Information policy meta-principles: stewardship and usefulness

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Abstract
The ideas that democratic governments should be open, accessible, and transparent to the governed are not new ones, but they are receiving renewed emphasis through the combination of government reform efforts and the emergence of Web 2.0 social media tools that promote information sharing, integration, and public discourse. Although these initiatives are young, they already exhibit daunting complexity, with significant information management, technology, and policy challenges. A variety of traditional and emerging information policy frameworks offer principles for considering and addressing these issues. Diverse research perspectives highlight both challenges to and opportunities for promoting transparency. The early implementation of public participation in the US Open Government Initiative suggests that two meta-policies, stewardship and usefulness, can help structure and balance the choices for action.

1. Introduction
Public policies pertaining to information flow are among the most fundamental aspects of democracy. Information policies reflect societal choices regarding how information should be produced, processed, stored, exchanged, and regulated [1]. In the United States, for example, the First Amendment to the Constitution embodies democratic principles of free expression, an independent press, and free exchange of information among citizens. It reflects strong values attached to the desirability of diversity in information sources and content as well as universal access to and participation in the marketplace of ideas.

In all of these areas, government treats information as an object of policy, that is information itself is the subject of policy making. These philosophically-anchored laws and principles shape the creation, use, expression, and dissemination of information and knowledge by everyone in society. They place government in the position of regulator of societal information flow. Examples of these kinds of policies are laws banning censorship, protecting personal privacy, supporting libraries, and providing for patents and copyrights over intellectual property.

Government also plays a second significant role with respect to information. As an information collector, producer, provider, and user, government also treats information as an instrument of policy. When government plays this role, it makes decisions about whether and how to collect, develop, disseminate, analyze, and preserve information in the service of some other policy principle (such as transparency, accountability, or social equity), or to achieve certain goals in domains such as public health, environmental quality, or economic development. These instrumental information policies are generally carried out in three ways: by collecting data for the express purpose of publication, by requiring private entities to publish certain kinds of information, and by the release of information collected in the course of government program and regulatory operations.

The first type is exemplified by the work of the US Census Bureau, Statistics Canada, and similar organizations in nearly every country that collect standardized data and publish statistical series and special reports that are respected sources of public information about their populations and economies. A policy of the New York City Health Department illustrates the second type. The department requires chain restaurants to publish the calorie content of each menu item in the hope that consumers will take that information into account in making healthier meal choices. The department does not collect the calorie data itself, but instead requires that the restaurants gather and provide it directly to customers. In the third type, information collected for or produced by government for operational or program management purposes is made available to the public for some other purpose. Public school “report cards” for example use student test data and budget information to highlight the performance of schools for parents and community.
members to consider as they formulate educational policies, programs, and budgets.

Information collected and maintained by government has long been considered a public resource [2]. Like other resources, government information needs to be protected from deterioration, loss, and abuse. It must be preserved for the future, and kept available for use by businesses, researchers, civil society, and ordinary citizens. Equally important, this resource must be ready to be employed by government itself in pursuit of public policy goals.

Good quality, usable government information is a valuable and costly resource that can be provided in a variety of ways, with different levels of detail, though different combinations of public and private investments. The degree to which a public agency, a nation, or any other jurisdiction invests in this resource rests mostly on the value that leaders and constituents place on publicly available information as a legitimate, desirable, and necessary function of government.

Many of the issues related to access to and dissemination of government information are understood as technical problems. These include issues of information storage, inquiry, and processing, as well as system design, or network capacity and coverage. Other challenges are categorized as management problems such as those associated with the rationale for and processes of data collection or records management and preservation. However, some of the most fundamental issues are neither technical nor managerial ones, they are policy questions about the priority such activities receive, the resources allocated to accomplish them, and the performance standards that measure their effectiveness. These policy questions cover a variety of topics. For example: Should government be responsible for routine data analysis and release of statistical series and summaries? Or should government simply ease access to the data it has and allow public and private users to integrate and enhance it? To what extent should taxpayers bear the cost of fulfilling the information needs of various segments of society? Should government ever charge fees for information? Should government interpret its data and make only its conclusions available? If so, would that effort preempt private initiatives or investment in better information resources?

