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Promoting transparency and accountability through ICTs, social media, and collaborative e-government

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Abstract

Purpose – The purpose of this paper is to examine the ways in which governments build social media and information and communication technologies (ICTs) into e-government transparency initiatives, to promote collaboration with members of the public and the ways in members of the public are able to employ the same social media to monitor government activities.

Design/methodology/approach – This study used an iterative strategy that involved conducting a literature review, content analysis, and web site analysis, offering multiple perspectives on government transparency efforts, the role of ICTs and social media in these efforts, and the ability of e-government initiatives to foster collaborative transparency through embedded ICTs and social media.

Findings – The paper identifies key initiatives, potential impacts, and future challenges for collaborative e-government as a means of transparency.

Originality/value – The paper is one of the first to examine the interrelationships between ICTs, social media, and collaborative e-government to facilitate transparency.

Keywords E-government, Information technology, Communication technologies, Citizen participation, Crowdsourcing, Transparency, Accountability, Social media, Collaboration

Paper type Research paper

Introduction

Though a number of nations have only begun to focus on openness issues in recent decades, transparency and the right to access government information are now internationally regarded as essential to many functions of democracy: participation, trust in government, prevention of corruption, informed decision making, the accuracy of government information, and provision of information to the public, companies, and journalists, among other essential functions in society (Cullier and Piotrowski, 2009; Mulgan, 2007; Quinn, 2003; Reylea, 2009; Shuler *et al.*, 2010). More than 30 countries have even established a national-level, centralized anti-corruption agency (Meagher, 2005). Ultimately, countries that embrace transparency tend to produce more information than other governments and are more likely to share this information with members of the public (Lord, 2006).

Many nations have embraced information and communication technologies (ICTs) as a means to increase government transparency and to reduce corruption. The latter goal has received a considerable amount of emphasis in newer applications of ICTs by certain governments. The use of social media is a central part of some of these more



recent transparency and anti-corruption initiatives. By reviewing transparency initiatives and issues related to the use of ICTs, social media, and e-government, this paper explores the ways in which these technologies facilitate collaboration between governments and members of the public in promoting transparency.

This study used an iterative strategy that involved conducting a literature review, content analysis, and web site analysis:

- (1) *Literature review.* The literature review served to inform the authors as to:
 - studies conducted to assess ICT use to create transparent government programs, initiatives, and culture; and
 - evaluative efforts to ascertain transparency due to ICT use, particularly as implemented through e-government efforts.The review identified key projects, methods of assessment, and barriers and success factors.
- (2) *Content analysis.* Based on the findings from the literature review, the authors identified and analyzed a range of documentation regarding transparency efforts. These documents included project reports, legislation, government directives, agency/government documentation, and other available material. This documentation formed the basis for further understanding of developing transparency metrics, policies, and directives aimed to create a culture of transparency, as well as successes and challenges regarding the implementation of transparency efforts via ICTs.
- (3) *Web site review.* The literature and content analysis efforts informed a review of agency/government web sites intended to create transparent government – including information dissemination; the provision of government budgeting and allocation information; government bidding and contract award information; and the ability of members of the public to track their applications and/or other government interactions via a range of applications and tools.

Together, these methods offered multiple perspectives on government transparency efforts, the role of ICTs and social media in these efforts, and the ability of e-government initiatives to foster collaborative transparency through embedded ICTs and social media.

The next section of this paper reviews the literature related to the range of uses ICTs to promote transparency and fight corruption. Then, the paper reviews the variety of approaches to using social media for transparency, openness, and anti-corruption that were identified through the literature review and content analysis. Building upon the web site analysis, the paper then offers a range of themes of different governments in the use of social media in transparency, openness, and anti-corruption efforts. Finally, the paper concludes with an exploration of the potential roles of collaborative e-government to help improve government transparency and facilitate anti-corruption efforts.

Background: transparency, corruption, and ICTs

Transparency is an essential element of the primary approaches that governments have employed to promote openness and reduce corruption. A lack of transparency can

(Anderson, 2009; Cullier and Piotrowski, 2009; Dawes, 2010; Kolstad and Wiig, 2009; Kolstad *et al.*, 2009; Stiglitz, 2002a, b):

- make corruption less risky and more attractive;
- prevent the use of public incentives to make public officials act responsibly and in the public interest;
- create informational advantages to privileged groups;
- instill and perpetuate control over resources;
- incentivize opportunism and undermine cooperation;
- limit the ability to select for honesty and efficiency in public sector positions and contract partners; and
- hinder social trust, and therefore development.

