

## **Citizen Agenda-Setting: The Electronic Collection and Synthesis Of Public Commentary in the Regulatory Rulemaking Process**

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### **Abstract**

Digital communications technology is changing democratic governance (CEG 2001). Federal agencies are deploying new technologies to improve citizen/government interaction during the regulatory rulemaking process. In a "Memorandum for the Heads of Executive Departments and Agencies" released by the White House on December 17, 1999, the President called attention to the importance of upgrading the "capacity of regulatory agencies for using the Internet to become more open, efficient, and responsive" (Clinton 1999). A series of acts of Congress mandate that federal agencies move swiftly in this direction. While there is an ongoing debate over the merits of standardization across agencies, there is no doubt electronic rulemaking demands new forms of interagency coordination to speed the diffusion of IT-based approaches (GAO 2000).

Early efforts at electronic rulemaking have created new opportunities and challenges as technological innovation encounters real-world, large-scale operating constraints. Past experience, for example with emergence of scientific opinion surveys, suggests the adoption of new technology qualitatively changes the nature of citizen participation (Gallup and Rae 1940; Herbst 1993; Peters 1995; Wenk 1999). Information technology (IT) has the potential to create or prohibit conditions for broader input, debate, and deliberation approximating a communicative and democratic ideal (Wilhelm 2000). In matters of regulatory rulemaking, the impact is tangible, immediate, and evolutionary. "One of the Internet's real powers as a democratizing force," writes one public administration scholar "is that it has the capacity to educate large segments of the population at little cost" (Johnson 1998, 304).

One objective of this research is to assess the viability of computer-based methods for gathering, storing, securing, mining, and synthesizing data gathered during the public comment process. Federal agencies are developing new business processes, taking into account the multifaceted implications of electronic rulemaking. Both fundamental and applied computer science research on methods and tools for regulatory management are necessary (NRC 2000). Better channels of communication between federal agencies, industry, and academic researchers will promote technology transfers of the best IT-based approaches to rulemaking. Currently most information about other agencies' practices emerges ad hoc or through informal channels. A recent GAO report (2001, 30) notes the need for "some type of communication infrastructure to promote more consistent and structured sharing of information about IT innovations to facilitate the diffusion of those innovations across agencies."

A second objective of this work is to evaluate the impact of IT on the formation, articulation, and effect of public opinion. While it may be appealing to assume that IT is a panacea for participatory democracy, paperless regulation, and other facets of the transition underway, in fact, these innovations can create as many problems as they solve. At a minimum, greater attention needs to be focused on the meta- and micro-analytic problems relevant to social scientists interested in IT-based democratic governance, for example, in dealing with issues like environmental risk (Tesh 2000).

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## **1.1 Rulemaking in a Nutshell**

Regulatory rulemaking is a time- and information-intensive process, often requiring three or more years to complete (Johnson 1998). Recent history has propelled rulemaking into the focus of public attention by inviting greater levels of citizen participation. As Cornelius Kerwin notes, rulemaking offers “opportunities for dimensions of public participation that are rarely present in the deliberations of Congress or other legislatures” (1999, 32). It is a process designed to sort through facts and opinions derived from numerous sources. The core elements of rulemaking, according to Dr. Kerwin, are information, participation, and accountability. Each of these elements takes on new meaning as IT-based applications are introduced. Information overload strains agency personnel responsible for responding to input as well as the public’s ability to sort through the enormous dockets that are increasingly available online. Nonetheless, the GAO optimistically finds that the “use of IT in regulatory management can reduce regulatory burden; improve the transparency of regulatory processes; and, ultimately, facilitate the accomplishment of regulatory objectives” (GAO 2001, 1).

## **1.2 Making IT Better: Challenges for Interdisciplinary Research**

As the National Research Council notes in its report *Making IT Better*, “IT is anything but a mature, stable technology” (NRC 2000, 1). The challenge for researchers in this unsettled context is to assemble interdisciplinary teams capable of shaping IT and broader social or organizational dynamics into the most productive pathways. To that end, the model of user and end user advisory boards is appropriate for engaging federal agencies and citizens in a process that seeks to use IT to reduce the collective burden of making better public policy. “Overwhelmingly, the most important opportunities lie in not simply automating existing applications, but rather in rethinking and remolding the structure and organization of the business process to reflect the best uses of IT and in redesigning and remolding the technology to make it most valuable in its (rethought) application context” (NRC 2000, 146). One challenge is to pursue a vision that is long-term and evolutionary in the face of demands for technical quick fixes to persistent information management problems.

