## Project Summary—Proposal Section A

## Citizen Agenda-Setting in the Regulatory Process: Electronic Collection and Synthesis of Public Commentary

This is a proposal for a planning grant to develop a project that will examine the impact of new communications technology on public involvement in the regulatory rule-making process. One goal of the longer-term project is to contribute to the development and deployment of more sophisticated and manageable information systems for citizen/government interaction. Both the planning phase and the larger research project will promote further collaboration between social scientists working on the democratic process of governance and federal agencies with significant information service components.

Federal agencies are increasingly deploying new technologies to improve citizen/government interaction. In a statement released by the White House on December 17, 1999, the Clinton Administration reinforced the importance of upgrading the "capacity of regulatory agencies for using the Internet to become more open, efficient, and responsive…." Earlier efforts in the area of electronic government have created new opportunities as well as challenges associated with real-world operating constraints. For example, on December 15, 1997, the United States Department of Agriculture (USDA) sought public comment on proposed national standards to govern the marketing of organic agricultural products. 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." Following publication of the proposed rule over the Internet, the USDA received over 275,000 public comments by E-mail, WWW, fax and postal mail.

This experiment in electronic government has yielded a rich database that, because of its format and size, presents novel analytical challenges. New methodologies are needed to efficiently assess and integrate citizen comments into the regulatory process. This researcher currently is collaborating with USDA staff who implemented the public comment process. Staff members have expressed a strong interest in supporting this project, and have supplied an initial data set of over 20,000 comments submitted to the NOP via Internet technology.

One objective of the planning phase is to use the initial data set to test the viability of computer-based qualitative data analysis for the efficient integration of citizen comments. A second objective is to develop a design for a multi-agency project modeled on the USDA's NOP experiment. Therefore, a number of key questions will be explored in the planning phase and the resultant project that will be of interest to the academic community and federal regulatory agencies as they standardize systems for gathering and analyzing citizen input. How can the public comment process be modified to ensure the input of underrepresented groups who may not have Internet access? Will the groundbreaking NOP process shape the way the federal government uses advanced technology when managing large qualitative data sets derived from citizen/government interaction? What role can qualitative data analysis play in expediting informed analysis of patterns in public commentary and in what ways can these findings be used to affect policy decisions?

## Project Description—Proposal Section C

## Citizen Agenda-Setting in the Regulatory Process: Electronic Collection and Synthesis of Public Commentary

### Objectives

The primary objective of the planning grant project is to assess the viability of a larger research project that will examine the impact of Internet communications technology on public involvement in the regulatory rule-making process. The significance of this objective is that experiments in electronic government are breaking new, relatively untested analytical and procedural ground. Given the dearth of experience with these innovative processes, ongoing experiments in digital governance have a notable ad hoc quality. New research in this field can create models, generate data sets, and evaluate techniques that illustrate both the benefits and limitations of digital government.

While it may be intuitively appealing to assume that Internet technology (IT) is a panacea for more participatory democracy, paperless regulation, and other facets of the inexorable transition underway, in fact, real world efforts along these lines can create as many problems as they solve. At a minimum, a planning grant will allow greater attention to be focused on the meta- and micro-analytic problems relevant to social scientists interested in the problems of democratic governance. In addition, it will be of particular interest to information scientists and regulatory officials responsible for implementing national directives that seek a rapid transition to digital government.

A second objective of the initial planning study is to assess the viability of computer-based qualitative data analysis as a technique for mining data gathered through the use of Internet technology in the public comment process. The significance of this second objective is that current and future experiments in digital government will invariably generate data sets that necessitate the use of the most advanced methods and tools available for processing information. In the absence of reliable methods and tools, large data sets from citizen/government interaction may be considered more of an encumbrance to rather than a benefit of the new technological age. A number of commercial software applications have been developed that allow researchers greater analytical leverage over large qualitative data sets. What began as a collection of rudimentary content analysis tools, text retrieval devices and textbase managers, has developed into a powerful array of techniques and procedures for analyzing large amounts of unstructured qualitative data (Fielding and Lee 1998).