Transparency can serve to limit or prevent many of these opportunities for corrupt behavior.

Corruption has long been seen as a hindrance to socio-economic development. This is particularly true in developing, resource rich countries, where the political elite often has control of resources and resource rents, as well as control over patronage and the distribution of resources – a situation known as the “resource curse” (Kolstad and Wiig, 2009; Kolstad *et al.*, 2009; Mehlum *et al.*, 2006; Robinson *et al.*, 2006). The resource curse is indicative of a larger issue – the cultural and political values of the nation influence the anti-corruption measures implemented. The United Nations (2008) has recognized the significance of government accountability and transparency through its Convention against Corruption. Among its many articles, the Convention outlines key areas in which to promote transparency and openness through policy and legislation, the development of anti-corruption bodies, public sector guidelines in a range of areas (e.g. personnel, hiring, elections, funding), codes of conduct for public officials, and procurement.

The internet and related ICTs have greatly reduced the cost of collecting, distributing, and accessing government information (Roberts, 2006). As a result of these capacities, recent years have seen trends toward using e-government for greater access to information and for promotion of transparency, accountability, and anti-corruption goals, though not all potential avenues for are utilized by government agencies (Anderson, 2009; Cullier and Piotrowski, 2009; Fuchs, 2006). ICTs offer countries a new approach to creating transparency and promoting anti-corruption. These technologies also offer a means of integrating citizen engagement and participation directly into e-government initiatives (Axelsson *et al.*, 2010; Hughes, 2011). Many nations with transparency laws have directly tied the implementation of these laws to the implementation of ICT-based initiatives, often directly through e-government (Relly and Sabharwal, 2009). The anti-corruption aspects of transparency are high priorities for an increasing number of nations.

ICTs can reduce corruption by promoting good governance, strengthening reform-oriented initiatives, reducing potential for corrupt behaviors, enhancing relationships between government employees and members of the public, allowing for citizen tracking of activities, and by monitoring and controlling behaviors of government employees (Shim and Eom, 2008). To successfully reduce corruption, however, ICT-enabled initiatives generally must move from increasing information access to ensuring rules are transparent and applied to building abilities to track

the decisions and actions of government employees (Bhatnagar, 2003). Additionally, at the local level, perceptions of transparency and openness among citizens are inextricably tied to traditional attitudes toward the meaning of good governance (Waheduzzaman, 2010).

Some governments envision the use of ICTs as a means to promote efficiency and transparency at the same time (von Waldenberg, 2004). ICTs in general show promise as an effective means of reducing corruption, but social attitudes can decrease the effectiveness of ICTs as an anti-corruption tool (Shim and Eom, 2008). Case studies and statistical analyses indicate that ICTs hold a great deal of potential for – and are already demonstrating benefits in – anti-corruption, particularly by enhancing the effectiveness of internal and managerial control over corrupt behaviors and by promoting government accountability and transparency (Shim and Eom, 2008). By analyzing changes between 1996 and 2006 corruption data through ICT-enabled e-government initiatives, one study concluded that “implementing e-government significantly reduces corruption, even after controlling for any propensity for corrupt governments to be more or less aggressive in adopting e-government initiatives” (Anderson, 2009, p. 210).

Nations across the Americas, Asia, and Europe have all claimed successes in reducing corruption through ICTs (Bhatnagar, 2003; Shim and Eom, 2008). Taxes and government contracts are areas where ICTs demonstrate a clear and successful solution to corruption problems in many nations, providing efficient and convenient means for citizen oversight of government activities. The effectiveness of anti-corruption efforts, however, tend to share certain parameters, as they are: shaped by the cultural milieu of a nation; limited by levels of antagonism to the government; generally viewed as problems with regulatory and technical solutions despite the cultural issues; and usually focused only on the bribe-takers, not the bribe-giver (Brown and Cloke, 2004). The next section the array of social media approaches and technologies that governments are employing to promote transparency, openness, and anti-corruption.

Current types and government uses of social media in transparency

Much e-government activity is now focused on social media (Bertot *et al.*, 2010a, b; Chang and Kannan, 2008; Drapeau and Wells, 2009; Noveck, 2008; Osimo, 2008; Snyder, 2009). US federal agencies have been using blogs, wikis, and social networking sites, among other social media, to create records, disseminate information, communicate with the public and between agencies for several years (Barr, 2008; Hanson, 2008; Snyder, 2009; Wyld, 2008). Even before being elected, the Obama administration made a priority of the use of social media technologies, and the new Federal Chief Information Officer is strongly encouraging the expansion of these activities (Jaeger *et al.*, 2010; Lipowicz, 2009; Thibodeau, 2009). It has also made collaboration a key part of its transparency strategy (McDermott, 2010).