Building technical systems for social applications such as rulemaking requires that agencies and university researchers collaborate across the traditional “stovepipe” barriers, whether they lie between or within agencies, or else amongst the academic disciplines. The social sciences can inform IT developers on questions of legitimacy and authenticity in the political process. There is also a need for researchers who understand the relationship between IT and organizational structures. According to the NRC report:

Nontraditional research mechanisms may be needed that will encourage the participation of end user organizations in research, broaden the outlook of IT researchers, and/or overcome disciplinary boundaries in universities. The management of interdisciplinary research collaborations generates its own set of issues: technologists and social scientists have different vocabularies, methodologies, time perspectives, standards of evidence, and so on. Such differences need to be bridged if collaborations are to be effective. (168)

## **2.1 Technology Lessons Learned at the USDA**

The United States Department of Agriculture (USDA) is among the many federal agencies employing the Internet for citizen/government interaction. According to the online journal GOVEXEC.COM, the USDA's National Organic Program (NOP) conducted “the first fully electronic rule-making for a major regulation in federal history” (Friel 1998). As a result, the NOP received the 1998 Government Technology Leadership Award for its innovative use of the Internet in public service. This experiment in electronic government produced a rich qualitative database that, because of its format and size, presents novel analytical challenges. Improved methodologies are required to continue to efficiently assess and integrate citizen comments into the increasingly electronic regulatory process.

The USDA NOP project that first went live on December 15, 1997 did many things well and provided many lessons learned during the development, deployment, and use of the solution. Examples of these lessons learned are summarized below:

- **Simplify the user interface.** The initial design of the NOP rulemaking site was cumbersome and difficult to navigate, thereby possibly losing participants in the process. By using industry standards such as Dynamic HTML and JAVA, the interface can be simplified and made more powerful, while becoming user-friendly.
- **Use PDF as the format for images instead of TIFF.** PDF has emerged as the standard format for images on the web and should be used as the presentation format for both paper and fax comments. Downloading a non-standard special viewer to view comments is problematic.
- **Provisions for processing the results of mail in campaigns must be developed.** It was found that more than half of all the comments received by NOP were exact duplicates as the result of letter writing campaigns sponsored by special interest groups. This must be anticipated with filtering and other pre-sorting, self-indexing procedures.
- **Capture of electronic comments improved internal processing.** One of the benefits of electronic rulemaking is the ability to manage comments electronically within the agency. A more efficient resolution of comments and an accessible public record of the rulemaking activity can greatly reduce the task of responding to Freedom of Information Act requests.
- **Electronic rulemaking has public relations benefits.** The USDA cited increased public confidence in the agency regarding the NOP as a primary benefit. By allowing maximum participation and creating the ability to view all other participant's comments on-line, the NOP received praise even from opponents of the rule. According to the successful USDA Hammer Award application: "Universal access to information has spawned a communications network that improves public awareness, understanding, and participation in government." At the introduction of the revised rule, the Secretary of Agriculture declared: "I do want to point out that the fact that we are once again announcing a proposed rule on national organic standards is a living example of our democracy at work. The people spoke very loudly I might add" (Glickman 2000).

## 2.2 Information Technology for Future Rulemaking

Advances in Internet and other IT applications in the three years since the NOP rulemaking effort now allow greater flexibility and quicker development times. By leveraging today's IT tools and infrastructure, government agencies can develop a more sophisticated, less labor intensive electronic rulemaking system.

As opposed to the NOP rulemaking effort that was developed from a divisional perspective, future efforts to develop rulemaking systems and processes should be approached from a holistic agency-wide, sub-agency, or federal perspective. The economies of scale and reusability of a federal rulemaking system would allow lessons learned from multiple rulemaking efforts to be continually incorporated into the system. Given the premise, born out by current Department of Transportation docket management practices, that a system could be developed at the agency-wide level for electronic rulemaking, the following design criteria should frame future decisions about research into technology trade-offs:

- **Reusability**
- **Supportability**
- **Reliability**
- **Affordability**

These rulemaking system benefits have in common the themes of accountability and return on investment (ROI). Investment in information technology must show a return in either hard or soft dollars.

Hard dollars represent a reduction in the cost of conducting the rulemaking process, while soft dollars are those benefits that improve efficiency and the value of the final regulatory product. President Bush recently called for \$100 million dollars in the FY 2002 budget for an electronic government fund.