For decades, access to government information has been the subject of discussion, research, and controversy. Karr [3] summarizes the issues as three enduring “tensions.” The first tension is between comprehensiveness of data and understandability by non-technically oriented citizens. The second tension is between the desire to ensure usefulness of detailed data while protecting the confidentiality of data subjects. The third is the public need and desire to analyze and understand “global” data sets versus the reality that government data is not maintained as a global asset but rather is distributed across scores of organizations and policy domains, at all levels of government.

Strain also exists regarding the release of government information that may be subject to misinterpretation due to lack of descriptive metadata, or the need for expert frames of reference or specific analytical skills [4]. These problems often surface when information is used for purposes other than the purpose for which it was collected. Such information was generally not collected with public release in mind. It is seldom managed in the structured way that Census data or other standard statistics are managed, making it more difficult for others to use and interpret and more subject to misunderstanding and misuse. In addition, some information is considered too sensitive or dangerous to release to the public (such as details of nuclear power plants, military installations, or power grids), especially in view of escalating security threats.

An additional set of issues is associated with information that is meant to be published but that does not necessarily or accurately measure the things it purports to represent. Performance reports such as “report cards” and “benchmarks” are criticized for this weakness because they reduce complex phenomena to simple numbers or letter grades that ignore scale, scope, and context, and can mask data quality problems [5].

Despite these challenges, the idea that democratic governments should be open, accessible, and transparent to the governed are receiving renewed emphasis all over the world. This emphasis reflects two trends: a drive for government reform in many different contexts and the availability and continuing development of information technologies that allow institutions, organizations, and individuals alike to find, share, combine, and re-use government information content.

2. Methodology and organization of the paper

This paper is a conceptual exploration of the tensions inherent in the drive to increase openness and transparency in government by means of information access and dissemination. Using mainly US experiences, it begins with a discussion of the ideals and multiple perspectives associated with this movement as reflected in both policy documents and research literature. This discussion concludes by presenting two overarching policy principles, information stewardship and information usefulness,
that can be used to sort out and balance these perspectives and tensions. The paper then applies these principles to the recent Obama Administration Open Government Initiative to illustrate how they might be used to assess the balance between these two kinds of information policies and practices. The paper concludes with a future research agenda that builds on this exploratory investigation.

3. Legal and policy frameworks

3.1. Traditional frameworks

Information policy principles have been embodied in American law since the drafting of the Constitution in the 18th century. The First Amendment, guaranteeing freedom of expression, is probably its the most widely known tenet. As early as 1789, Congress enacted laws regarding the orderly recording of government activities. But, as the nation grew more complex, the simple approaches of the eighteenth and nineteenth centuries became less effective means of public information. Accordingly, other laws strengthened the record keeping responsibilities of public agencies and the ability of citizens to know about and have access to them. The Federal Register Act requires an official record of executive branch activities much like the Congressional Record documents the proceedings of the national legislature; the Administrative Procedures Act requires agencies to follow prescribed rules for executing their powers and to publish in the Federal Register information about their organization, rules, decisions and procedures; the Freedom of Information Act (FOIA) prescribes other "fair information practices" designed to allow public access to the vast holdings of government records systems, as long as access does not threaten national security or invade personal privacy. The E-government Act requires agencies to use their websites to provide essential information about their organization, rules, decisions and procedures; the Freedom of Information Act (FOIA) prescribes other "fair information practices" designed to allow public access to the vast holdings of government records systems, as long as access does not threaten national security or invade personal privacy. The E-government Act requires agencies to use their websites to provide essential information about the public as well as a means of electronic communication with citizens.

Some government information policies restrict the use of information in order to protect or promote other values. The copyright provision in Article 8 of the Constitution, for example, establishes time-limited rights for artists and inventors to profit exclusively from their intellectual efforts in order to encourage innovation, invention, and the general growth of knowledge. Statute and case law including the Fourth, Fifth, and Fourteenth Amendments, the Privacy Act of 1974, and Supreme Court decisions established expectations of privacy for individual citizens regarding government’s ability to collect, know, or use personal information. More recently, laws have circumscribed the use of personal information within particular relationships, such as in the Health Insurance Portability and Accountability Act (HIPAA) which requires extensive privacy protections in both public and private health care settings. Similarly, the Family Educational Rights and Privacy Act (FERPA) protects the privacy of student education records and the Gramm-Leach-Bliley Act ensures that financial institutions protect the privacy of consumers' personal financial information.