The widespread adoption of many of these different social media approaches to transparency was emphasized in the content of a White House (2009) report entitled *Open Government: A Progress Report to the America People*, which listed numerous uses of social media approaches to promote transparency across many different agencies. Perhaps more significantly, it promised the expansion of these efforts through many new transparency initiatives employing social media, including at least one new program from each cabinet-level agency.

Social media is media that is designed for and centered around social interaction. It is commonly associated with a conglomeration of web-based technologies and services such as blogs, wikis, media-sharing services, collaborative editing tools, and social networking services that enable and empower users to communicate, interact, edit, and share content in a social environment (Porter, 2008; Tepper, 2003). Unlike traditional media, social media relies on user-generated content, which refers to any content that has been created by end-users or the general public as opposed to traditional or professional sources. Traditional media is designed to be a one-way interaction with the public where as social media is designed for a many-to-many interaction (Porter, 2008). This many-to-many interaction that allows users to interact with one another fosters a great level of participation and information sharing. However, engagement in social media does not necessarily translate into engagement in government by members of the public. A recent study found that many more people are willing to join Facebook groups about political issues than are willing to sign e-petitions on the same issues (Panagiotopoulos *et al.*, 2011).

Prominent types of social media and their applications in terms of transparency are examined below. These types of social media are presented in their general adoption by government agencies, demonstrating the rapid evolution of these tools and their capacities for transparency.

Blogs

Blogs are web sites in which content is dispatched in a structured format via a series of postings usually focused on a particular subject. Blogs have been widely used by many government agencies to promote open communication – or at least the appearance of open communication – with members of the public. In the USA, most government agencies have blogs that range from release platforms for announcements to more authentic discussion forums to heavily monitored discussions to shape the tone of the available information. Most government blogs favor the first two approaches, tending to promote openness by serving as a means to answer questions and address concerns posted by members of the public. Blogs, for example, have played a prominent role in addressing concerns related to H1N1 flu (e.g. www.flu.gov).

The effectiveness of blogs is primarily in the dissemination of information from the government to the citizens; governments can become wary of including the unfiltered input of citizens to the blogs. For example, the Transportation Safety Administration (TSA) blog demonstrates that members of the public will try to use blogs as a collaborative transparency tool even if the government agency does not want them to. The TSA has heavily edited the posts on its blog from members of the public critical of TSA policies and activities; as a result, the TSA blog has not promoted transparency of these policies and their applications, but instead resulted in attempts to manage the image of the TSA on the blog.

Members of the public can also use non-governmental blogs to promote openness when the government is resistant to transparency. In the 2007 campaign for Prime Minister of Australia, the Australian media – much of which is owned by conservative media baron Rupert Murdoch – openly supported the Conservative party and its Prime Minister, going so far as to selectively report the results of their own polls, particularly those of the major papers owned by Murdoch, with the Conservative government echoing these tailored results (Bruns, 2008). As a result, blogs and other

online social networks played a large part by providing contrasting views to balance the media and government coverage, with the transparency of a national election at stake.

Wikis

Wikis are highly collaborative, community-based web sites that easily allow users to add new or edit existing content dynamically. For example, Wikipedia is a wiki that harnesses its users to help it accomplish the task of creating a comprehensive encyclopedia. A prime example of using wikis to promote openness and reduce corruption – albeit in extremely controversial ways – can be seen in the popular web site, Wikileaks (www.wikileaks.org). Wikileaks is a non-government sponsored wiki that is supported by a community of hackers and activists with the goal of providing a safe online place for whistleblowers to anonymously disclose and release sensitive information related to any government in the world, though the release of troves of US government documents in 2010 and 2011 has brought a great deal of negative attention and pressure to the site. Wikis, like blogs, include input from members of the public, which may increase government wariness of opening them to the public to contribute to.

Social networking and media-sharing

Social networking services and sites allow users to build online communities where they can connect and interact with other users who have similar interests. The key components of a social network service are the ability for a user to create a profile about themselves, the ability for users to create a list of other users who have a shared connection or similar interests, and the ability to view the connections made by other users in the network (Boyd and Ellison, 2007). Examples of popular social networking services include: Facebook, Bebo, Orkut, LinkedIn, and MySpace.

