Maureen C. McCormick. Shedding Light on Transparency: An Analysis of the Breadth and Depth of Federal Agency Implementation of the Open Government Initiative in Online Environments. A Master's Paper for the M.S. in L.S degree. March, 2012. 44 pages. Advisor: Christopher A. Lee.

The Open Government Initiative (OGI) was signed by President Obama on January 21, 2009. The stated aims of the OGI are to promote transparency, participation, and collaboration in executive agencies. Implementation of the OGI focused initially on transparency and data integrity, particularly in online environments.

Open government compliance is of interest to library and information science (LIS) professionals because it utilizes several core competencies taught during LIS graduate programs including data and knowledge management, outreach, collaboration, and data visualization. Managing OGI participation could be a growth area for LIS professionals because of its use of many components of library and information science.

More than three years after the OGI was signed, no broad investigation of the level of agency participation with the OGI has been done. This paper reports on a study to determine how and why agencies are meeting or exceeding compliance minimums concerning online data transparency in online environments.

Headings:

Government. Government accountability--United States. Transparency in government--United States--Evaluation. Knowledge management. Library science. Public administration.

Shedding Light on Transparency: An Analysis of the Breadth and Depth of Federal
Agency Implementation of the Open Government Initiative in Online Environments

by
Maureen C. McCormick

A Master's paper submitted to the faculty
of the School of Information and Library Science
of the University of North Carolina at Chapel Hill
in partial fulfillment of the requirements
for the degree of Master of Science in
Library Science.

Chapel Hill, North Carolina

March 2012

Approved by

_____

Christopher A. Lee

Table of Contents

Introduction

Background

On January 21, 2009, President Barack Obama's first full day in office, he signed the Open Government Initiative (OGI). It is a call for executive agencies to incorporate a culture of transparency, participation, and collaboration into every aspect of operation. Open government enforcement, including its advancement and compliance, are growing areas in the LIS field. It includes several traditional LIS fundamentals, such as data, information and knowledge management, outreach, and records management. In essence, open government sits directly at the intersection of government and library and information science.

OGI implementation efforts have thus far focused primarily on transparency. As a result of the initial focus on transparency and the push for greater online access to government information, this paper examines only efforts made towards greater transparency in online environments. Compliance and enhanced participation with the transparency portion of the OGI were measured among participating agencies in online environments, as were factors influencing whether or not an agency chose to participate.

Problem Statement

Although a significant amount of information and literature exists about the open government movement in America, there is also a heated debate about it, focused on matters ranging from practices and implementation, to the very utility and helpfulness of the OGI generally.

Open government has been advanced as an Obama Administration policy in the hopes of encouraging innovation, giving citizens access to information without them specifically requesting it, and encouraging participation and collaboration. Agencies are using a variety of methods to achieve these lofty goals, but some of the common methods include the use of social and new media, more solicitation of public comment, and the publication of datasets both on their own websites and on data.gov, the government data repository launched in conjunction with the OGI (Staff Writers, 2009).

To date, there has been no analysis of the OGI's implementation in the executive branch overall, and, as a result, there is a fundamental lack of understanding as to how the OGI has been received or implemented across the federal government. For LIS professionals to gain a foothold in open government administration, they must understand what has been done so far and in which agencies and areas there is room for significant improvement.

Currently, there is a lack of knowledge about *how* or *why* agencies may choose to meet or go beyond the compliance minimums set by the OGI. This study attempts to address that shortcoming by providing information about relationships between enhanced participation and several independent variables (further explained in the "Methodology" section). To date, no study of this kind has been conducted.

I identified three primary research questions to guide and inform my study:

1. Are agencies that are required to comply with the OGI meeting the compliance requirements? Are they going above and beyond the minimums? Is there a difference between Cabinet-level and non-Cabinet-level agencies?

2. Are agencies not required to comply with the OGI choosing to do so? Is there a difference between the larger, better-funded agencies and those that are smaller with less funding?

3. How does representation on the Open Government Working Group affect compliance?

Importance, Implications, and Scholarly Contribution

As noted previously, the first phase of the open government movement, as implemented in the United States federal government, dealt with data transparency and increased data access. This phase sought to increase innovation by citizens and enhance that engagement with government data. Although larger agencies likely have more data to release, it is nonetheless important for smaller agencies to release data as well. In addition, many believe that there is a societal good to having a transparent government that engages its citizens (Sifry, 2010 and Tapscott, 2010). This requires participation across the federal government for maximum impact.

To date, I have been unable to find a high-level analysis of compliance with the OGI. Since my analysis also takes into consideration sub-Cabinet level agencies and the levels of agencies' compliance, my research adds to the corpus of knowledge about OGI compliance.

Literature Review

This section is divided into three subsections. The first gives a general overview of the history of the Open Government Initiative and Directive, the policy statements that form the cornerstone for this study. The second section dissects the Open Government Movement, its implementation in the U.S., adoption, and several key components of both the Movement and the OGI. Finally, the third section acts as a conclusion to the literature review, reiterating several key points from the literature.

This paper examines the extent of voluntary participation and mandatory compliance with the OGI. As detailed earlier, the research questions address the extent of compliance or participation and how different variables -- agency size and funding, representation on the Open Government Working Group, and presence on the White House Open Government Scorecard -- affect compliance and participation.

The open government literature I have reviewed includes articles published in peer-reviewed journals, books, directives issued by the White House, and documents published by government agencies, among others. In addition to traditional modes of publication, I also reviewed articles in online journals, and messages on government and non-profit blogs and wikis. Although unconventional, blogs have been one of the most common tools employed by government agencies and other government entities to make their organizations more accessible in response to the open government movement in America. As a result, it was important to consider the messages contained in blog posts along with traditional literature.

I. Introduction

In general, the literature has spoken to several key areas of open government: the importance of the OGI and the Open Government Movement; core concepts and points of the OGI; agency implementation; and critiques of the OGI and its public reception. This paper focuses only on steps taken to open government up on online platforms, because, in the words of Beth Noveck, "We are drawn to collaboration enabled by the Internet" (Noveck, 2009, p. 189) and as Carl Malamud states, "Today *public* means *online*" (Malamud, 2009, p. 46).

The notion that citizens in a democratic society are entitled to view the documents and proceedings of their government is far from new. Indeed, it dates back to at least the Enlightenment (Lathrop, 2010, p. xix). In the United States, we have witnessed at least three distinct waves of government, which have promoted varying degrees of openness. The first, which Carl Malamud calls "the Founders wave" established the notion that the American government must communicate with its constituents. The second, "the Lincoln wave," set forth the foundational principles of documentation of proceedings and public consultation. Finally, the third wave, which we are now experiencing, Tim O'Reilly refers to as "the third wave" or "The Internet wave." Thanks to the advent of the Internet and new/social media and web 2.0 technology, it is possible in this third wave that "the underpinnings and machinery of government are used not only by bureaucrats and civil servants [but also] by the people" (references in previous paragraph all from Malamud, 2009, p. 43).

