

5. Digital Government Program recommendations

Complexities of the public sector environment, needs identified by practitioners, and research opportunities and challenges that emerged from the workshop discussions led to six recommendations to the National Science Foundation for furthering the goals of the Digital Government Program.

1. Support research at the Federal, state, and local levels as well as investigations into intergovernmental and public-private interaction.

The innovations and experiments that abound at the local, state, and national levels provide countless opportunities for grounded research. As the Ford Foundation Innovations in American Government Program shows, ideas that emerge in every corner of the nation have the potential to mature into advanced applications that can be adopted in many other places, and even become nationwide service models. The Digital Government Program should therefore emphasize the multi-faceted nature of American government and encourage projects at each level of government. It should also support studies of multi-level functions and programs that link the public, private, and nonprofit sectors. A multi-level, cross-sectoral research program would have significant benefits:

- Better appreciation for the singular capabilities, needs, and issues present at each level of government.
- Increased understanding of how the interconnectedness of government agencies affects the administration, performance, and cost of public programs and the deployment and performance of information systems that support them.
- Better understanding of the role of the voluntary not-for-profit sector in the delivery of government services.
- New models for managing private sector involvement in government operations and better understanding of the applications and limits of private sector business models for public sector functions.
- Improved models of the process of innovation as well as better understanding of the diffusion of innovation in the public sector.

2. Attend to issues of "governance" as well as "government" in the digital age.

Information technology can play a significant role in transforming not only government services and administration, but also the working of democratic institutions. Projects that focus on the nature and effects of "digital governance," the roles and rights of citizens, and the functioning of civil society should be included in the Digital Government research program. In doing so, the program will:

- Encourage both analysis and reflection about the effects of emerging technologies on citizens and non-governmental institutions.
- Account for the role, capabilities, and preferences of citizens in decisions about how to use technology in the service of democracy.
- Understand how the infusion of technology at different points in the democratic process affects the distribution and exercise of power.

3. Encourage methods that describe, account for, and evaluate questions of service and system integration and environmental complexity.

In order to be successful, the research program will need to address the interplay among technical, management, policy, and organizational factors influencing the information systems that support government operations. With this diverse set of research questions and objectives, the program should encourage research in both social and information sciences and welcome a variety of research methods, particularly ones that directly involve system users and beneficiaries. These might include:

- single and comparative case studies
- experimental testbeds
- single and multi-site field research
- surveys
- longitudinal studies

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- network analyses
- evaluation studies

4. Seek innovative funding models that build a larger resource base for Digital Government initiatives.

At present, the NSF funds allocated to the Digital Government Program are quite modest and are insufficient to support sustained research into the complex questions posed at the workshop. NSF should consider innovative funding models to increase the amount of resources available to support the program. The following mechanisms should be explored:

- Encourage cash or in-kind matching by grantee institutions. This option should not become a barrier to participation by smaller institutions or jurisdictions. In-kind matches could include such items as access to internal data, sponsorship of advisory committees, dissemination of project results, and similar activities that further the purposes of the research.
- Use Digital Government grants to add a formal research component to applications projects that are or will be sponsored by government agencies. In this way, Digital Government grants will encourage formal evaluation and documentation of empirical results, leading eventually to more formal models of organizational and system performance.
- Engage other federal research agencies and private foundations in jointly funded research. The questions likely to be posed by Digital Government research projects are of deep interest to a variety of funding organizations. NSF should pilot test a few grants that combine funding from several sources to determine the feasibility and effectiveness of a mixed funding model.
- Explore partnerships and incentives for the private sector to participate in the program through use of private research and development assets, and by including private sector strategic requirements for Digital Government services in the program design.

5. Link research and practice in an ongoing exchange of knowledge, needs, and experiences.

Given the wide communications gap between the academic and government practitioner communities, and the significant opportunity for improved practices through collaboration, new methods are needed for disseminating research results to practitioners and for infusing research with the problems of practice. NSF should encourage the development of organizational structures, information sharing mechanisms, and funding methods to bridge the gap between these two cultures. Specific recommendations include:

- Sponsor workshops on topics of importance to both practitioners and researchers to provide opportunities for members of both communities to express their needs, explain their capabilities, and explore mutually beneficial activities.
- Require researchers funded under the Digital Government Program to prepare reports specifically for a practitioner audience periodically throughout the grant period.
- Sponsor one or more Web sites that support practitioners' use of research skills and results and researchers' quest for field tests and other practical venues for their investigations.

6. Create a practitioner advisory group for the program and include practitioners in the review panels.

If the Digital Government Program is to succeed in integrating research and practice, practitioners must have a major role in setting priorities and selecting projects to be funded. An advisory group made up of practitioners from all three levels of government would assist in program design, in attracting government funding and research partners, and in disseminating results. Practitioners must also participate in reviewing proposals that seek to study their areas of expertise, whether they be specific policy areas (such as public health or transportation) or functional domains (such as service delivery or regulatory affairs). This will also help insure the relevance of projects, access to venues for field research, and an audience for the research results.

Conclusion

To build a digital government for the next century, the nation needs to assemble and employ an array of talents and resources. Evolving technologies will surely continue to be a catalyst and agent of change, generating increasing need for technological research and development. The change that technology brings with it demands equally serious research investments into questions of political, institutional, and organizational response and adaptation. To meet these challenges, NSF's Digital Government research program must foster multidisciplinary, multi-method research. This research program must extend across time and physical and political geography, and be linked in mutually beneficial ways to the goals and the practice of government.