Related to social networking, media-sharing services (video, photo/image, audio) are web-based platforms that allow users the ability to view, discuss, upload, distribute, and store digital content in a social environment. The power of media-sharing services is that they provide users or communities an easy platform to disseminate and discuss information using rich multimedia content. Without media-sharing services, the ability for user-generated content to propagate and penetrate the public sphere would be seriously hindered. Therefore, citizen journalism or citizen reporting is heavily tied to user generated content and media-sharing services. Examples of various media-sharing services include: photo/image (Flickr, Photobucket, Picasa, SmugMug) and video (YouTube, Vimeo, Veoh).

Many governments use social networking and media-sharing to disseminate targeted information for members of different social groups. For example, the US Department of Veterans' Affairs (VA), along with its traditional e-government presence, now also has multiple social networking and media-sharing presences: a Facebook page, a YouTube channel, and an island in Second Life (www.oefoif.va.gov/) (Miller, 2009). These uses of social media have been designed especially to engage younger returning service personnel, particularly those returning from the wars in Iraq and Afghanistan. In addition, to accommodate mobile devices such as iPhones, the VA has offers a re-formatted site (m.va.gov/) for greater mobile accessibility. Many different governments and government agencies are now taking similar approaches to incorporation of social networking approaches like Facebook and Second Life into their information and communication activities to promote access to and usage of government information (Godwin, 2008; Laris, 2009).

Microblogging

A microblog is a web-based platform that allows users to broadcast small messages or updates to a select group or community, usually combining features and aspects of both social networking and blogging technologies. Popular examples of microblogging applications are Twitter, Jaiku, Yammer, identi.ca, and Tumblr. These applications have considerable potential as a tool for sharing and disseminating information for which members of the public and government are now beginning to explore (Drapeau and Wells, 2009; Golbeck *et al.*, 2010; Wigand, 2010). However, on negative side, many government uses of these services have become tools of self-promotion rather than tools of openness (Golbeck *et al.*, 2010; Wigand, 2010).

In contrast, in the aftermath of the Iranian election of 2009, for instance, some of the significant potentials of microblogs became clear. Even though a relatively small number of people in Iran used Twitter to post small bits of information about protests in the streets of Tehran (whether through text, photographs, or short videos), Twitter still became one of the primary means through which the world outside of Iran learned about those protests. In this case, the apparent technical limitations of the tool – only 140 characters per post and the consequent focus of individual “tweets” on minutia – and the fact that Twitter relies on decentralized distribution of messages combined to make it an ideal way for protesters to side-step Iranian efforts at censorship and make information about events in their nation available around the globe (Cohen, 2009). In democracies, these same capabilities offer many opportunities for governments to send information to and get feedback from members of the public.

Mashups

A mashup is a resource or service that combines the data or functionality of two or more other sources to create a new application, resource, or service (Brito, 2008; Robinson *et al.*, 2009). A popular example of a popular collaborative mashup is the Chicago Crime Map which merges the Google Map application with Chicago crime rate data. Since that time, Chicago Crime Map evolved into EveryBlock (www.everyblock.com/) and provides a range of local data in a number of major US cities.

For mashups to successfully occur users must be able to easily integrate data and application functions. Data should be in an open license free, machine-readable formats and applications should be made accessible via an open application programming interface (API) to ensure potential re-use. Since open data is a necessary step towards mashups and other types of reuse, many governments have begun to release their data in open, license free, machine-readable formats with the hopes of stimulating the development of citizen generated mashups among other various types of potential uses. In the USA, the Obama administration has been a major proponent of the idea of mashups and open government data. Under the Obama administration the US federal government has released numerous amounts of government data in open machine-readable formats under the site (www.data.gov). It is far too early to tell if this highly ambitious attempt at collaborative e-government will be successful in promoting government transparency, particularly as the process of approving information for uploading into data.gov requires the involvement of many different government agencies, greatly limiting the amount and currency of the information that is added.

Themes of social media and collaborative transparency

Based on the different approaches to using social media in transparency, openness, and anti-corruption efforts, this section of the paper explores the themes of different governments in the use of social media for transparency. In many cases, the creation of these transparency and anti-corruption sites have created new opportunities for transparency and anti-corruption functions that did not previously exist or have moved previously extant functions from a face-to-face interaction to an online interaction. As a result, in these cases, to engage in these functions, members of the public must use the sites. In contrast, for sites that are focused on disseminating information to provide transparency, levels of usage will be much harder to determine unless governments release usage data.