Web-based systems today are the most cost effective and easily developed systems to deploy. The rapid adoption of XML as a web standard language for e-commerce transactions provides an opportunity to develop standard XML schema and data type definitions for federal rulemaking processes. Bill Gates argues, “the Extensible Markup Language (XML) is the language of government” (cited in Temin 2001). Using XML as the standard development platform will allow future systems to be utilized across agencies or for a central federal system that could be used by many agencies. Vendors like ThinkXML, Sequoia Software, and Microsoft all embrace XML as the key technology to enable e-government.

As the Internet has grown, the pool of talent and tools available to develop these types of Internet-based systems has significantly expanded. In 1996, when the NOP system was conceived and developed, there were few systems integrators able to develop web-based systems, and still fewer government employees with the skills to support and maintain the system. Today, Internet systems of this type are commonplace and the skills to develop and deploy them are available.

In the past 3 years, magnetic storage of large amounts of information has become practical as the cost has decreased and the storage capacities have increased. According to the October 2, 2000 issue of Fortune magazine, the total storage capacity sold annually is expected to grow fifty-fold in the next five years, from 200 petabytes to 10,000 petabytes. Vendors like EMC and Network Appliance have relatively inexpensive storage systems to be able to manage the vast amounts of image and textual information expected by an agency or government-wide system. This increased data storage capacity now provides agencies and departments the realistic ability to store and manage large amounts of information without the need for large data centers, expensive optical jukeboxes, or off-line storage.

In order to reap the maximum benefit from an electronic rulemaking system, the information gathered from constituents must be reviewed and processed cost effectively making the maximum use of information technology tools. The first aspect of this is “routing” the information to the appropriate person or group of individuals that needs to take action on the information. The use of automated workflow technology can now automatically accept the comments from the web, paper, E-mail or fax technologies and route the comments based on pre-established procedures created by agency personnel. For instance, comments pertaining to a particular section of the rule or containing particular “keywords” can be automatically distributed to the responsible agency personnel anywhere in the world for action. The facilitator of this type of automated workflow are software systems from vendors like iComXpress, Metastorm, and Filenet, which can allow each agency, division or program personnel to develop their own business rules to handle comments as they come in from constituents. The system will fail, however, if it is assumed that a “one size fits all” method for processing public commentary can be created. The system must have the flexibility to allow customization and personalization of the business rules at the end-user level.

Once the comments have been received and categorized, the use of business intelligence tools to aggregate and analyze the data will vastly improve the usefulness of this information. The advent of the Internet and its corresponding massive amounts of data has spawned the development of the Business Intelligence industry. Vendors such as Cognos, Business Objects and Informatica have developed sophisticated analysis tools to analyze the terabytes of data collected by organizations with high web traffic. These tools can be applied to the analysis of rulemaking comments and demographic information to arrive at conclusions that can assist in providing better government regulations. Additionally, technology is available to enable and “teach” the system how to automatically deal with routine

interactions between an agency and the public. The use of expert systems and artificial intelligence can be employed to assist in responding to public queries, and to properly categorize and organize incoming information.

### 3.1 Public Participation in Rulemaking Decisions

Over the past twenty years, the field of risk assessment has evolved in a manner that is particularly illustrative of the benefits deriving from increased public participation in decision-making. The relationship between public participation in democratic settings and risk communication and management has not always been an easy one; in fact, many would argue that the democratic challenges faced by agencies are as difficult as the scientific ones. Early studies regarding risk, such as the WASH-1400 report on the safety of nuclear reactors (US NRC, 1975), focused on identifying point estimates of various risks. The intent was to summarize the best science and make rational policy based upon numerical analysis. This developed over time into the field of comparative risk assessment, motivated by an effort to use quantitative analysis to weigh risks against each other, and perhaps against the cost of regulation, and in so doing to “rationalize” policymaking. The goal of this effort is to allow agencies to focus limited resources on the most significant risks (Graham and Wiener, 1995; Tengs *et al.*, 1995; Ames *et al.*, 1987).

Part of the motivation for this type of policy analysis is that citizens can be poorly informed about risk, and therefore are susceptible to biases. This may lead to excess concern about some risks, and unwarranted complacency about others. Justice Stephen Breyer (1993) and John Graham (Wiener and Graham, 1995) are among those who suggest that public involvement can lead to poor rankings of risk priorities. This view calls for councils of experts insulated from public opinion to better serve the purpose of risk minimization. Non-experts tend to give risks vastly different rankings than experts (Slovic *et al.*, 1993). For example, the public may overestimate small risks and underestimate large risks, relying on experience and fallible heuristics (Slovic *et al.*, 1993, Slovic, *et al.*, 1999). Moreover, a public desire for “zero risk” in certain areas, may in itself lead to an increase in total risk through the irrational allocation of resources (Wildavsky, 1979).