Refinement of existing tools can be expected to shape the way in which future citizen/government interactions will be conducted and the manner in which the data sets will be evaluated. Close and systematic attention to real-world constraints will help shape future innovation and design of digital government platforms for the collection and synthesis of qualitative data. Collaboration between government information systems managers, software designers, as well as social and computer scientists will contribute to the creation of new systems that may well be better suited to meet citizen demands for meaningful access to the regulatory rule-making process.

## Relation to Long-term Goals

The Principle Investigator's larger project will contribute to the development of more sophisticated, manageable, and democratic information systems for citizen/government interaction. The long-term goals underlying the work in the planning phase of the project are summarized here and detailed below:

1. To increase the efficiency, effectiveness, and democratic basis of the electronic public comment process.

2. To contribute to the development and deployment of standardized models of citizen/government interaction using Internet technology.

3. To foster collaboration between social scientists, computer scientists, and government agencies with significant information service components.

**1. How will the longer-term project increase the efficiency, effectiveness and participatory democratic basis of the electronic public comment process?**

The longer-term project will assess the possibility for efficiency gains, as well as identify the information management bottlenecks, when using IT to facilitate the public comment process. Efficiency gains can be achieved through the incorporation of advanced search-string and coding functions in the basic data management tools. For example, USDA's National Organic Program (NOP) staff members noted they would have benefited from an automatic screening tool that could identify form letters prior to the initiation of more careful analysis of the data. To be effective in this information-rich environment, government information managers involved in the regulatory rule-making process will increasingly have to employ methods of qualitative data analysis that make it possible to process large, unstructured text data sets.

There are significantly greater challenges involved in making a contribution to the participatory democratic basis of the regulatory rule-making process. As the review of the present state of knowledge presented below suggests, there are practical, theoretical, political, and perhaps most importantly, socioeconomic issues that enter into debates about the potential for IT to transform democracy. It suffices to say here that much more work is needed on multiple levels of analysis to assess and strategize the future role of digital government in any democratic transformation of the regulatory process. Having opened the door to broader citizen participation, government agencies now must demonstrate the capacity to respond effectively. The long-term project will bring these meta-analytical questions into the research design.

**2. How will the longer-term project contribute to the development and deployment of standardized models of citizen/government interaction using Internet technology?**

The ongoing efforts of the NOP represent one of the most elaborate and successful examples of the new experiments in digital government. Staff members at the NOP have gathered a large data set of public commentary through conventional and IT-based methods, and

made it available for citizens to access over the Web. Critical lessons were learned by the NOP staff that will help shape future innovation and the long-term development of a standard system for effective collection and synthesis of public commentary. Systematic research and peer-reviewed publications benchmarking the NOP's accomplishments, obstacles, and subsequent influence on the regulatory rule-making process, will contribute to a collaborative effort toward future development of a standardized model. This effort would lead to the design of a multi-agency experiment applying the next level of IT technology to meet the criteria discussed below.

Ongoing consultation between the PI and NOP staff members has generated a number of areas in which standardized approaches might improve the process of citizen/government interaction. For example, while much of the popular and scholarly literature focuses on the need to raise the technological literacy of citizens, NOP staff members noted that technologically competent information managers are also required to collect and process the qualitative data generated by expanding digital government opportunities. In addition, the reviewers of data generated by citizen input must possess sophisticated decision-making ability to analyze, sort, synthesize, and ultimately act upon the information generated during the public comment period in the rule-making process. Standardized tools for data mining citizen commentary will therefore be increasingly important, as will the skills and knowledge about how to use them.