The underlying concept of social media – actively including the user as a collaborator in the process – is reflected in the ethos of many e-government transparency efforts, even when the social media approaches are not central to the particular initiative. Numerous collaborative transparency efforts through e-government rely on members of the public collectively monitoring government officials to prevent corruption. Consider the following examples that demonstrate different, yet related, themes for the use of social media to promote transparency and prevent corruption:

- Chile and the Philippines both have developed e-procurement systems that allow members of the public to actively monitor government bidding and contracting processes to prevent corruption in the awarding of contracts and grants (Anderson, 2009; Heeks, 2005; Shim and Eom, 2008).
- The Bhoomi electronic land record system in Karnataka, India, allows for citizen monitoring of the process of transferring land titles, greatly increasing the speed at which the records are accessed and updated, while simultaneously removing opportunities for local officials to accept bribes as had previously been rampant (World Bank, 2004).
- The Online Procedures Enhancement for Civil Applications (OPEN) portal for the Seoul Municipal Government in Korea was designed to reduce the number of places that government officials and members of the public interacted directly, while allowing members of the public to monitor the progress of their applications and what government officials are handling them (Cho and Choi, 2004; Kim *et al.*, 2009).
- In Pakistan, the entire tax system and department was restructured with the specific purpose of reducing direct contact between members of the public and tax officials to reduce opportunities for requests for bribes (Anderson, 2009).
- Several US government web sites – including the US Customs and Immigration Service (USCIS) and the US Department of State – allow for the tracking of transactions by members of the public so that it is possible to track the progress of one's requests, applications, and/or other government services/resources. These features enable a wide range of members of the public to check on the progress of their government services, ensure efficiency, and provide reasonable timeframes for processing of various documents, services, and resources.

All of these initiatives rely on the active and collective efforts of members of the public to monitor transparency and corruption in the government through electronic means – crowd-sourcing in the purest sense. Building on the old open source adage “given enough eyeballs, all bugs are shallow”, Brito (2008) asserts that members of the public using social

media could be harnessed to accomplish a similar endeavor towards corruption: “given enough eyeballs, corruption and waste are similarly shallow problems” (n.p.).

From these key examples – in conjunction with the literature and other sites discussed above – several themes across different governments use of various kinds of social media to promote transparency and fight corruption can be identified:

- expose government processes, including bidding, contracting, and processing of forms;
- public monitoring of activities of government officials and their activities;
- speed processing of government forms;
- limit direct contact between members of the public and government officials;
- establish channels for information dissemination from government agencies to members of the public, particularly through media that members of the public prefer using;
- provide outlets for public suggestions for improving government openness; and
- allow members of the public to track the progress of their own interactions with government.

The range of these themes will undoubtedly expand as the use of social media by governments continues to increase. The final section of the paper explores the potential future roles of collaborative e-government to improve government transparency and facilitate anti-corruption efforts.

Conclusion: roles of crowdsourcing transparency

Social media has had a transformational effect on the ways in which people interact with one another and with governments, as well as the ways in which governments can promote transparency and reduce corruption. Overall, government use of social media offers three major opportunities for ICTs to revolution government:

- (1) promoting democratic participation and engagement;
- (2) facilitating co-production of materials between governments and members of the public; and
- (3) crowdsourcing solutions and innovations (Bertot *et al.*, 2010c).

As detailed above, the use of social media in openness and anti-corruption efforts can potentially encompass all three of these elements.

Traditionally, new ICTs have favored those already in power. By improving lines of communication, ICTs – like the telegraph and then telephones – were able to provide a tool of increased effectiveness in colonial administration and control, enhancing “the power of the rulers over the ruled” (Hanson, 2008, p. 19). The social media applications of the internet, on the other hand, have the potential to enhance existing approaches to transparency and foster new cultures of openness both by giving governments new tools promote transparency and reduce corruption and by empowering members of the public to collectively take part in monitoring the activities of their governments.

Based on the current uses of social media to promote transparency and fight corruption, there are several key roles that social media can play as means

of collaborative e-government to help improve government transparency and increase anti-corruption:

- Increasing and improving access to government information to the public by offering information via the internet through multiple dynamic interactive channels.
- Interacting with members of the public and addressing specific citizen interests and concerns.
- Reaching populations who might not otherwise encounter the government information.
- Serving as information and communication outlets for whistleblowers to release sensitive information.
- Supplementing or replacing corrupt or deficient information with citizen journalism to better inform members of the public of conditions.
- Crowdsourcing the monitoring of government corruption by harnessing a group of people or a community to accomplish a specific task or activity.