3.2. Emerging frameworks

Some critics believe the concentration of vast amounts of information in huge bureaucratic institutions cannot be counterbalanced by individual rights or claims. They say the complexity of computerized data negates the expectation that government information will be available for public inquiry and scrutiny. Others argue it is not technology, but information policies, set by both design and default, that threaten the open nature of government and the citizen's role and relationships with it. In addition, the enactment of many specific laws, although well-meaning, can serve to fragment and complicate the rather than strengthen policy foundations [6]. Accordingly, more general policy frameworks have been proposed to govern access to government or government-funded information. Like the most recent laws noted above, each of these takes a particular point of view or area of emphasis.

The Open Government Working Group, a consortium of 30 open government advocates, recommended eight principles regarding access and use of public data to promote civil discourse, public welfare, and more efficient use of public resources [7]. These principles focus on the characteristics of the data itself. The principles state that public data is open when it is:

- Complete - All public data (defined as data that are not subject to valid privacy, security or privilege limitations) are made available.
- Primary - Data are collected at the source, with the finest possible level of granularity, not in aggregate or modified forms.
- Timely - Data are made available as quickly as necessary to preserve the value of the data.
- Accessible - Data are available to the widest range of users for the widest range of purposes.
- Machine-processable - Data are reasonably structured to allow automated processing.
- Non-discriminatory - Data are available to anyone, with no requirement of registration.
• Non-proprietary - Data are available in a format over which no entity has exclusive control.
• License-free - Data are not subject to any copyright, patent, trademark or trade secret regulation. Reasonable privacy, security and privilege restrictions may be allowed.

The Carter Center offers policies that focus on access to information as a fundamental human right in all cultures and systems of government [8]. In its Plan of Action, the Center recommends that all governments and international organizations assure this right by providing (pp. 3-4):

• equitable exercise of the right of access
• training of public officials on the practice and application of access rights
• public education to empower full use of the right
• allocation of necessary resources to ensure efficient and timely administration
• strengthening of information management to facilitate access to information;
• regular monitoring and reporting
• oversight of operation and compliance

In addition, the role of government as an information provider is receiving renewed attention with advent of Web 2.0 tools that allow users to combine data from a variety of public and private sources in ways that produce new kinds of information. Researchers at Princeton and George Mason Universities share a perspective that rests on government as a publisher of free, open, structured machine readable data and private sector or citizen-led initiatives to turn that data into useful, usable, and creative information products [9, 10].

This policy approach recognizes that government is inevitably constrained from effectively using the most advanced technologies by an array of compliance requirements associated with privacy, confidentiality, cost control, FOIA requirements and others, as well as by lack of resources to explore simultaneously many new avenues of information management, analysis and communication. They argue that government resources would be better spent preparing data for publication than trying to anticipate what users want to see on structured government websites. They assert that the private sector and even motivated individuals are better suited to analyzing, combining, and presenting information to users because they lack these constraints and represent diverse means, skills, and motivations which help to spread the risks of innovation and encourage competition and thus the creation of more kinds of information products and services.

Examples of the information services that could be provided already exist due to the efforts of certain nonprofit organizations and individuals. For instance, the Sunlight Foundation sponsors OpenCongress.org, a web-based service that combines official government data such as bills under consideration, with news feeds, blogs, and other sources that allow people to track legislation, issues, and the voting records of members of their choosing [11].

Finally, demand for public access to data has not been limited to data gathered or created by government. Another important policy debate centers on access to information and data that are the result of government funding, especially through publicly funded scientific research. The ministers of science and technology of OECD member countries recently adopted a Declaration on Access to Research Data from Public Funding to address this aspect of access. The declaration forms the basis for a set of policy principles to increase the value of public investments in scientific research by reinforcing open scientific inquiry, encouraging diversity of analysis, and enabling the exploration of questions beyond those of the initial investigators [12]. The principles address openness, transparency and active data dissemination; conformity with intellectual property and other ethical and legal requirements; explicit institutional responsibilities; professional standards and codes of conduct; technological and semantic interoperability; quality and security measures; operational efficiency; sustainability and flexibility; and management accountability [13].

4. Research contributions

Political science, public administration, and information science research all shed some light on the challenges of information-based government transparency. These studies explore some of the salient concepts and tackle some of the shortcomings of current efforts to promote transparency through the medium of electronic information.