Other authors, however, caution against attempts to isolate the risk management process, which is often at the center of rulemaking, from public input. Comparative risk studies tend to overemphasize point estimates and underemphasize the experimental uncertainty and that resultant from, for example, extrapolation to low doses (Byrd and Cothorn, 2000) or inter-species differences (Cohen and Ellwein, 1995; Harris 1991). Experts are not immune to overconfidence and underestimation of error, as has been demonstrated in studies of reported uncertainty in physical constants and models (Henrion and Fischhoff, 1986), though techniques have been developed in an attempt to minimize this problem (Morgan and Henrion, 1990). Many decisions, such as which extrapolation method to employ, are currently highly subjective. Kammen and Hassenzahl (1999, 11) point out: “Since decisions about values and preferences are made not just at the final decision stages, but throughout the risk assessment process, risk analysis necessarily combines both technical expertise and value choices.”

A compelling argument against technocratic decision-making is that it often fails to gain public support. Jeni *et al.* (1995) describe the failure of the Department of Energy’s Environmental Restoration Priority System, which was praised in technical peer review, but criticized by external stakeholders and eventually scrapped. The experience of the EPA’s advisory committee on endocrine disruptors is another example, where stakeholder groups representing citizens’ concerns quickly made clear their position that risk assessment had become a tool of industry to justify less than adequate protection from hazards (Crawford-Brown 1999).

As we look more closely at the feasibility of the Internet as a mechanism for public participation in federal rulemaking, these underlying questions regarding risk and public participation persist. Current social theorists point to characteristics of contemporary society that suggest the possibility of increased involvement of the public in decisions about risk. Beck (1995) sees a “risk society” that is characterized less by class struggles and more by struggles over the distribution of environmental risks related to industrial and technological advances. Beck critiques decision makers who retreat into secrecy to exclude the public from participation altogether. He argues for a “reflexive modernization,” in which science, technology, and the consequences of progress are democratically discussed.

This general idea of democratizing decisions regarding risk is reflected in the trend in the last decade among numerous political theorists who have focused on discourse and deliberation as crucial aspects of democratic practice. There is a renewed interest in the place of discussion, reasoning, and engagement across lines of difference in democratic politics. In the deliberative model, democracy is the practice of public reasoning. Participants make proposals, attempt to persuade others, listen to the responses of those others, and determine the best outcomes and policies based on the arguments and reasons fleshed out in public discourse.

A focus on deliberation is not a new thing for democracy. Although classic authors in the modern western political canon, such as Edmund Burke, John Stuart Mill, and Rousseau, championed in one way or another an emphasis on public deliberation, the focus continues in two of the most important political theorists of the twentieth century—John Rawls (1997) and Jurgen Habermas (1996). Among deliberative democrats, many call for expanding public deliberation of policy issues (Barber 1984; Bohman 1996; Dryzek 1990, 2000; Fraser 1992; Young 2000). Some see government as ultimately responsible for expanding the dialogue. Mehta (1998), for example, argues for public responsibility ensuring equal rights in dialogue and cooperative decision-making.

#### **4.1 Conclusion**

Whether or not the government is ultimately responsible for expanding participation, the Internet has emerged as a mechanism with the potential to achieve such an aim. Use of the Internet as a mechanism of reflexive modernization could lead to an open and authentic mode of communication, an increase in the diversity of voices and respect for varying positions, and an expanded public sphere. Such processes would not only lead to better and more reflective decision-making, but also increased legitimacy for the agencies. The use of IT may also prove to be a more efficient way to broaden public inclusion and discourse, providing benefits without the increased time and resources necessary for other favored processes such as collaborative environmental decision-making.

Plurality of participation can be achieved, among other ways, by opening the discussion to modes of expression beyond those traditionally accepted. The Internet may be a more accepting mechanism of the forms of lay expression that are outside the realm of either scientific or legal argumentation. Personal narrative or moral urging, for example, would weigh into deliberations on rulemaking. Democracy has always made risk management problematic. But recent developments in policy analysis, democratic theory, and IT offer new tools for improving and streamlining the democratic process while producing decisions which are both sound scientifically and seen as legitimate by the public. The adversarial style of policymaking is challenged by deliberative democracy in which preferences and interests are not brought into the conversation in a battle, with one winning and others losing. IT used for the collection and synthesis of public commentary must be systematically tested for its ability to make such an outcome possible.

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