The third wave has coincided largely with calls to open up government and make it more transparent. Here, too, is where LIS professionals have an opportunity to make their mark on the open government movement. With technical expertise and prior experience dealing with records management and information requests, LIS professionals can step in during this third wave and improve open government implementation from an LIS perspective. Each of these waves has built upon the previous and been accompanied by major reforms. In the past, these reforms have included publication of rules and regulations and better public record laws. Now, reform is taking place in the form of the open government movement.

II. Open Government

Importance

The OGI officially became part of the Obama agenda when it was signed on his first day in office. Unofficially, open government was an espoused part of the Administration's agenda well before the election, as he repeatedly said that, as President, he would make government more transparent, participatory, and collaborative, resulting in "a Washington that works" (Chopra, 2010). During the 2008 presidential campaign, then-candidate Obama noted the importance of being able to harness knowledge through a more open government by saying, "Knowledge is widely dispersed in society, and public officials benefit from having access to that dispersed knowledge" (Obama as quoted in Sifry, 2010, p. 115).

Innovation

Currently, we stand at a crossroads. The Internet, social media, and web 2.0 technologies are making it possible for millions of people dispersed across vast geographic areas to simultaneously participate in one, singular conversation (Reich, 2009, p. 132) for the first time in history. In addition, increased government transparency is a major priority at the highest levels of government.

Furthermore, while earlier attempts at e-government focused primarily on making existing services available online, or "paving the cow paths" (Tapscott, 2010, p. xvi), current open government efforts are actually improving upon government services, or even creating new ones (ibid). This is resulting in not only new services, but better services and service delivery. By opening up datasets and providing the citizenry with more complete access to information, citizens are in turn able to tailor their experience with government. This can now be done by developing applications to make data useful (O'Reilly, 2010, p. 17) or by communicating with government representatives through new media (Drapeau, 2009, p. 127 and Reich, 2009, p. 131).

Why Open Government?

The oft-repeated question among skeptics is simply, "Why open government?" There are several reasons why it has become a priority for the current administration. First, closed governments have the potential to harm citizens in a way that other entities (such as private corporations) generally cannot (Fung & Weil, 2010, p. 109), and citizens have the right to know what their government is doing (ibid, 106). One way that the OGI combats the potentially nefarious intentions of government is by encouraging agencies to

go forward with the "proactive release" of high-value datasets (Horvit, 2011). Open Government architects in the White House also challenged agencies to incorporate the spirit of the OGI and the subsequent Directive into their agency culture. As a result, agencies have begun to do so in their trainings (Jones, N., French, C., & Willard, E., 2010, p. 9) and in some cases, even reorganizing to reflect a more open culture.

Second, the ongoing fiscal reality is that "most governments will have to do more with less, both today and in the future" (Tapscott, 2010, p. xvii). The transparency measures implemented as part of the OGI allow citizens to do some of the "heavy lifting" by developing applications (apps) and transforming data into useful products (ibid) that the government may not be able to do itself (Burton, 2010, p. 6) or anticipate the need for.

Third and finally, the Internet age and open government actions on online platforms have made it possible for everyday citizens to influence the way that government actually *works* by creating and using apps that agencies have often picked up for internal use. The promise of online deliberation makes greater citizen participation in government matters—historically a huge hurdle for governments to overcome—possible like never before. If an effective online platform can be developed for this, it will be possible to facilitate "effective deliberative meetings at times when members couldn't easily get together for face-to-face meetings" (Schuler, 2010, p. 97). This presents "the promise of an opportunity…for a better democracy" (Malamud, 2009, p. 47) like we have not seen in the recent past. Additionally, this cooperative effort by many people has the potential to "produce greater legitimacy than government currently enjoys" (Noveck,

2009, p. 33). These legs (participation and collaboration) of the OGI are not addressed in this paper, but are nonetheless important parts of both the OGI and the Movement.

Transparency vs. Accountability

Previously, many efforts at increased government transparency were aimed at making government more accountable. This did not necessarily make government leaders receptive to further transparency efforts since these accountability efforts frequently led to "a 'gotcha' game in which the information provided by open government measures is used by journalists, advocacy groups of the right and left, and political opponents to catch official wrongdoing" (Fung & Weil, 2010, p. 106). Now, however, transparency efforts aim not necessarily to increase reactive accountability, but the proactive release of information (ibid).

Core Concepts

There are three main parts of the OGI: transparency, participation, and collaboration (Orszag, 2009). The first stage of implementation has focused primarily on data transparency in government agencies. Data.gov, a central repository for government-published datasets, was established more than two years ago (Staff Writers, 2009). The idea behind data.gov was not just to consolidate datasets, but also to make data more accessible and, according to Peter Orszag, encourage "citizen feedback and new ideas" (Orszag, 2009).

Since the launch of data.gov, citizens have been able to access raw data from government agencies, and "ordinary citizens have the ability to seek out, use, and *transform* data like never before" (Malamud, 2009). Because data.gov allows for open application programming interfaces (APIs) for government data, application developers

are able to create applications that allow people to use the data as they choose (O'Reilly, 2010, p. 17). Use of this technology "helps people to route around the logjam" (Noveck, 2009, p. 29) and solve problems for themselves using government information. As Beth Noveck notes, this is both practical and helpful because "innovation is not emanating from Washington; instead, the practices of government are increasingly disconnected from technological innovation" (Noveck, 2009, p. 34).

Carol Lukensmeyer and others have identified five distinct types of participatory activities: informing, or giving the public balanced and objective information; consulting, or obtaining feedback from the public; engaging, or working with the public to ensure the concerns are considered; collaborating, or working with the public in every aspect of the decision; and empowering, or giving final decision-making authority to the citizenry (Lukensmeyer et al, 2011, p. 14). These types of activities are all encouraged under the OGI.

Implementation

Several agencies have stood out in their implementation of the OGI, including the Environmental Protection Agency, the Department of Transportation, the Department of Health and Human Services, and the National Aeronautics and Space Administration (NASA) (Lukensmeyer et al, 2011, p. 33). The National Security Archive conducts annual audits of open government implementation. It found, through Freedom of Information Act (FOIA) requests, that not all agencies are living up to the standards laid out by the Open Government Directive, particularly with regard to FOIA compliance (Jones, N., French, C., & Willard, E., 2010). In fact, the Archive found that 17 of the

agencies party to the audit did not respond to its FOIA request within the appointed time frame (ibid, p. 11).

On a procedural level, some of the most common strategies that agencies employed when first implementing their open government plans included social media, crowdsourcing, and collaborative online ideation platforms such as IdeaScale (Lukensmeyer et al, 2011, p. 20). Additionally, some agencies are in the process of making the switch from using primarily proprietary software to open source, notably the Department of Defense (O'Reilly, 2010, p. 17). This change from proprietary, closed software platforms to openly available ones whose code is public appears to embrace the spirit of the Open Government movement, which calls for a more complete public understanding of how the government operates. More directly, the OGI requires that agencies publish in open formats when possible.

One of the most popular methods used by agencies has been to create blogs written by agency employees. This can have the effect of personalizing the agency and getting away from the official line of the press office, making the agency more accessible. For instance "Blogger Bob," who blogs for the Transportation Safety Administration has "been empowered by his organization to write with a personal viewpoint that showcases the personality of a human rather than the coarseness of official jargon" (Drapeau, 2009, p. 127).