Other roles for social media in government transparency will likely develop as the use of social media by governments continues to increase, the expectations for transparency by the governed increases, and the types of social media applications available to members of the public simultaneously increases. These uses will also be shaped by the laws and policies that are ultimately applied to the use of social media by government agencies (Bertot *et al.*, 2012).

The role of public/government collaboration to promote transparency and open government will continue to evolve, and the contribution of ICTs and e-government initiatives to fostering openness will require much more extensive exploration. With the generally high number of difficulties encountered in e-government initiatives, careful consideration of tangible public benefits in e-government efforts is a key aspect of research (Flak *et al.*, 2009), and the intersection of e-government, ICTs, social media, and transparency is no exception.

There is a particular need to more fully develop openness and transparency assessment techniques to more empirically test the relationship between ICTs, social media, e-government initiatives, and transparent and open government. “Although these initiatives are young, they already exhibit daunting complexity” (Dawes, 2010, p. 377). There will also be a pressing need to better understand the ways in which these initiatives can be made inclusive of users with limited access to the internet and accessible to users with disabilities (Jaeger and Bertot, 2010). However, initial indications are that ICTs and social media, particularly when coupled with planned e-government initiatives, can provide a substantial foundation for the development of transparent and open government.

References

- Anderson, T.B. (2009), “E-government as an anti-corruption strategy”, *Information Economics and Policy*, Vol. 21, pp. 201-10.
- Axelsson, K., Melin, U. and Lindgren, I. (2010), “Exploring the importance of citizen participation and involvement in e-government projects: practice, incentives, and organization”, *Transforming Government: People, Process and Policy*, Vol. 4, pp. 299-321.

- Barr, S. (2008), "Agencies share information by taking a page from Wikipedia", *Washington Post*, available at: www.washingtonpost.com/wp-dyn/content/article/2008/01/27/AR2008012701655.html?sub=AR (accessed 28 January).
- Bertot, J.C., Jaeger, P.T. and Grimes, J.M. (2010a), "Crowd-sourcing transparency: ICTs, social media, and government transparency initiatives", *Proceedings of the 11th Annual International Digital Government Research Conference on Public Administration online: Challenges and Opportunities, 2010, dg.o. Digital Government Society of North America, Puebla, Mexico, 17-20 May*, pp. 51-8.
- Bertot, J.C., Jaeger, P.T. and Grimes, J.M. (2010b), "Using ICTs to create a culture of transparency: e-government and social media as openness and anti-corruption tools for societies", *Government Information Quarterly*, Vol. 27, pp. 264-71.
- Bertot, J.C., Jaeger, P.T. and Hansen, D. (2012), "The impact of polices on government social media usage: issues, challenges, and recommendations", *Government Information Quarterly*, Vol. 29 No. 1, pp. 30-40.
- Bertot, J.C., Jaeger, P.T., Munson, S. and Glaisyer, T. (2010c), "Engaging the public in open government: the policy and government application of social media technology for government transparency", *IEEE Computer*, Vol. 43 No. 11, pp. 53-9.
- Bhatnagar, S. (2003), "E-government and access to information", *Global Corruption Report 2003*, Transparency International, Washington, DC.
- Boyd, D.M. and Ellison, N.B. (2007), "Social network sites: definition, history, and scholarship", *Journal of Computer-Mediated Communication*, Vol. 13 No. 1, pp. 210-30.
- Brito, J. (2008), "Hack, mash, & peer: Crowdsourcing government transparency", *Columbia Science & Technology Law Review*, Vol. 9, pp. 119-57.
- Brown, E. and Cloke, J. (2004), "Neoliberal reform, governance, and corruption in the South: assessing the international anti-corruption crusade", *Antipode*, Vol. 36 No. 2, pp. 272-94.
- Bruns, A. (2008), "Life beyond the public sphere: towards a networked model for political deliberation", *Information Polity*, Vol. 13, pp. 65-9.
- Chang, A. and Kannan, P.K. (2008), *Leveraging Web 2.0 in Government*, IBM Center for the Business of Government, Washington, DC.
- Cho, Y.H. and Choi, B.D. (2004), "E-government to combat corruption: The case of Seoul Metropolitan Government", *International Journal of Public Administration*, Vol. 27, pp. 719-35.
- Cohen, N. (2009), "Twitter on the barricades: six lessons learned", *New York Times (Week in Review)*, 12 June, p. 4.
- Cullier, D. and Piotrowski, S.J. (2009), "Internet information-seeking and its relation to support for access to government records", *Government Information Quarterly*, Vol. 26, pp. 441-9.
- Dawes, S.S. (2010), "Stewardship and usefulness: policy principles for information-based transparency", *Government Information Quarterly*, Vol. 27, pp. 377-83.
- Drapeau, M. and Wells, L. (2009), *Social Software and National Security: An Initial Net Assessment*, Center for Technology and National Security Policy, National Defense University, available at: www.ndu.edu/ctnsp/Def_Tech/DTP61
- Flak, L.S., Dertz, W., Jansen, A., Krogstie, J., Spjelkavik, I. and Ølnes, S. (2009), "What is the value of eGovernment – and how can we actually realize it?", *Transforming Government: People, Process and Policy*, Vol. 3, pp. 220-6.
- Fuchs, M. (2006), "Judging secrets: the role courts should play in preventing unnecessary secrecy", *Administrative Law Review*, Vol. 58, pp. 131-76.