4.1. Alternative views of transparency

Meijer considered transparency in light of larger societal trends. He argued that transparency, or a lack of secrecy and an openness to public scrutiny, is traditionally considered a means for reducing uncertainty and increasing public trust. However, he asserts that computer-mediated transparency has several characteristics that can actually threaten trust. Unlike direct, face-to-face forms of transparency, computer-mediated transparency is unidirectional (i.e., not interactive), decontextualized (i.e., removed from shared social experience), and overly structured (i.e.,
selective with a bias toward quantitative information). Using the example of Dutch school performance reporting, he shows how the necessarily partial selective list of topics addressed by school performance reports, comes to dominate perceptions of performance, increase ambiguity, and contribute to more rather than less distance in relationships between parents, teachers, and school managers [14].

4.2. Data quality and measurement challenges

Data quality research offers insight into one of the most difficult practical challenges of public access programs. Quality is most often characterized as simple accuracy, but research shows that high-quality data should be not only intrinsically good, but also contextually appropriate for the task, clearly represented, and accessible to users. In other words, it needs to be “fit for use” [15]. The same information may be fit for some uses, but completely inappropriate for others that have different temporal, security, granularity, or other requirements. Moreover, unrealistic assumptions about the quality and usability of information are frequent problems, including the common beliefs that information is objective, neutral, and readily available [16]. Research has shown that e-government interoperability and information integration is particularly sensitive to a variety of quality considerations including comprehensiveness, authoritativeness, assurance or trustworthiness, and perceived value as determined by the information seeker [17].

In order for users to assess data quality, they need to understand the nature of the data and must be able to identify the factors that determine its quality or fitness for an intended use. Since data producers cannot anticipate all users and uses, the provision of good quality metadata can be as important as the quality of the data itself [4].

The emphasis and current popularity of performance measurement has generated another important set of quality considerations. Performance measures are overwhelmingly quantitative indicators of selected aspects of government performance. However, research shows that quantifiable measures are inherently inaccurate representations of the complex processes that generate performance. In addition, given the intricacy of many programs and organizations, it is not feasible to measure all value-generating activities. Accordingly, those activities that can be readily quantified tend to be the ones that are measured, prompting a related tendency to value more highly those things that are easily measured and thus to undervalue or ignore those that are not. One consequence is reliance on measures that may be precise, but irrelevant [18].

4.3. Program design and management challenges

Other research emphasizes the challenges of designing and managing electronic information access programs. One study reviewed 22 access programs to identify 15 key design factors, or dimensions, that range from less to more problematic or resource-intensive. Eight dimensions address information users, suppliers, content, or use. Seven others consider technical and managerial aspects of the access program and its organizational context. The framework considers the specifics of users, uses, organizational capacity, data characteristics, and technology, in the context of a complete program, system, or process in which these components interact [4].

The research also included development and evaluation of three prototype data repositories. In each one, the main goal was to increase the availability and use of government information for planning and decision-making by providing Web-based access to electronic data and records. In all three projects, designers had to find ways to meet the needs of users, while ensuring that the design (1) could be sustained, (2) did not threaten the privacy, security, or confidentiality of data subjects or contributors, and (3) provided sufficient metadata and other tools to ensure appropriate use.

4.4. Information sharing challenges

Research in cross-boundary information sharing and interoperability offer additional findings and principles that may be useful in formulating a policy framework for transparency initiatives. When information is shared across organizational boundaries or levels of government, the participants generally expect benefits such as lower cost, better quality, and the ability to deal with more complex problems. They also recognize the risks of data discrepancies, misinterpretation, and resource drains [19]. Consequently, information sharing is more likely to be successful when several conditions are met. First, when policies are in place and practical tools are available that make sharing both legitimate and feasible. Second, when trusted social networks of relationships underlie the sharing process. Third, when roles and relationships are clear and widely understood by all participants [20].

This line of research concludes that any government seeking the benefits of information sharing needs a set of policies that balance the risks and benefits. Two complementary principles, stewardship
and usefulness, can guide decisions about how, why, when, and who uses government information [19]. These principles are discussed below.

5. Policy principles: stewardship and usefulness

These two principles offer a simple framework for working through the variety of goals and challenges inherent in information-based transparency initiatives. Although they serve different goals, ideally they complement one another.