It should be noted that there has been some criticism that "too much attention has been paid to the process of making our government more transparent and not enough consideration has been given to whether the goals of transparency are truly being achieved" (Reich, 2009, p. 134). This implies that, while agencies may be meeting the

technical minimums of the OGI, there has been little measurement of whether or not it is

being implemented in the spirit intended by the original architects.

Open Government Critiques and Public Reception

Despite its uncontroversial nature on the surface, the open government movement

was not welcomed with open arms by all. Even some who have an important stake in the

success of the movement, such as citizens and investigative reporters, have been critical.

The editor of a journal for investigative reporters remarked in an opinion piece that, even

if open government was working incredibly well, it would still be far too dependent on

the "whims of those in power" (Horvit, 2011). He further remarked that "any policy that

relies too much on government to open itself is flawed, because it puts the balance of

power in the wrong half of the equation" (ibid).

Related to the limitations of the open government movement that Horvit finds,

others have implied that perhaps the OGI does not do enough to truly make government

more open. Carl Malamud writes: "The principle that primary legal materials should be

available to all is a principle that needs to be driven by the leadership of the executive

branch and applied to all levels of government" (Malamud, 2009, p. 46). However, as a

legal matter, the OGI cannot apply to other branches of government, and therefore

applies only to executive branch agencies.

The open government movement also faced hurdles even getting off the ground.

For better or for worse, "the wheels of government do not turn merely because the

president gives an order" (Drapeau, 2009, p. 123). It takes significant time and effort to

create significant agency buy-in, something with which the administration still struggles.

Additionally, even though there are compelling reasons for agencies to participate

(particularly given the current financial climate), there are also compelling reasons not to participate. In the past, sunshine groups looking to make government more transparent have sought "information that most organizations would not voluntarily disclose" (Fung & Weil, 2010, 111). Examples of this include the National Security Archive and the sunshine groups that sought to overturn Executive Order 13233, which limited access to the records of former presidents. From the agencies' perspective, it is frequently "cumbersome to comply with these requirements" (ibid.). One of the architects of the OGI, Beth Noveck, even argued that "more active involvement in government by self-selecting citizens would only increase the risk of corruption" (Noveck, 2009, p. 41) and that open government is potentially harmful as a result. This implies that she was concerned from the outset that the "self-selecting citizens" who choose to participate in a more open government would be so concerned with niche causes that they would actually harm open government efforts and make it more corrupt.

The public has not been entirely pleased with the way that the open government movement has been implemented, either. An analysis of more than 5,100 citizen survey responses to agencies' open government websites reveals that citizen trust in government is even lower now than it was a year ago (Steirnstein, 2011). Citizens do not believe the public officials are being frank with them, despite the strides made to open the government (Steirnstein, 2011).

One final major criticism of open government implementation by the federal government is that it has seemed at times to be theatrical. For example, Micah Sifry details an "online town hall" that President Obama hosted in July 2009. Prior to the event, Obama had promised to answer some of the "most popular questions" submitted

by citizens via Facebook, Twitter, and YouTube (Sifry, 2010, p. 118). However, on the day of the event, "there was no mechanism established to determine which ones were indeed popular" (ibid.). As a result, staffers simply chose which questions he would answer, producing, according to Sifry, "an event that was less spontaneous and less town-hall-like than if all the questions had come from citizens live at the event using no technology at all" (ibid).

III. Conclusion

While a significant amount of information and literature exists about the open government movement in America, there is also a great deal of debate about best practices, implementation, and in some cases, even the utility and helpfulness of it generally. Additionally, the LIS field has been noticeably absent from the discussion, despite what should be a vested interest in the success and continuation of open government.

Open government has been advanced as a policy of the Obama Administration in the hopes of encouraging innovation and encouraging participation, giving citizens access to information without them having to specifically request it. Agencies are using a variety of methods to achieve these lofty goals, but some of the common methods include the use of social media and new media, more solicitation of public comment, and the publication of datasets both on their own websites and on data.gov, the government data repository launched in conjunction with the OGI.

Methodology

      This section is divided into three subsections. The first gives an overview of the methodological background and initial analysis. The second outlines the information that I analyzed and the metric that I developed to measure quantifiable points of compliance and participation. The final section addresses content analysis as a methodological choice. A short review of relevant literature regarding content analysis is included at the end.

Methodological Background

      For this study, I identified compliance minimums in the OGI (Table 2) and conducted a content analysis of agency websites. Only agencies with a /open domain (e.g. www.justice.gov/open) were considered to be "participating in the OGI" (see Table 1 for definitions of key terms referenced in this paper) because this is the public-facing open government web address for all federal agencies. Without the public-facing open government web address, it would be impossible for a member of the general public to know that the agency was participating in the OGI in a meaningful or official way. Mindful of the importance of publicly available and public-facing information for open government efforts, I only attempted to access publicly available data and information. After I determined participation, I then conducted content analysis of the Open Government webpages of agencies that participate in the OGI.

      Currently, no tool exists to evaluate overall compliance or participation in the OGI. There is a tool, the Open Government Portfolio Public Value Assessment Tool (PVAT) (Towns, 2011), that analyzes individual open government plans to determine their public value, but it was not applicable for this study because it does allow for

analysis in the aggregate. The PVAT is intended for use by the agency officials who

develop open government plans, in order to maximize the plans' public utility. In other

words, the PVAT is meant to be a qualitative internal evaluation tool, not a tool for

outsiders to use in order to check compliance or make comparisons between agencies.

Since there is no applicable tool for evaluating Open Government participation, I have

developed a metric to quantify and analyze data collected related to OGI participation

and compliance.

Table 1: Definition of Key Terms	
Term	**Definition and Source**
Boards, Commissions, and Committees	"These organizations were established by congressional or Presidential action, and their functions are not limited to supporting a parent agency." From: usa.gov
CFO Act	The CFO Act is a law signed in 1990 by President George H.W. Bush. It was an attempt to create greater financial accountability within 24 high-profile executive agencies. It broadened the responsibilities of OMB and established financial accountability officers (CFO's) within the agencies affected by the Act. Information and full text located here: http://www.gao.gov/special.pubs/af12194.pdf
Compliance	Agencies were determined to be in compliance with various elements of the OGI if they met the minimum requirements set by OMB in the Directive and Memorandum.
Data Integrity	The appointment of an upper-level manager to be "accountable for the quality and objectivity of, and internal controls over, the Federal spending information publicly disseminated through such public venues as USAspending.gov or other similar websites." From: USAID /open page, but common definition across many agencies
Executive Department	Those entities part of the Executive Branch of the government whose heads serve as part of the President's Cabinet. From: usa.gov
High-value	High value datasets are defined as such by the individual agencies. Generally, "[h]igh value information is information that can be used to increase agency accountability and responsiveness; improve public knowledge of the agency and its operations; further the core mission of the agency; create economic opportunity; correspond to need and demand as identified through public consultation." From: Kundra via Wendy Ginsberg CRS Report ("Issues for Congress")
Independent Agency or	"Independent establishments are created by Congress to address concerns that go beyond the scope of ordinary legislation. These