**3. How will the longer-term project foster collaboration between social scientists, computer scientists, and government agencies with significant information service components?**

Digital government requires interdisciplinary collaboration to ensure that technological innovation meets the requirements of democratic institutions and traditions. The longer-term project will foster collaboration through research, presentations, publications, and a major conference that brings together academic researchers, private sector technology designers, as well as federal and state officials charged with the task of making digital government the standard. Chief Information Officers of federal agencies will be invited to participate in the design of more advanced and manageable platforms for IT-based citizen/government interaction. Furthermore, efforts would be made to involve the responsible parties within the Office of Information and Regulatory Affairs at the Office of Management and Budget. An initial planning grant will allow the PI to assemble an interdisciplinary group of co-investigators for the design of a longer-term project. As one author has noted:

> Governments have a fundamental role to play in the funding of advanced research and development that can push forward the frontiers of technology and knowledge. Often this will involve the development and use of pilot projects to test new ideas in the real world. (Kahn 1995, 23)

## Present State of Knowledge

Digital government is an emerging field of academic research and governmental activity. As early as 1993, reports appeared in the technology press about what were then considered extraordinary examples of "digital democracy," using the Internet to conduct global-scale town meetings (Anthes 1993). By 1995, the Internet was declared the "*defacto* standard" for citizen access to government information (Noack 1995, 29). However, with the initial euphoria over the

potential of IT to transform social relations, came a chorus of new concerns. For example, widespread use of the Internet for interfacing with the government poses new challenges regarding the protection of citizen privacy (Schwartz and Leone 1997). For the most ardent skeptics, it remains important to challenge "the myth of cyberspace as the current pinnacle of real democracy, freedom and information exchange" (Hern and Chauk 1997, 36).

Students of democratic theory have nonetheless increasingly turned their attention to digital government because of its potential to increase democratic participation (Grossman 1995; Hill and Hughes 1998). A number of scholars have remarked that the communicative possibilities created by IT could revolutionize the public sphere. The danger, of course, is that digital government might serve to widen gaps already separating the information and resource rich from the poor (Malina 1999). Furthermore, there are questions being raised about the power of a technological "silver bullet" to foster a more attentive and informed public. While an empowered citizenry capitalizing on more easily available information is possible, so too is a fragmented and non-deliberative populace (Alexander and Pal 1998). There is also concern that using new technology may introduce new biases to the policy making process. As Black (1998) observed, IT is not inherently neutral. Indeed, there is a need to examine the social implications of quantifiable (access) and non-quantifiable (power) factors in which the transition to digital government is embedded.

Digital government has been promoted as the basis for a paradigm shift that surmounts existing attitudes about government. As Hague and Loader (1999) have noted, apathy and cynicism are characteristic when government is perceived as unresponsive. The tendency in the past has been for IT to increase the flow of information from the government to the citizens, but it has been less influential in creating opportunities for citizen-to-government information flows or substantive citizen deliberation. Pessimistic accounts charge the Internet is just as prone to elite domination as were earlier media. One scholar has suggested it is "absurd" to assume that technological innovation itself can lead to greater public control of the agenda-setting process in government (Davis 1999, 170).

Significant challenges stem from a new conception of citizen/government relations that is part of the transition toward digital government. It has been suggested that civil society, democratization, open government, and the rule of law are increasingly dependent on both the full development of IT capability and the concomitant widening of access and knowledge about new technologies. The realization of more complete citizen access, in this view, hinges on the development of "electronic safety nets" that allow citizens to obtain access to, and influence upon, federal agencies (Perritt, Jr. 1997). Pioneering efforts to that end have been celebrated as "Deweyan systems" to the extent that they provide for citizen-based forces to counter existing media and interest group politics. In the best cases, "Deweyan" experiments promote civic interaction and build social capital (Aikens 1999).

Recent conferences and ongoing committee work have resulted in several publications that evaluate the prospects and challenges associated with increasingly electronic forms of government. The findings include general claims about the new opportunities and demands for more efficient citizen/government interface, and specific recommendations about the types of problems that could be addressed through collaborative and cross-disciplinary efforts. For

example, given the complexity of the new challenges facing the Federal Information Services, there is a consensus that state of the art techniques are as yet unable to meet the challenge of managing very large data sets (Schorr and Stolfo 1997). Some initiatives, such as Information Technology for the Twenty-first Century ($IT^2$), premise a "shining future" on breaking down traditional barriers to information and government access, while noting there is much research to be done on social and economic factors (National Science and Technology Council 1999).