The dictionary defines “stewardship” as the conducting, supervising, or managing of something; especially the careful and responsible management of something entrusted to one's care.

Information stewardship therefore promotes two essential goals. It protects information from damage, loss, or misuse, and it makes information “fit for use.” Stewardship focuses on the accuracy, integrity, and preservation of information holdings. It does not fix a single point of responsibility for such issues as accuracy, validity, security, use, description, or preservation. Instead, stewardship conveys the idea that every public official and government organization is responsible for handling information with care and integrity, regardless of its original purpose or source. It demands that government information be acquired, used, and cared for as a resource that can have organization-wide, jurisdiction-wide or societal value across purposes and time [19].

Stewardship is a conservative principle that recognizes that government information shares some of the characteristics of public goods like clean air and safe streets. Stewardship is concerned with accuracy, integrity, preservation, and protection of information. Policies that promote the protection of information address such issues as information and system security, confidential treatment of sensitive information, information quality, records management, and long term preservation of information with enduring social, legal, or historical value.

Data and meta data standards, for example, govern how data elements are described, defined, and represented in systems. These standards contribute to data quality and to the ability to use data for more than one purpose. Records management, retention, and disposition rules specify the reasons and manner in which public records are to be created, maintained for active use, and preserved for future generations. Security policies help assure that both information and systems are protected from unauthorized use or abuse.

Usefulness or utility is a corresponding information policy principle. The US National Institute of Standards and Technology (NIST) addresses the usefulness or utility of information in this way: “Utility” means that disseminated information is useful to its intended users. "Useful" means that the content of the information is helpful, beneficial, or serviceable to its intended users, or that the information supports the usefulness of other disseminated information by making it more accessible or easier to read, see, understand, obtain, or use.

This second information policy principle encourages information use. It emphasizes the value of information as a public asset or collective resource capable of and available for a wide variety of uses within and outside the government. Policies that foster usefulness and utility give agencies incentives to share data and other information resources. They encourage investment in information processing, analysis and presentation and lay the foundation for organizational and financial mechanisms to support information sharing and access both inside government and with the public [19].

The principle of usefulness recognizes that government information is a valuable asset that can generate social and economic benefits through active use and innovation. Such policies encourage agencies to use information to create new services or to devise better ways of doing traditional business. It promotes access to and use of government information by a wide variety of public and private users. Policies that emphasize usefulness often address interagency and intergovernmental information sharing, public access to government information, public-private information partnerships, or combination or reuse of information for new purposes. They also promote the use of information to improve the quality or lower the cost of government activities and programs.

These two principles may appear to be antithetical, but in fact they are complementary. Policies of stewardship help produce better, more reliable, more useable information and tested rules and tools for using it in different situations. These products of stewardship activities can lead to better understanding and more trust in information. These in turn promote more information use and greater acceptance of policies that promote use. Ongoing experiences in using information then increase the demand for stewardship in the form of better quality information and clear, consistent rules and tools for its use and management.

6. Illustration: the US Open Government Initiative

The 2008 US Presidential election placed in a new administration in Washington which brought with it a set of liberal philosophies about the relationship between government and people as well as a level of
technological savvy that includes extensive use of Web 2.0 social media tools. The first Presidential Memorandum issued by the Obama Administration asserts that federal government agencies should “disclose information rapidly in forms that the public can readily find and use” and ordered that an Open Government Directive that implements principles of transparency, participation, and collaboration be issued within the Administration’s first 120 days [21].

A great deal of commentary has been published in print and online about the nature, implementation, and implications of this initiative (see [22] for example) as well as its companion data provision effort, Data.gov. Although these initiatives are very young, they already exhibit daunting complexity, with significant information management, technology, and policy challenges. Data.gov, for example, is incomplete, hard to use, and leaves many unanswered questions about the data and what it represents. It currently hosts only a few data sets, presumably the best managed and documented ones, but the quality of the metadata varies substantially and the underlying contextual and user-oriented information about the data reflects each agency’s previous choices about what and how to provide it.