Corporation	agencies are responsible for keeping the government and economy running smoothly." From: usa.gov
Open Government Directive and Memorandum	The memorandum issued by then-OMB Director Peter Orszag on December 8, 2009 to heads of executive agencies that laid out the groundwork for the open government movement in America. Located at: http://www.whitehouse.gov/open/documents/open-government-directive
Open Government Initiative	Term referring specifically to the open government movement in America. Began with President Obama's issuance of the Memorandum on Transparency and Openness issued January 21, 2009. Located at: http://www.whitehouse.gov/the_press_office/TransparencyandOpenGovernment/
Social/New Media	"Federal agencies are increasingly using recently developed technologies (commonly referred to as "Web 2.0" technologies) that offer flexible, sophisticated capabilities for interaction with individuals, allowing agencies and the public to publish comments, photos, and videos directly on agency-sponsored Web pages." From: http://www.gao.gov/assets/130/125110.pdf. Includes social networking platforms, wiki spaces, and blogs. Specific platforms include, but are not limited to: Facebook, Twitter, FourSquare, LinkedIn, Flickr, MySpace, YouTube, Vimeo, and iTunes.
White House Scorecard	Also known as: "White House Open Government Dashboard." A matrix on the White House Open Government page that tracks the progress of various executive agencies in achieving open government. Located at: http://www.whitehouse.gov/open/around

The first step in my data collection and analysis was to analyze the Open

Government Directive and Memorandum and determine the compliance points set out in

these documents. My study dealt only with transparency requirements laid out in the

Directive and Memorandum, but all points were considered and analyzed in order to

determine their primary focus (transparency, participation, or collaboration). Table 2

shows the results of my analysis of the Memorandum. Seven of the eight points (all but

the publication of three, high-value datasets on data.gov) were Boolean values, and

dataset publication was a quantitative value.

Table 2: Open Government Directive and Memorandum Analysis (Requirements in **BOLD** analyzed in this study)			
Measurement Number	**Requirement**	**Goal**	**Location**
1	**Create /open website that includes mechanisms for public to:** **1) Give feedback on information published;** **2) Provide input on what info to publish (prioritization);** **3) Provide input on agency's Plan.**	**Increase public awareness of open government activities**	**Memorandum, pg. 3**
2	**Publish information online in addition to other formats**	**Transparency**	**Memorandum, pg. 2**
3	**Publish 3 new, high-value datasets on data.gov**	**Increase transparency and access**	**Memorandum, pg. 2**
	"Proactively disseminate data" (do not wait for FOIA requests)	Increase transparency and access	Memorandum, pg. 2
	Publish FOIA report on /open page	Increase transparency and access	Memorandum, pg. 3
	Reduce FOIA backlog by 10% each year	Increase transparency and access	Memorandum, pg. 3
	Implement Presidential open government activities: 1) data.gov 2) eRulemaking 3) IT Dashboard 4) recovery.gov 5) USAspending.gov	Increase transparency and access Create agency buy-in	Memorandum, pg. 3
4	**Develop and publish an open government plan**	**Improve transparency, incorporate participation and collaboration into the culture**	**Memorandum, pg. 4**

	Update the plan every two years	Improve transparency, incorporate participation and collaboration into the culture	Memorandum, pg. 5
5 (This point was considered and monitored, but not tested for statistical significance because of the makeup of the group (detailed later).)	**OMB will convene a working group**	**Improve transparency, incorporate participation and collaboration into the culture; create a forum to discuss best practices**	**Memorandum, pg. 5**
6	**Publish in open format**	**Be machine-readable/searchable and promote re-use**	**Memorandum, pg. 2**
7	**Respond to input received from public**	**Engage citizens**	**Memorandum, pg. 3**
8	**Designate a senior official to be in charge of info quality**	**Improve accountability**	**Memorandum, pg. 3**
	Detail internal controls over info quality	Improve accountability	Memorandum, pg. 4
	Comply with OMB guidelines, report spending quarterly	Increase spending transparency	Memorandum, pg. 4
	OIRA, the CIO, and the CTO will review policies to identify impediments to the use of new technologies	Allow the use of emerging technologies for open government; find and eliminate roadblocks	Memorandum, pg. 5

Quantitative Metric Developed for this Study and Variable Relationship Analysis

After determining participation, I applied a metric to assign quality points to

participating agencies that exceeded minimums in quantitative compliance areas. There

are seven areas related to transparency in the OGI (eight, including the Open Government

Working Group). This analysis was later used in order to compare levels of participation

with agency characteristics, such as size and capacity. The metric accounts for both non-

compliance and exceptional compliance for the quantitative areas. Points for compliance,

non-compliance, and enhanced compliance (that which goes beyond the requirements

laid out in the Directive and Memorandum) were assigned in the following manner:

Table 3: Quantitative Metric	
Level	**Points Earned**
Non-compliance	-1
Complete (basic) compliance	0
101-150% compliance	1
151-200% compliance	2
Greater than 200% compliance	3

Thus, hypothetically, if an agency published 23 datasets on data.gov, 8 of which it had

designated as high-value, I would award 3 quality points for data publication.

For the remaining Boolean value transparency requirements (see Table 2 for my

analysis of the Open Government Directive and Memorandum) in the OGI, either 0 or 1

point was assigned. For instance, if there was an agency did not publish a plan on its

/open website (a compliance requirement), this yielded 0 points. A link to the published

plan yielded 1 point.

To better understand factors affecting an agency's likelihood to have enhanced

OGI participation, I used the proposed 2012 federal budget to determine requested

agency funding and each agency's requested full-time equivalent (FTE) positions for the

2012-2013 year. I used two proxies for agency capacity so that I could compare the

results of each measure, ensuring that each measure yielded valid results. I then used

statistical software to run t-tests and chi-square tests as appropriate to determine

relationships between the independent and dependent variables.

Although a federal budget has not been passed since 2010, I chose to use the 2012

fiscal year proposed budgets from the agencies. I decided to use the proposed budgets

rather than the continuing resolutions because I believed they would more accurately

represent the agencies' perceived needs. The 2012 budgets were used for both FTE and

budget figures.

After measuring participation and capacity, I used statistical software to run t- and

chi square tests, determining relationships between the independent and dependent

variables. Generally, the dependent variable measured was agencies' OGI transparency

as reflected by data and navigation on data.gov and /open domains.

A list of coding elements is listed later in the methodology section, but in general,

the independent variables that I analyzed were:

- Position in agency hierarchy (explained below);
- Representation on the Open Government Working Group;
- Presence on the White House Scorecard; and
- Capacity (measured by two different variables: number of FTE positions and funding quartiles).

In addition to this analysis, I completed an analysis of participating agencies' social

media presence to determine the rate at which agencies participating in the OGI maintain

a social media presence. I did this analysis because social media use is one of ways that

the Obama administration has effectively reached new groups of constituents, and

arguably one of the most important advancements of the administration (Harfoush, p. 46).

Additionally, social media tools commonly used by government entities, such as

Facebook and Twitter, are free. I was interested to see whether or not social media tools

were used by agencies with lower capacity since they require few additional resources.

