywords and topic, and identifies the authors to invite for reviewing a particular subject discussed in a video.

Ojo, Janowski and Estavez present the Whole of Government (WG) model for inter-agency government collaboration for coherent policies, joined-up seamless services and integrated project management. It applies the models, requirements and tools of the WG framework to Information Technology Strategy Management (ITSM) that can help modeling, aligning and managing the strategies for IT-related collaborations between agencies. It identifies the generic ITSM requirements for the WG model, and the WG-ITSM toolsets that makes available solutions for these requirements. Specifically, the WG-ITSM framework provides models, guidelines and toolsets, including

- a strategy management model, which defines, relates and constrains the elements of an IT strategy and IT performance scorecard, and provides an object model for the strategic plan;
- a strategy process model, which helps design the strategy design process;
- a strategy integration model, which depicts how the IT strategies of different agencies can be consolidated for combined strategies;
- strategy guidelines that explain process instantiation and explain how to carry out process steps;
- strategy templates that support various steps of the IT strategy process, such as stakeholder analysis, IT capability assessment, IT visioning and goal setting, IT strategy development, IT objectives development and strategic mapping of IT objectives;

- a strategy markup language that is an XML vocabulary for representing strategic IT plans and IT performance scorecards; and
- a strategy management system that enables the development, analysis and reporting of IT strategies and scorecards, as well as centralized management, integration and alignment of IT strategies.

The WG-ITSM framework is applied to analyze a collaborative city government IT project to identify the specific requirements and issues mapped to the WG model's generic requirements and elements in order to verify the framework's validity.

Graves presents a case study of how the government data that are publically available from different government agencies can be converted and integrated into citizen services, using Semantic Web technology. With the transparent government movement, the government data may be readily available but the data from multiple sources suffer from format and semantic disparities that pose big challenges to integrating the data into value-added citizen services. Graves employs Semantic Web technologies, such as the ontology of public safety-related events (e.g. robbery) represented in OWL (Web Ontology), and semantic Resource Description Framework (RDF) including RDF schema and triples to express the relationships among individual data resources. The semantic approach linked the public safety-related data from two different government agencies in the City of Troy to visualize crime events on a map, so that citizens can see crime clusters and types in certain locations and at certain times. The paper reports and discusses the issues of such a system, e.g. the automated process of data conversion and updates to keep up with the real-time events.

Sarfi, Tao and Gemoets present a case study of challenges and different strategies in implementing smart grid systems by small to mid-tier municipal and community-owned utility systems to achieve a strategy of energy conservation and sustainability goals. Smart Grids are broadly defined as "electricity networks that can intelligently integrate the network of the stakeholders, generators, consumers and distributors through the use of technologies for increased automation and coordination in order to efficiently deliver sustainable, economic and secure electricity supplies." The relevant US legislations include the Energy Independence and Security Act (EISA) of 2007 that mandates the Department of Energy to coordinate the federal Smart Grid activities, conduct research and development, enhance interoperability with developing standards and protocols and demonstrate the capabilities through projects. Others include the American Clean Energy and Security Act of 2009 H.R.2454 (passed in the House of Representatives) and the American Clean Energy Leadership Act of 2009 – S.1462 (pending approval). President Obama's speech in 2009 [1] also addressed the need to pass legislation that included building a new electricity smart grid.

However, small and medium sized municipal and community owned utilities face several challenges, such as financial challenges to invest in the modernization necessary to create the smart grid, the future uncertainties created by the business and operational environment that demand not just the energy delivery but also environmental protection, efficiency and energy independence, and skepticism concerning the value of the smart grid.

The paper identifies several factors that play a role in a roadmap for implementation variations by different municipal utilities and presents different ranges of implementations and the environment of eight different utilities. The successes and shortcomings of these small and medium sized utilities are measured with a set of criteria, and the paper draws some meaningful lessons for similar municipal utilities to employ for their smart grid projects. Lessons include 1) adopt distribution automation and associated technologies that enable the utility to control the outcome, as opposed to the customer; 2) Avoid immature technologies that will lead to schedule delays and cost overruns; 3) Assess the current technology investment and make better use of the current state; 4) Select technology investments that are proven to have a short payback period; these can be viewed as disposable in a five year time frame; 5) Use portals where the customers can find services and have increased opportunities for contact with the staff.

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