The Office of Science and Technology Policy (OSTP) in cooperation with the National Academy of Public Administration (NAPA) launched a brief and intense online nationwide brainstorming effort to solicit recommendations from Americans for the content of the forthcoming Open Government Directive [23, 24]. At the 120-day point, OSTP had gathered more than 1000 ideas, culled and organized them according to several major categories, and initiated an online discussion regarding a rough “mind-map” of the 90-plus ideas that were judged to pertain to transparency. These ideas were clustered into six categories:

- **Transparency principles and definition** (five proposals to require plain language rationales for policy decisions and to adopt balanced principles already developed by several professional and international organizations).
- **Government-wide transparency proposals** (40 ideas such as establishing a Transparency or Open Government Officer in all federal agencies, posting frequently requested categories of information on agency websites, various reforms to the Freedom of Information Act (FOIA), and providing more raw data in standard formats).
- **Records management** (8 proposals including better oversight, better metadata, and adequate funding for electronic records requirements).
- **Open government operations** (14 proposals covering such topics as providing summaries of all agency programs and services, adopting common innovative technology platforms, reducing secrecy, allowing government scientists to speak freely on their work, and requiring all agencies to develop web 2.0 communications strategies).
- **Technologies for transparency** (7 proposals including more focus on usability as well as such tools as perma links, graphics, and dashboards).
- **Growing and evolving Data.gov**, the Administration’s initiative to increase public access to high value, machine readable datasets generated by Executive branch agencies (18 proposals aimed at collaboration with the private sector, research on data quality, data repositories on various policy domains, and ways to protect sensitive information).

Phase 2 of the initiative involves a discussion period during which members of the public are invited to comment on these ideas, the categories, or other aspects of transparency. Phase 3 involves a policy development activity in which public participants will contribute to the draft language of the Open Government Directive. Table 1 shows how the brainstorming results of the initial phase of the US Open Government Initiative play out according to the these two broad information policy principles of stewardship and usefulness. Categorizing the results in this simple way prompts attention to the need for balance between these two essential requirements for a trusted open government. Rather than conceive of information policies as a collection of specific concerns such as individual rights, or data quality, or organizational imperatives, this approach can help policy makers focus on the relative importance and power of two powerful forces that will shape the choices and their consequences.

Counting ideas is not a way to make policy, but looking at the ideas generated by the brainstorming exercise according to these two principles does say something useful about what it has produced thus far – and what might be missing from the discussion.

The vast majority of ideas (55 of 92) contributed by participants fall into the usefulness category. This is not surprising given the focus of the exercise and the natural tendency for members of the public and civic and research organizations to seek more information and more diverse information from government. Dissatisfaction with the status quo is clearly evident, although most ideas are stated in positive terms. Participants offered recommendations for executive branch action, for private sector involvement, and for legislation to be considered by Congress.
Table 1. Stewardship and Usefulness as Information Meta-policies