Finally, the terms of service agreements that allow social media use by government

entities were negotiated by the General Services Administration during the Obama

administration in response to the Open Government Directive (U.S. General Services

Administration, 2011). To determine social media usage, I looked first on agency /open

pages for widgets directing visitors to social media platforms (e.g. "Like us on

Facebook!" or "Follow us on Twitter!"). If nothing was found on the /open page, then I

searched for the agency on Facebook because it is the most commonly used social media

platform (Leggatt, 2011).

Coding Elements

Before coding elements, agencies were sorted according to their position on the

hierarchy of agencies. Each agency designation was populated according to the list on

usa.gov. The hierarchy is:

1. Executive department;
2. Independent agency or corporation;
3. Board, commission, or committee; and
4. Other participating offices (Note: Entities that fell under the "Other Participating Offices" designation were not included in the statistical analysis, because no comprehensive list of quasi-independent offices exists. The "other participating offices" found were found solely because of their representation on the White House Scorecard or the Working Group).

Then, agencies were coded for the following elements:

- Agency Name
- Main Website (web address)
- /open Page? (yes or no)
- Number of Data Sets Released on Data.gov
- Data Set Quality Points (according to quantitative metric)
- Data Integrity (location of the senior official in charge of data integrity)
- Data Integrity Binary Measure (1 or 0)
- Public Comment/Consultation (yes or no)

- Social Media Binary Measure (1 or 0)
- Published Plan (yes or no)
- Binary Plan Measure (1 or 0)
- PLAIN Language Published? (yes or no)
- Represented on Working Group? (yes or no)
- Binary Working Group Measure (1 or 0)
- Represented on Scorecard? (yes or no, also called "White House Open Government Dashboard")
- Binary Scorecard Measure (1 or 0)
- FTE Employees (2012 Requested)
- FTE Quartile (within Agency level)
- Total Budget (2012 requested)
- Budgetary Quartile (within Agency level)
- Budget over $1 billion (1 or 0)
- Budget $500 million - $1 billion (1 or 0)
- Budget $100 million - $500 million (1 or 0)
- Budget $50 million - $100 million (1 or 0)
- Budget $25 million - 50 million (1 or 0)
- Budget less than $25 million (1 or 0)
- Date Data Accessed

Content Analysis as a Methodological Choice

As discussed earlier in the methodology section, I used quantitative content analysis techniques to determine levels of agency compliance and voluntary participation with the OGI. Content analysis, an "often descriptive" method (Riffe, D., Lacy, S., & Fico, F., 2005, p. 33) has a long history among researchers, dating back to the 18th century in Scandinavia (Rosengren, 1981, as quoted in Hsieh, H.-F. & Shannon, S., 2005, p. 1278).

Content analysis allowed a degree of flexibility for researchers when analyzing data that is not possible when using other methods (Hsieh, H.-F. & Shannon, S., 2005, p. 1277). It allowed for the "subjective interpretation of the content of text data through the systematic process of coding and identifying themes and patterns" (ibid., p. 1278). One of the major advantages of quantitative content analysis is that quantitative content

analysis permits "statistical comparisons between" the variables (Mehmetoglu, M., 2004, p. 178).

When conducting a content analysis study it is important for researchers to remember that, even though the text is being picked apart and categorized based on its meaning, there remains an "underlying, often abstract theoretical concept" (Riffe, D., Lacy, S., & Fico, F., 2005, p. 24). Herein lies one of the great criticisms of content analysis from a methodological standpoint: internal validity. For this study, I was the only coder, and due to constraints and the limitations presented by overwriting information on websites, it was impossible to conduct an inter-coder reliability test.

Interestingly, "quantitative descriptive content analysis often represents the earliest study in an area" (Riffe, D., Lacy, S., & Fico, F., 2005, p. 34). For this reason, it seems particularly fitting that this paper relies on the method, as this is the first known study of its kind.

Limitations and Threats to Validity and Reliability

The most important limitation and threat that my methodology faces is the possibility of coder bias. Theoretically, this could have been limited by conducting an inter-coder reliability test and having another coder conduct the same content analysis on a sample of agency webpages and then compare the results to determine if the differences are statistically significant. Unfortunately, as discussed above, this was not feasible. Data were collected over a one-week period in July 2011 for another purpose. By the time they became relevant to this study, it was impossible to know if the data on webpages were the same as in July.

A more technical limitation to the study relates to recent government budgetary problems. To date, a federal budget has not been passed for the 2012 fiscal year. No budget was passed for the 2011 fiscal year. Agencies have been operating on a continuing resolution, but this resolution does not account for changes in agency size, capacity, or priorities. In an attempt to account for this, the proposed 2012 budget was used for data regarding agency capacity, despite the fact that it was not passed or enacted. This was a calculated choice made in the hopes of accounting for what agencies and the executive branch in general perceive to be changes in agency capacity and need.

The metric developed was reviewed by peers and professionals and revised as necessary according to their suggestions. It is important to note that the information contained on the websites will likely change over time and it may be impossible to find the exact set of data observed at a future date. However, using the coding elements that I elaborated above, one could conduct a study in the future to measure changes in open government participation and implementation.

Findings

As previously established, participating executive departments, independent agencies and corporations, and boards, commissions, and committees (full list located in Appendix F) were evaluated on several criteria. Data were collected over a one-week period in July 2011, and analyzed between August 2011 and January 2012. Table 4 shows the overall breakdown of how many agencies per entity type were compliant with each requirement of the OGI.

Table 4: Overall Compliance by Participating Agencies with Compliance Minimums by Entity Type		
Entity Type	**Compliance Point**	**Number in Compliance/Number Participating**
Executive Department	Create /open website	15/15
	Publish information online	15/15
	Publish 3 new, high-value datasets on data.gov	15/15
	Develop and publish an open government plan	15/15
	OMB will convene a working group	15/15
	Publish in open format	15/15
	Solicit and respond to input received from public	15/15
	Designate a senior official to be in charge of info quality	15/15
Independent Agency	Create /open website	49/49
	Publish information online	48/49
	Publish 3 new, high-value datasets on data.gov	24/49
	Develop and publish an open government plan	33/49
	OMB will convene a working group	16/49
	Publish in open format	27/49
	Solicit and respond to input received from public	43/49
	Designate a senior official	38/49

	to be in charge of info quality	
Boards, Commissions, and Committees	Create /open website	4/4
	Publish information online	4/4
	Publish 3 new, high-value datasets on data.gov	0/4
	Develop and publish an open government plan	3/4
	OMB will convene a working group	0/4
	Publish in open format	2/4
	Solicit and respond to input received from public	4/4
	Designate a senior official to be in charge of info quality	2/4

Overall, analysis showed that the highest percentage of participating agencies by category was among Executive Departments, followed by Independent Agencies, and finally Boards, Commissions, and Committees (Figure 1). This mirrors the general hierarchy of federal agencies (explained in the "Methodology: Methodological Background" section). Moving down the hierarchy, the entities become less likely to participate in the OGI. Figure 1 shows this phenomenon.