In what is perhaps the most thorough analysis of the challenges for the transition ahead, the report of a 1998 multidisciplinary workshop argued that technology alone cannot meet public demands or solve democratic dilemmas. Questions abound about the new implications for citizenship, leadership, representative government and institutional innovation. Democratic theory, in this instance, can help chart the rules, rights, and responsibilities of government in a digital era. At stake are issues concerning trust in government, the quality of citizen input, and the functionality of existing institutions in the new environment. As this report noted, the tools for data mining and analysis are underdeveloped and lack standardization. To solve some of these analytical and practical dilemmas, greater collaboration between social and information scientists is needed, particularly those efforts that link academic and government institutions in joint projects (Dawes et al 1999).

The President's Information Technology Advisory Committee (PITAC) maintains that IT will result in profound improvements in the workplace, health care, and government responsiveness. The 1999 PITAC report, however, also anticipates the problems of using this "powerful tool for democratization" that may stem from socioeconomic factors. While free flowing information is considered crucial, access to it, and knowledge about how to use it, must be equitably distributed among the population. "We should use information technology to bridge the gaps in our society, " the PITAC report notes, "not to create new ones" (PITAC 1999, 13).

Recent legislation and Executive orders have sought to promote greater accessibility, efficiency and effectiveness in citizen/government relations by recasting the traditional conception of citizens as consumers in need of tools and knowledge that maximizes their satisfaction with and loyalty to government (Hernon 1998; Temin 1997). Some scholars, however, have asked whether important decisions about the future development of the National and Global Information Infrastructure (NII/GII) are being made without consideration of public input. While technical barriers to the realization of the NII are steadily being eroded, there is a need for more democratic forums that allow the clear articulation of the rights and responsibilities of a user-citizenry (Ogden 1998).

Lessons can be drawn from the experience of Congress with the influx of email correspondence in recent years. Congressional members and their staff have had to confront new challenges associated with mass e-mailing and so-called astroturf lobbying from sources that may or may not be constituents (Owen, Davis and Strickler 1999). Similar challenges will invariably confront federal employees integrating IT into the regulatory rule-making process. There may be relevant lessons based on other nations' experiences. For example, one study of Canadian experiments in teledemocracy suggests that while the benefits in theory include overcoming dispersion, inequality and scale barriers to participation, the actual evidence of these results is often harder to come by (Cross 1999).

Political scientists are among those who have worked on models of discursive democracy that favor open, equitable, and ultimately rational debate under conditions as close to ideal as possible. These efforts, for example, link greater ecological rationality and more participatory forms of democratic debate (Dryzek 1987; Hajer 1995). According to one view: "Communicative *rationality* is the extent to which this action is characterized by the reflective understanding of competent actors. This situation should be free from deception, self-deception, strategic behavior, and domination through the exercise of power" (Dyzek 1990, 14). Clearly IT has at least the potential to create conditions for debate and deliberation that approximate this communicative ideal. Past experience, for example with the advent of scientific opinion surveys, suggests the transition to new technology can qualitatively alter the nature of citizen participation channeled through a new organ (Gallup and Rae 1940; Herbst 1993; Peters 1995). As the transition progresses, therefore, it will critical to evaluate the effect of new technologies on the formation and articulation of public opinion.

## General Plan of Work

The general plan of work consists of six components. Each of the proposed activities in the pilot project is designed to lay the basis for a larger, interdisciplinary, multi-agency experiment in the use of IT for managing public comment in the regulatory rule-making process.