<table>
<thead>
<tr>
<th>Open Government Initiative brainstorm category</th>
<th>Stewardship elements (13 ideas)</th>
<th>Usefulness elements (55 ideas)</th>
<th>Balancing elements (23 ideas)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparency principles and definition</td>
<td>N=0</td>
<td>N=3</td>
<td>N=2</td>
</tr>
<tr>
<td>Examples:</td>
<td>Examples:</td>
<td>Examples:</td>
<td></td>
</tr>
<tr>
<td>• none</td>
<td>• Adopt Open Government Data Principles</td>
<td>• Adopt Carter Center Plan of Action</td>
<td></td>
</tr>
<tr>
<td>Government-wide transparency proposals</td>
<td>N=2</td>
<td>N=24</td>
<td>N=13</td>
</tr>
<tr>
<td>Examples:</td>
<td>Examples:</td>
<td>Examples:</td>
<td></td>
</tr>
<tr>
<td>• Create agency data governance programs to evaluate quality and priorities</td>
<td>• Establish a Transparency Officer in each agency</td>
<td>• Reform FOIA laws</td>
<td></td>
</tr>
<tr>
<td>• Review and improve government-wide metadata standards</td>
<td>• More raw data in standard formats</td>
<td>• Get rid of microfiche and other obsolete data formats</td>
<td></td>
</tr>
<tr>
<td>Records management</td>
<td>N=7</td>
<td>N=0</td>
<td>N=1</td>
</tr>
<tr>
<td>Examples:</td>
<td>Examples:</td>
<td>Examples:</td>
<td></td>
</tr>
<tr>
<td>• Automatically store and catalog records</td>
<td>• None</td>
<td>• Better collaboration among CIO, records officers, FOIA officers and others responsible for records</td>
<td></td>
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<tr>
<td>• Set aside portion of all IT contracts for records management</td>
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<tr>
<td>• Establish a task force on authentication of records</td>
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<tr>
<td>Open government operations</td>
<td>N=1</td>
<td>N=10</td>
<td>N=3</td>
</tr>
<tr>
<td>Example:</td>
<td>Examples:</td>
<td>Examples:</td>
<td></td>
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<tr>
<td>• Subject voting technologies to publication and verification</td>
<td>• Provide summaries of all agency programs and services</td>
<td>• Identify and invest in shared innovative platforms</td>
<td></td>
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<tr>
<td>Technologies for transparency</td>
<td>N=2</td>
<td>N=4</td>
<td>N=2</td>
</tr>
<tr>
<td>Example:</td>
<td>Examples:</td>
<td>Examples:</td>
<td></td>
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<tr>
<td>• Focus on front-end organization of data using decision support model</td>
<td>• More RSS feeds</td>
<td>• Better software for comparing relevance and meaning</td>
<td></td>
</tr>
<tr>
<td>Growing and evolving Data.gov</td>
<td>N=2</td>
<td>N=14</td>
<td>N=2</td>
</tr>
<tr>
<td>Examples:</td>
<td>Examples:</td>
<td>Examples:</td>
<td></td>
</tr>
<tr>
<td>• Create cross-agency data dictionaries</td>
<td>• Set targets for putting agency data online</td>
<td>• Maintain a dashboard to show progress toward transparency</td>
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<tr>
<td>• Monitor protection of sensitive data</td>
<td>• Use crawlers to identify data that could be made public</td>
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<tr>
<td>• Publish all opinions of Office of Legal Counsel</td>
<td>• Publish all opinions of Office of Legal Counsel</td>
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<td>• Release contractor registry</td>
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</table>
Transparency-specific ideas, suggestions for designing Data.gov and recommendations for open government operations were most numerous.

By contrast, only 13 ideas were clearly motivated by a perceived need for stewardship, most of these in the often-criticized area of records management. Brainstorming participants tended to give stewardship less attention, perhaps because so much of the existing policy on for government information management already emphasizes this dimension.

Interestingly, more than a quarter of the ideas fall into a third hybrid category that illustrates the need for balance in design and implementation of transparency initiatives. These ideas focused especially on organizational and professional requirements as well as recognition that research and experimentation will be needed to test and refine new approaches.

8. Conclusion and future research

Two broad principles, stewardship and usefulness, can be used as information meta-policies to help simplify and balance the many considerations that are necessary to achieve greater government transparency and to realize the potential public value of government information. Stewardship is concerned with assuring responsibility, validity and legitimacy; usefulness with encouraging application, exploration and innovation. Without a restraining sense of stewardship, an emphasis on usefulness can lead to careless use, even abuse, of the power of information. Without encouragement to use information expansively, however, stewardship principles (coupled with the inherent conservatism of and constraints on the bureaucracy) can prevent both government and society from deriving greater public value from their enormous and ongoing investments in government information.

Future research on this topic could focus in several areas. First, research could aim to develop an assessment framework that defines and evaluates the capabilities government organizations need to assure effective and open government. These capabilities would need to address both stewardship and usefulness, as well as the balance between them. The goal of such a framework would be to help government organizations determine what is a healthy balance between stewardship and usefulness in different policy domains and under different conditions.

To move the Open Government Initiative forward, a second iteration of public participation could use a variety of Web 2.0 tools to engage the public in a process of identifying which information is of most value to various stakeholders, what kinds of information would be most appealing to external data users, and what kinds of data needs to remain under the full responsibility of government. A subsequent evaluation of those information resources could assess whether they embody an adequate balance of stewardship and utility, and could pinpoint weaknesses for further attention. There is also a related computer science and technology agenda to address the need for a variety of information management, analysis, and presentation tools, suited to different uses and users.

A policy research agenda is also evident. The Open Government Initiative brainstorming results are only a first attempt and a rough proxy for the full set of considerations that must go into a fully implemented transparency initiative. Important questions remain: Are all the salient issues identified? Have all legitimate stakeholders had a voice? Is this method of seeking public involvement fair, accessible, responsive, open? Does it generate public trust? The answers to these and similar questions will help determine the effectiveness and value of information-based transparency in fostering and protecting democracy.

References