Figure 1: Participation Percentage by Category of Entity
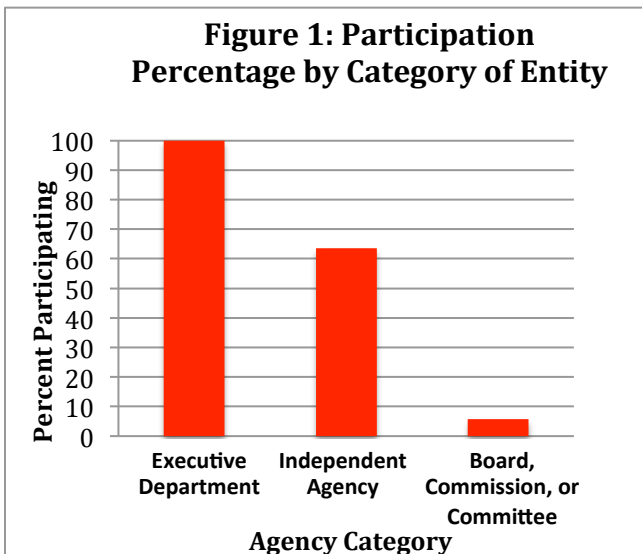
Likewise, moving down the hierarchy, participating agencies are less likely to meet or exceed the compliance minimums set by the OGI. Figure 2 shows the percentage of participating agencies that were meeting or exceeding compliance minimums at the time of data
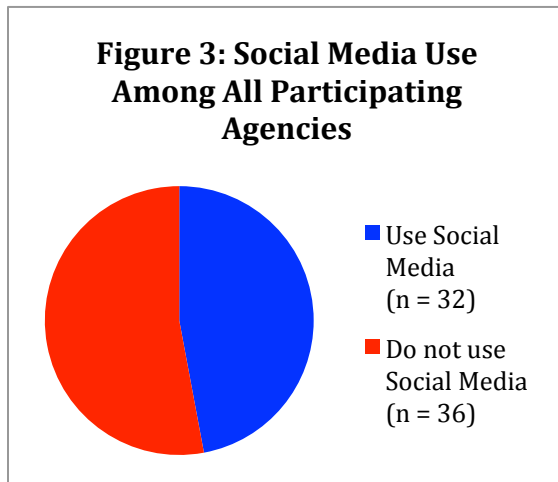
collection, broken down by category.
The figure illustrates that Executive
Departments and participating
Independent Agencies are meeting or
exceeding minimums more often
than Boards, Commissions, and
Committees.
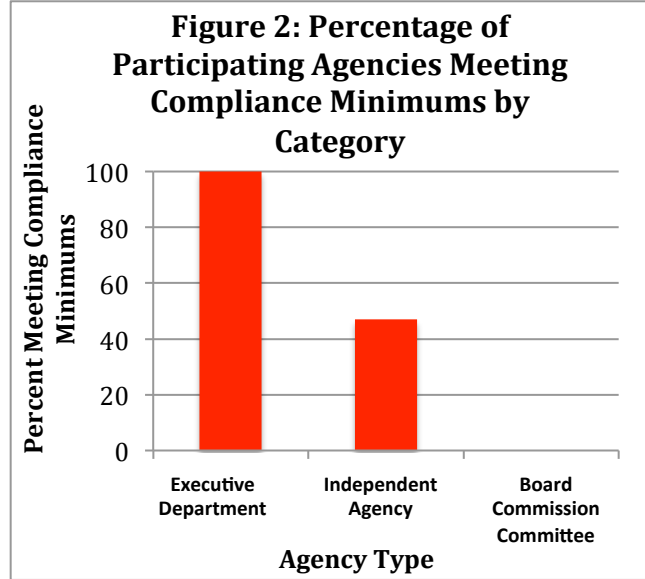
Statistical analysis of the data

Figure 2: Percentage of Participating Agencies Meeting Compliance Minimums by Category

indicates that both budget and FTE capacity are statistically significant to participation, at

the 95% confidence interval. This is represented in Tables 5 and 8 by a chi-square or t

score of more than 2. With regard to the FTE capacity indicator, this means that agencies

with an FTE level above the overall median (which was 1365 FTE employees) were more

likely to participate in the OGI, and agencies with an FTE level at or below the median

were less likely to participate (Table 8). Tables 6 and 7 show the general breakdown of

cases over the median number of FTEs and likelihood of participation of cases over

median, respectively.

Figure 3: Social Media Use Among All Participating Agencies

■ Use Social Media (n = 32)

■ Do not use Social Media (n = 36)

Budget was also found to be

statistically significant (Table 5). Those

agencies in the highest budgetary band

(over $1 billion) were far more likely to

participate, and those in the lowest

budgetary band (under $25 million) were

less likely to participate. Analysis of the

bands in the middle did not indicate any statistical significance.

Figure 3 shows the analysis of my binary measure of participating agency use of social media. As established earlier, the binary social media measure was not meant to advance a quality of participation argument, but to determine if agencies were using social media. It has only been since the beginning of the open government movement that agencies have been allowed to use social media tools and terms of service negotiated with providers (U.S. General Services Administration, 2011), and it was purely a means to determine whether or not agencies were using the tools. As seen in Figure 3, less than half of all participating agencies had a discernable presence on social media platforms. This was measured by advertised participation on agencies' open government webpages as well as searches run on Facebook (further described in the "Methodology" section).

Table 5: Statistical Test of Budgetary Significance			95% Confidence Interval of the Difference	
		t	Lower	Upper
budgetband1	Equal variances assumed	-4.217	-.573	-.206
	Equal variances not assumed	-5.559	-.529	-.250
budgetband2	Equal variances assumed	-.856	-.152	.061
	Equal variances not assumed	-.982	-.139	.047
budgetband3	Equal variances assumed	-1.428	-.257	.042
	Equal variances not assumed	-1.643	-.237	.023

budgetband4	Equal variances assumed	.304	-.103	.141
	Equal variances not assumed	.293	-.109	.146
budgetband5	Equal variances assumed	.037	-.105	.109
	Equal variances not assumed	.037	-.107	.111
budgetband6	Equal variances assumed	5.729	.341	.703
	Equal variances not assumed	5.419	.329	.716

The t-tests in Table 5 on the budgetary bands shows that the lowest band (budgetband1, under $25 million) and the highest band (budgetband6, over $1billion) were both statistically significant on the dependent variable of participation. This is represented by the t-score above 2 or less than -2.

A chi-square test was performed to determine the significance of FTE capacity on participation. The tables below indicate that agencies with more than the median number of employees (1365) are statistically more likely to participate in the OGI. Likewise, those agencies with fewer than the median are less likely to participate (Table 6).

Table 6: Case Summary Table for FTE over/under Median Comparisons	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Participation * FTEovermedian	63	.4	87	.6	150	1.0

31

I also ran a cross-tabulation analysis to determine the number of agencies above and below the median number of FTEs participating and not participating with the OGI. As seen in Table 7, there are eight agencies with fewer than 1365 FTE employees that are not participating in the OGI at all. Likewise, there are 24 agencies with fewer than 1365 that *are* participating.