1. Key informant interviews with the staff of the NOP
2. Outreach to Chief Information Officers in several federal agencies and the OMB
3. Organization of an interdisciplinary team of academic co-investigators
4. Qualitative analysis of the NOP data set
5. Presentation of the PI's research at academic conferences and publication
6. Development of a proposal for a longer-term, multi-agency experiment

### 1. Key informant interviews with the staff of the NOP

Staff members at the National Organic Program have learned valuable, hands-on lessons about the merits and challenges of using IT in the public comment process. Key informant interviews with the NOP staff in Washington DC and the National Organic Standards Board will assist in the evaluation of existing strategies and contribute to planning future experiments in digital government. During the pilot stage of this project, the experience of the NOP staff will be translated into proposals for more widespread adoption of "best practices" for digital government. These standards will be identified through research, as well as through collaboration between public and private sector stakeholders.

### 2. Outreach to Chief Information Officers in several federal agencies and the OMB

The pilot study will allow the PI to establish a working relationship with the Chief Information Officers (CIOs) of several federal agencies as well as with officials at the Office of Information and Regulatory Affairs at the Office of Management and Budget (OMB). During the ongoing transition to digital government, the CIOs and the OMB have critical roles. For example, the USDA's CIO "supervises and coordinates the design, acquisition, maintenance, use, and disposition of information technology by USDA agencies" (USDA 2000). Consultation with

the OMB and the CIOs will ensure that future research and experimentation carried out as part of this project will incorporate the collective experience of these government officials.

**3. Organization of an interdisciplinary team of co-investigators**

A longer-term project will require the PI to assemble an interdisciplinary team drawing on researchers in both the social and information sciences. A key function of the planning grant is to establish the PI as a facilitator of collaboration across disciplinary boundaries and between government agencies and the academic community. The PI will draw upon an existing network of social scientists and reach out to information scientists with expertise in matters of digital government. The PI's previous experience organizing and attending interdisciplinary conferences will be useful for this element of the planning phase of the project.

**4. Qualitative analysis of the NOP data set**

The NOP has provided the PI with an initial data set of over 20,000 comments submitted via the Internet during the public comment process. An initial pilot study of approximately 500 randomly selected comments using qualitative data analysis software is underway. The planning grant will allow the PI to undertake a more comprehensive study of the potential for qualitative data analysis tools and skills to improve the efficiency and effectiveness of citizen/government interactions in the future. While the commercially available software packages may have limited applicability at the federal level, the fundamental principles of qualitative data analysis can guide the design of future government platforms for citizen commentary.

**5. Presentation of the PI's research at academic conferences and publication**

Part of the planning grant will offset the expense of presenting the findings of the pilot study at disciplinary and interdisciplinary meetings. Preliminary analysis of the pilot study data, the status of digital government, and the potential for qualitative data mining methods will be presented at the Western Political Science Association meeting in March 2000, and the Agriculture, Food, and Human values meeting in June 2000. A planning grant for the year 2000-2001 will allow the PI to present more fully developed research findings at conferences that bring together researchers working on digital government issues. These networking opportunities will assist the process of assembling a team of co-investigators for the larger project. The goal is to generate articles for academic, peer-reviewed journals during the period of the planning grant.

**6. Development of a proposal for a longer-term, multi-agency experiment**

Each component of the general plan of work is designed to establish the basis for a longer-term, multi-agency experiment using digital government to improve the public comment process. The goal is to assemble an academic research team that can collaborate effectively with government agencies in an effort to identify the ways in which the public comment process can be more efficient and democratic. The final outcome of this planning grant will be a completed proposal for a longer-term study along the lines laid out in this project description.

## Broader Impact

The broader impact of this study will be to provide tools for narrowing the digital divide insofar as it is an issue in the regulatory rule-making process. "We must begin this millennium not as a country technologically divided," states the Vice President, "but instead as one committed to creating digital opportunity for all of our citizens" (Gore 2000). Progress toward this goal requires that government be able to process and respond to the input generated by the public. In order for citizen agenda-setting to work, government must be prepared to analyze and act upon enormous quantities of qualitative data. This project seeks to contribute to the tools and knowledge base necessary for this inevitable transition to digital government.