

DEVELOPING A BASIC RESEARCH PROGRAM FOR DIGITAL GOVERNMENT

Report of a national workshop sponsored by the National Science Foundation Digital Government Program and held at Harvard University, May 30 - June 1, 2002¹

Jane E. Fountain, Principal Investigator

EXECUTIVE SUMMARY

More than 30 experts gathered at Harvard's Kennedy School of Government in Cambridge for a national workshop to aid in the development of a broadly-based, multidisciplinary research agenda for digital government. Its specific focus lies at the intersection of information and communication technologies (ICTs), organizations, and governance.

A dual purpose of the research agenda is the extension and refinement of fundamental theoretical frameworks in the social and applied social sciences to allow researchers to more powerfully examine the socioeconomic implications of developments in ICTs. Thus, the research agenda is meant to advance social science disciplines and fields as well as digital government research and practice.

Entrepreneurial scholars have carried out most digital government research to date. These researchers were educated in a variety of different fields and have worked in relative isolation from one another with little institutional support from professional associations, university programs, and the complex web of people and organizations that constitutes the academy. A third broad objective of the research agenda, therefore, lies in strengthening the emergent network of scholars, government decisionmakers, and institutions that would sustain and support research and improved practice in the governance and institutional issues at the core of digital government.

Several benefits are likely to flow from a coherent research agenda focused not only on technology but also on governance and organizations:

- ❑ It has the potential to save American taxpayers billions of dollars by generating knowledge and recommendations proactively
- ❑ It has the potential to reinvigorate and leverage the social sciences
- ❑ It is anticipated to contribute to the nation's digital government human and social capital through convening scholars and practitioners, as well as facilitating knowledge and technology transfer.

The workshop in Cambridge brought together researchers from several disciplines and applied fields, including political science, computer science, public policy and management, sociology, psychology, and organizational behavior. The active participation of federal and

¹ This report is based upon work supported by the National Science Foundation, award no. EIA-0203085. Any opinions, findings, conclusions or recommendations expressed in this report are those of the author and do not necessarily reflect the views of the National Science Foundation.

state government officials at the cutting edge of digital government added expertise concerning practical priorities, feasibility, and the current state of practice and knowledge.

A set of questions posed to participants before and during the workshop structured the workshop and a set of white papers prepared in advance of the meeting:

1. What are the most important impacts of information technologies on the structure and processes of government organizations? Which impacts are already discernible? Which are likely to emerge during the next decade?
2. Reversing the causal arrow, how are public managers and policymakers using information technologies to craft new organizational forms or to make important modifications to present forms? What decision-making and problem-solving processes are emerging as the principal means of mutual adjustment?
3. What is the impact of increasing use of information-based, networked forms of organization on the institutional structures-- for example, oversight, budgeting, accountability systems -- that regulate governance?
4. What perspectives, theories, conceptual frameworks, and methods seem particularly useful for the study of the developmental processes and organization of digital government?
5. What forms and processes of collaboration between social, policy, and information scientists might further a research agenda for digital government? How might an organization like the National Science Foundation Digital Government Program provide incentives for the advancement of high-quality multidisciplinary research?

A set of critical topics in the social and applied social sciences outline the priorities for a digital government research agenda focused at the intersection of the ICTs, organization, and governance. These topics are assembled broadly into the following four major categories, briefly summarized here and developed in greater detail in the main report:

Conceptualizing Research Design. There is a significant need for stronger research design as well as a research agenda that includes not only problem-based research but also research on information technology and government that draws from and, in turn, refines and reinvigorates central social science theories and perspectives. Without systematic research design, findings and methods fail to accumulate to produce a base upon which researchers can build.

Information Technologies, Governance and Organizations. Central research topics at the intersection of technology, organization, and governance include the following: how ICTs interact with the structure and processes of government organizations; how institutional structures--such as oversight, the budget process, or legislation--may affect the development of networked forms of governance; how managers and policy makers

use ICTs to develop new organizational forms or to modify existing forms; the impact of ICTs on intersectoral, intergovernmental and interagency coordination and collaboration; and the policy and political processes that influence data integration and standards.

Applied research would examine practical, problem-based questions related to the topics above and would examine the strategic, operational, and other management issues related to the implementation, use, and evaluation of ICTs in government. High priority issues encompass critical elements of government performance, including effectiveness, efficiency, accountability, access, responsiveness to citizens, federalism, and capacity for learning and innovation.

Digital Government and its Stakeholders. Empirical research on the users of digital government is a central priority given wide speculation and predictions regarding digital democracy and citizenship in an information society. Specific research questions include: How do citizens actually use online government information and services? Is there a digital divide not only in access to equipment but also in the ability to navigate, search and query in an online environment? How are interest groups and civic associations using the web? What are the key emergent changes that might be empirically identified and described in civic engagement?

In addition to users, key stakeholders include a variety of actors who play distinctive roles in the design, development and implementation of digital government tools, applications, and systems.

Change, Transformation, and Co-evolution. The process of change requires research separate from the topics above in order to focus specifically on the transformative processes that lie between inputs and outcomes. This category includes the antecedents and consequences of specific change processes, catalysts and incentives for change, models of emergence and network development from complexity theory, as well as extension of current theories of technology adoption, technology transfer, knowledge diffusion, and innovation as these processes relate to digital government.

Finally, the workshop made clear the important role to be played by the National Science Foundation in the development and support of a digital government research agenda. The Digital Government Program within the Directorate for Computer and Information Science and Engineering pioneered support for research on the technologies and applications required for digital government. The Digital Government Program also has employed a network building approach not only funding research but also building the community of scholars and practitioners necessary to produce a sustainable, coherent research agenda. The logic is compelling for a natural extension of these efforts to include central questions of governance and organization in the portfolio of research topics associated with a digital government research agenda for the nation.