Table 7: Crosstabulation Results for FTE over/under Median Test

Participation * FTEovermedian Crosstabulation

		FTEovermedian		
		.00	1.00	Total
Participation	0	8	2	10
	1	24	29	53
Total		32	31	63

Finally, the chi-square test represented in Table 8 tests the impact of the number of FTE employees that an agency has on participation. As seen by the chi-square value, the number of FTEs is statistically significant on participation.

Table 8: Chi-Square Results for FTE Significance

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.057	1	.044		
Likelihood Ratio	4.311	1	.038		
N of Valid Cases	63				

Presence on the White House Scorecard and representation in the Working Group were not tested for statistical significance because the vast majority of the agencies on the Scorecard and in the Working Group were Executive Departments, and all of them were required to comply with the OGI. Table 9 shows the breakdown of agencies on the White House Open Government Working Group ("Working Group").

A full list of key definitions of terms in this paper, including the Working Group can be found in Table 1 in the Methodology: Methodological Background section. For the purposes of this study, the Working Group is a group of senior-level officials from various executive agencies whose mission is to promote the tenets of the OGI within their agencies. Convened by the White House, agencies represented on the Working Group are compelled to comply with the OGI. The Working Group is comprised of CFO-Act agencies, as well as representatives of agencies whose missions are significantly tied to the principles advanced by the OGI, such as the National Archives and Records Administration.

One purely observational finding is that the agencies in the first and second (the lower half) budgetary and FTE quartiles of the independent agency designation, as well as participating boards, commissions, or committees may not be meeting the minimum requirements of the OGI, but they appear to be selecting parts of the OGI that are most useful to their agencies and implementing those. For instance, the Vietnam Education Foundation, with a modest budget of $5 million, has not released datasets on data.gov. but they are using some of the common techniques such as an expanding social media presence, which is more intuitive for their mission of outreach and education.

Table 9: Representation on Open Government Working Group			
Category	**Number Represented on Working Group**	**Number Participating**	**Percent of Participants Represented**
Executive Department	15	15	100
Independent Agency	13	49	26.53
Board, Commission, or Committee	0	4	0

Overall, I found that three-quarters of the participating Boards, Commissions, or

Committees are using social media, whereas fewer than half of the agencies overall are

using social media (Figure 3).

Table 10: Compliance Minimums Met or Exceeded Based on Budgetary Quartile Comparison (Measured in Percentages)								
	Quartile 1:		Quartile 2		Quartile 3:		Quartile 4:	
	Meet	Exceed	Meet	Exceed	Meet	Exceed	Meet	Exceed
Executive Department	25	75	0	100	0	100	25	75
Independent Agency	20	10	10	20	40	30	22	44

Concerning levels of participation within agency designations, the data show that

FTE capacity and budgetary capacity largely mirror one another. For the most part, as

the agency quartile for both FTE and budget increased within the agency designation, the

percentage of agencies exceeding OGI compliance minimums also increased. In the

budgetary quartile comparison, there was one exception to this, as one agency in the top

quartile for budget only met the minimums and did not exceed them (Table 10).

Likewise, in the FTE quartile comparison, there was one exception, as agencies in the

second quartile met and exceeded compliance minimums as a higher rate than in the third

quartile. The data indicate that, as capacity increases (as measured by either FTE

capacity or budget, relative to other agencies in the same designation), so does the level

of participation. Table 10 shows this finding for the budgetary quartile comparison, and

Table 11 illustrates the finding when comparing FTE quartiles.   Boards, Commissions,

and Committees were not included in Tables 10 and 11 because so few were participating

(four), making it impossible to draw conclusions based on quartiles.

	Quartile 1		Quartile 2		Quartile 3		Quartile 4	
Table 11: Compliance Minimums Met or Exceeded Based on FTE Quartile Comparison (Measured in Percentages)								
	Meet	Exceed	Meet	Exceed	Meet	Exceed	Meet	Exceed
Executive Department	25	75	25	75	0	100	0	100
Independent Agency	44	0	25	25	22	11	12.5	75

Conclusion and Recommendations

The Open Government Initiative, a major Obama Administration policy, has been adopted by many federal agencies in varying degrees. This paper examined agency participation with transparency portions of the OGI in online environments and found that both agency budget and FTE employee capacity are statistically significant to agency participation. Likewise, the data show that, for the most part, as agencies increase in capacity (as measured by budget and/or FTE employees), the likelihood of compliance or participation increases. Budgetary extremes at both the top and the bottom of the range of federal budgets impacted an agency's decision to participate in the OGI. Additionally, there was a steady decline in participation moving down the agency hierarchy. This decline also holds true for representation on the White House Scorecard and in the Working Group.

I would suggest that LIS professionals and recent graduates looking to move into the world of open government implementation and proactive transparency in federal agencies be cognizant of the impact of capacity and size on an agency's likelihood to participate in such measures. This study is not suggesting that smaller agencies with few FTE employees will not participate in open government efforts, simply that capacity predicts participation. Indeed, the data indicate that smaller agencies are choosing to participate to some extent. Participation by agencies with limited capacity indicates that the small agencies are identifying some benefits to participation, even if they do not fully comply with the letter of the Initiative. Even the smallest agencies can apparently benefit from some of the common implementation techniques, and have access to some of the advances made as a result of the implementation efforts of the White House and many of

the larger agencies. For instance, many small agencies have developed a social media presence in recent years. The terms of service agreements for many social media platforms were negotiated only after the OGI was signed (U.S. General Services Administration, 2011). This implies that smaller agencies may be using only the tools that work best for their missions and capacities, rather than straining already limited resources to fully comply with the OGI.

LIS professionals interested in this area must be mindful of suggested courses of action and be sure that each suggested step makes sense for the mission and character of the agency. If an LIS professional working for a small agency knows that the agency has a number of datasets, then adding them to the centralized repository at data.gov may be a good step to increase transparency. However, if a small agency has collected few datasets but has a mission tied to outreach or education, then perhaps an enhanced social media presence would be a better choice.

I recommend that further studies be conducted to make concrete recommendations to agencies and government entities with limited resources and capacities about how to employ open government techniques and principles. In particular, two further studies would be useful:

1. A study that determines if participation really is only a matter of funding and resources, or if there are other motivating factors driving participation, such as agency mission and culture, including characteristics of agency leaders and organizational structure.

2. A qualitative study that addresses what participation benefits smaller agencies have identified. My study implies that agencies are identifying

some benefits themselves, but I believe that more research would be useful to establish best practices for open government implementation at various agency levels.

These studies would help open government activists understand why some agencies choose to participate and others do not, even if the agencies appear to be peers. They would also help sunshine groups make a practical case for participation to agencies that remain undecided.

The Open Government Initiative establishes compliance minimums and participation guidelines for agencies that are ambitious but rewarding. Implementation thus far has focused on increased transparency of government data and the proactive release of information. LIS professionals trained in data and knowledge management and ever aware of access, outreach, and usability demands, have the potential to make a great impact in this area in the future, continuing to advance transparency and accountability in government.

References

Burton, M. (2010). A Peace Corps for programmers. In D. Lathrop & L. Ruma (Eds.) *Open government: Collaboration, transparency, and participation in practice*, (pp. 1-9). Sebastopol: O'Reilly Media.