- Godwin, B. (2008), "Matrix of Web 2.0 technology and government", USA.gov, available at: www.usa.gov/webcontent/technology/other_tech.shtml
- Golbeck, J., Grimes, J.M. and Rogers, A. (2010), "Twitter use by the US Congress", *Journal of the American Society for Information Science and Technology*, Vol. 61, pp. 1612-21.
- Hanson, E.C. (2008), *The Information Revolution and World Politics*, Rowman & Littlefield, Lanham, MD.
- Heeks, R. (2005), "E-government as a carrier of context", *Journal of Public Policy*, Vol. 25, pp. 51-74.
- Hughes, M. (2011), "The challenges of informed citizen participation in change", *Transforming Government: People, Process and Policy*, Vol. 5, pp. 68-80.
- Jaeger, P.T. and Bertot, J.C. (2010), "Transparency and technological change: ensuring equal and sustained public access to government information", *Government Information Quarterly*, Vol. 27, pp. 371-6.
- Jaeger, P.T., Paquette, S. and Simmons, S.N. (2010), "Information policy in national political campaigns: a comparison of the 2008 campaigns for President of the United States and Prime Minister of Canada", *Journal of Information Technology & Politics*, Vol. 7, pp. 1-16.
- Kim, S., Kim, H.J. and Lee, H. (2009), "An institutional analysis of an e-government system for anti-corruption: the case of OPEN", *Government Information Quarterly*, Vol. 26, pp. 42-50.
- Kolstad, I. and Wiig, A. (2009), "Is transparency the key to reducing corruption in resource-rich countries?", *World Development*, Vol. 37, pp. 521-32.
- Kolstad, I., Wiig, A. and Williams, A. (2009), "Mission improbable: does petroleum-related aid address the resource curse?", *Energy Policy*, Vol. 37, pp. 954-65.
- Laris, M. (2009), "O brave new world that has such avatars in it", *Washington Post*, available at: www.washingtonpost.com (accessed 4 January).
- Lipowicz, A. (2009), "4 reasons why e-records are still a mess", *Federal Computer Week*, available at: www.fcw.com/Articles/2009/03/09/policy-email-records.aspx (accessed 6 March).
- Lord, K.M. (2006), *The Perils and Promise of Global Transparency*, University Press of New York, Albany, NY.
- McDermott, P. (2010), "Building open government", *Government Information Quarterly*, Vol. 27, pp. 401-13.
- Meagher, P. (2005), "Anti-corruption agencies: Rhetoric versus reality", *Journal of Policy Reform*, Vol. 8, pp. 69-103.
- Mehlum, H., Moene, K. and Torvik, R. (2006), "Institutions and the resource curse", *The Economic Journal*, Vol. 116, pp. 1-20.
- Miller, E. (2009), "The Veterans Administration Goes Web 2.0", The Sunlight Foundation Blog, available at: <http://blog.sunlightfoundation.com/taxonomy/term/Facebook/>
- Mulgan, R. (2007), "Truth in government and the politicization of public service advice", *Public Administration*, Vol. 85, pp. 569-86.
- Noveck, B.E. (2008), "Wiki-government", *Democracy: A Journal of Ideas*, Vol. 7, pp. 31-43.
- Osimo, D. (2008), *Web 2.0 in Government: Why and How?*, Institute for Prospective Technological Studies, Washington, DC.
- Panagiotopoulos, P., Sams, S., Elliman, T. and Fitzgerald, G. (2011), "Do social networking groups support online petitions?", *Transforming Government: People, Process and Policy*, Vol. 5, pp. 20-31.
- Porter, J. (2008), *Designing for the Social Web*, New Riders Press, Thousand Oaks, CA.