Chopra, A. (2010, April 8). Making government accountable for openness (Web log post). Retrieved from: http://www.whitehouse.gov/blog/2010/04/08/making-government-accountable-openness.

Drake, M. (2010). Life, liberty, and the pursuit of transparency. *Information Today*, 27(5), 1; 42-43.

Drapeau, M. (2009). Two way street: Government with the people. In D. Lathrop & L. Ruma (Eds.) *Open government: Collaboration, transparency, and participation in practice*, (pp. 123-129). Sebastopol: O'Reilly Media.

Eaves, D. (2009). After the collapse: Open government and the future of civil service. In D. Lathrop & L. Ruma (Eds.) *Open government: Collaboration, transparency, and participation in practice*, (pp. 139-151). Sebastopol: O'Reilly Media.

Fung, A. & Weil, D. (2010). Open government and open society. In D. Lathrop & L. Ruma (Eds.) *Open government: Collaboration, transparency, and participation in practice*, (pp. 105-113). Sebastopol: O'Reilly Media.

Ginsberg, W. R. (2011, January 28). The Obama Administration's open government initiative: Issues for Congress. Retrieved from: http://www.fas.org/sgp/crs/secrecy/R41361.pdf.

Horvit, M. (2011). Opening up the government. *The IRE Journal*, 34(2), 4.

Hsieh, H.-F., & Shannon, S.E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research, 15*(9), 1277-1288.

Jones, N., French, C., & Willard, E. (2010, March 15). Sunshine and shadows: The clear Obama message for freedom of information meets mixed results. Retrieved from: http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB308/2010FOIAAudit.pdf.

Kundra, V. & Fitzpatrick, M. (2009, June 16). Enhancing online citizen participation through policy (Web log post). Retrieved from: http://www.whitehouse.gov/blog/2009/06/16/.

Leggatt, H. (2011, Feb. 2). Facebook most popular, not most successful, social media tool (Web log post). Retrieved from: http://www.bizreport.com/2011/02/facebook-most-popular-not-most-successful-social-media-tool.html

Lukensmeyer, C., et al (2011). *Assessing public participation in an open government era: A review of federal agency plans*. The IBM Center for The Business of Government.

Mehmetoglu, M. (2004). Quantitative or qualitative? A content analysis of Nordic research in tourism and hospitality. *Scandinavian Journal of Hospitality & Tourism*, 4(3), 176-190. doi: 10.1080/15022250410003889.

Malamud, C. (2009). By the people. In D. Lathrop & L. Ruma (Eds.) *Open government: Collaboration, transparency, and participation in practice*, (pp. 41-47). Sebastopol: O'Reilly Media.

Noveck, B. (2009). *Wiki government: How technology can make government better, democracy stronger, and citizens more powerful*. Washington: Brookings Institution Press.

Noveck, B. (2010, April 8). Open government plans: A tour of the horizon (Web log post). Retrieved from: http://www.whitehouse.gov/blog/2010/04/08/open-government-plans-a-tour-horizon.

Obama, B. (2009, January 21). Transparency and open government. Retrieved from: http://www.whitehouse.gov/the_press_office/Transparency_and_Open_Government/.

OMB Watch Staff. (2010, February). Federal agency open government review criteria points. Retrieved from: http://www.ombwatch.org/files/info/criteria.pdf.

OMB Watch Staff. (2010, February 23). Leaders and laggards in agency open government webpages. Retrieved from: http://www.ombwatch.org/node/10785/.

OMB Wiki. (n. d.). Retrieved October 30, 2011 from the White House Open Government Wiki: http://expertnet.wikispaces.com/Getting+Started.

O'Reilly, T. (2010). Government as a platform. In D. Lathrop & L. Ruma (Eds.) *Open government: Collaboration, transparency, and participation in practice*, (pp. 11-39). Sebastopol: O'Reilly Media.

Orszag, P. R. (2009, December 8). Open government directive. Retrieved from:

http://www.whitehouse.gov/sites/default/files/omb/assets/memoranda_2010/m10-06.pdf.

Reich, B. (2009). Citizens' view of open government. In D. Lathrop & L. Ruma (Eds.) *Open government: Collaboration, transparency, and participation in practice*, (pp. 131-138). Sebastopol: O'Reilly Media.

Riffe, D., Lacy, S., & Fico, F. (2005). *Analyzing media messages: Using quantitative content analysis in research* (2nd ed.). Mahwah: Lawrence Erlbaum Associates.

Rosengren, K. E. (1981). Advances in Scandinavia content analysis: An introduction. In K. E. Rosengren (Ed.), *Advances in content analysis* (pp. 9-19). Beverly Hills, CA: Sage.

Schuler, D. (2010). Online deliberation and civic intelligence. In D. Lathrop & L. Ruma (Eds.) *Open government: Collaboration, transparency, and participation in practice*, (pp. 91-104). Sebastopol: O'Reilly Media.

Sifry, M. (2010). "You can be the eyes and ears": Barack Obama and the wisdom of the crowds. In D. Lathrop & L. Ruma (Eds.) *Open government: Collaboration, transparency, and participation in practice*, (pp. 115-122). Sebastopol: O'Reilly Media.

Staff Writers. (2009). Government records: A one-stop shop for government data. *Information Management*, Sept/Oct 2009, 8.

Steirnstein, A. (2011). Tracing transparency. *Government Executive*, 43(1), 24-29.

Sunstein, C. R. (2010, April 7). Social media, web-based interactive technologies, and the Paperwork Reduction Act. Retrieved from: http://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/SocialMediaGuidance_04072010.pdf.

Tapscott, D. (2010). Foreword. In D. Lathrop & L. Ruma (Eds.) *Open government: Collaboration, transparency, and participation in practice*, (pp. xv-xvii). Sebastopol: O'Reilly Media.

U.S. General Services Administration Staff (website). (2011). 8.1 Terms of service agreements: GSA paves the way for government use of new media. Retrieved f rom: http://www.gsa.gov/portal/content/104320.

White House Staff. (2009). Open government milestones. Retrieved from: http://www.whitehouse.gov/open/about/milestones.

White House Staff. (2010). Open government dashboard "leading practices" for agency

open government plans. Retrieved from:
http://www.whitehouse.gov/open/documents/leading-practices-open-govt-plans.

White House Staff. (2010). Open government plan evaluation criteria. Retrieved from:
http://www.whitehouse.gov/open/documents/evaluation.

White House Staff. (n. d.). Around the government (open government scorecard).
Retrieved from: http://www.whitehouse.gov/open/around.

White House Staff. (Unknown). Open government working group. Retrieved from:
http://www.whitehouse.gov/open/documents/open-government-
directive/working-group.

Wilshusen, G.C. (2010). Challenges in federal agencies' use of Web 2.0 technologies.
Government Accountability Office. Retrieved from:
http://www.gao.gov/assets/130/125110.pdf.

Zhang, Y. & Wildemuth, B. M. (2009). Qualitative analysis of content. In B. Wildemuth
(Ed.), *Applications of social research methods to questions in Information and
Library Science* (pp.308-319). Westport, CT: Libraries Unlimited.