- Quinn, A.C. (2003), "Keeping the citizenry informed: early congressional printing and 21st century information policy", *Government Information Quarterly*, Vol. 20, pp. 281-93.
- Relly, J.E. and Sabharwal, M. (2009), "Perceptions of transparency of government policymaking: a cross-national study", *Government Information Quarterly*, Vol. 26, pp. 148-57.
- Reylea, H.C. (2009), "Federal freedom of information policy: highlights of recent developments", *Government Information Quarterly*, Vol. 26, pp. 314-20.
- Roberts, A. (2006), *Blacked Out: Government Secrecy in the Information Age*, Cambridge University Press, New York, NY.
- Robinson, D., Yu, H., Zeller, W.P. and Felten, E.W. (2009), "Government data and the invisible hand", *Yale Journal of Law & Technology*, Vol. 11, pp. 160-75.
- Robinson, J.A., Torvik, R. and Verdier, T. (2006), "Political foundations of the resource curse", *Journal of Development Economics*, Vol. 79, pp. 447-68.
- Shim, D.C. and Eom, T.H. (2008), "E-government and anti-corruption: empirical analysis of international data", *International Journal of Public Administration*, Vol. 31, pp. 298-316.
- Shuler, J.A., Jaeger, P.T. and Bertot, J.C. (2010), "Implications of harmonizing e-government principles and the Federal Depository Library Program (FDLP)", *Government Information Quarterly*, Vol. 27, pp. 9-16.
- Snyder, C. (2009), "Government agencies make friends with new media", *Wired*, 25 March, available at: <http://blog.wired.com/business/2009/03/government-agen.html>
- Stiglitz, J.E. (2002a), "Information and the change in the paradigm in economics", *American Economic Review*, Vol. 92, pp. 460-501.
- Stiglitz, J.E. (2002b), "On liberty, the right to know and public discourse: the role of transparency in public life", in Gibney, M. (Ed.), *Globalizing Rights*, Oxford University Press, Oxford, pp. 115-56.
- Tepper, M. (2003), "The rise of social software", *NetWorker*, Vol. 7 No. 3, pp. 18-23.
- Thibodeau, P. (2009), "New federal CIO Vivek Kundra wants a Web 2.0 government", *ComputerWorld*, available at: www.computerworld.com/action/article.do?command=viewArticleBasic&articleId=9129043 (accessed 5 March).
- von Waldenberg, W. (2004), "Electronic government and development", *European Journal of Development Research*, Vol. 16, pp. 417-32.
- United Nations (2008), *United Nations Convention Against Corruption*, United Nations, New York, NY.
- Waheduzzaman (2010), "Value of people's participation for good governance in developing countries", *Transforming Government: People, Process and Policy*, Vol. 4 No. 4, pp. 386-402.
- White House (2009), *Open Government: A Progress Report to the America People*, White House, Washington, DC.
- Wigand, F.D. (2010), "Twitter takes wing in government: diffusion, roles, and management", *Proceedings of the 11th Annual International Digital Government Research Conference on Public Administration Online: Challenges and Opportunities*, dg.o. Digital Government Society of North America, Puebla, Mexico, 17-20 May, pp. 66-71.
- World Bank (2004), *Making Services Work for the Poor: World Development Report*, World Bank, Washington, DC.
- Wyld, D. (2008), *The Blogging Revolution: Government in the Age of Web 2.0*, IBM Center for the Business of Government, Washington, DC.

Further reading

- Kauffman, T. (2007), "Feds dive into the blogosphere", *Federal Times*, available at: www.federaltimes.com/index.php?S=3097413 (accessed 9 October).
- Sternstein, A. (2006), "Web 2.0 for feds", *Federal Computer Week*, available at: www.fcw.com/print/12_42/news/96857-1.html (accessed 20 November).
- Tapscott, D., Williams, A.D. and Herman, D. (2007), "Government 2.0: transforming government and governance for the twenty-first century", *New Paradigm*, Vol. 1.

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