

Democratic Processes in the Age of the Internet: A Framework for Action

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Introduction

The Internet is an increasingly important force in reshaping many aspects of social, economic, and civic life. Its influence is not well understood, however. Although some developments—such as electronic commerce, distance education, and entertainment delivery via the Internet—are covered widely in the media and are well comprehended as concepts with specific consequences, applications in the civic sphere—from political activity to government operations—seem comparatively less established. How the Internet may affect democracy itself is uncertain, and that is an issue that warrants objective assessment.

The historic 2000 presidential election provided stellar examples of the generally mixed reviews of the role of technology in the democratic process. In the presidential vote count, the most salient manifestation of technology was the confusion caused by the use of inadequate balloting systems. And yet, perhaps predictably, an enormous amount of post-election attention has been focused on balloting systems based on new technologies—Internet voting, computer-based polling equipment, and so on. For example, Unisys, Microsoft Corporation, and the Dell Computer Corporation are teaming up to develop an electronic voting system to eliminate the type of ballot confusion that characterized the 2000 election.¹ The Massachusetts Institute of Technology and California Institute of Technology have announced a collaborative project to develop an easy-to-use, reliable, affordable, and secure voting machine that will prevent a recurrence of the problems that threatened the 2000 presidential election.²

On a somewhat higher level, the Century Foundation has announced the formation of a bipartisan National Commission on Federal Election Reform to be chaired by Jimmy Carter and Gerald Ford. The purpose is to recommend ways to improve the process for electing federal officials, namely the President, Vice President, and Members of Congress. More specifically, the focus of the commission is to improve and standardize the processes now being used to cast and count ballots for elected federal offices.³

¹ Reuters, January 11, 2001.

² News Conference, California Institute of Technology, December 14, 2000.

³ News Release, *The Century Foundation*, January 30, 2001.

Both technology and the balloting processes that technology supports are important. But technology is the focus here. It played a variety of roles in the election⁴—from its presence or absence in the voting and counting processes to its use as a source of information about the process in the midst of conventional media—that underscore its importance as a factor. Of particular note was the role of the Internet. Some Internet content and services mirror those found off-line, but an increasing number are online only, inaccessible without the Internet. A late-night update of a morning newspaper, for example, can be found only online. The future promises yet more capabilities and services associated with the Internet, and these will influence the civic sphere both directly and indirectly.

Indeed, evidence from the 2000 presidential primaries and gubernatorial elections suggests a potentially important role for the Internet in supporting or challenging candidates' campaigns⁵ and grassroots advocacy relating to various issues and causes.⁶ Local and regional governments are also experimenting with Internet-based voting,⁷ and governments at all levels are using the Internet to provide information (both published and personalized) to the public,⁸ collect information and taxes from citizens (and others), and deliver a variety of transactions and services.

In this technological milieu, commercial interests have played—and continue to play—an influential role. For example, election.com is a commercial, for-profit firm that provides election services to the public sector (and was used to support the Arizona primary for the Democratic Party in 2000). A myriad of Web consultants offer advice to political candidates about how to use the Internet to transmit their messages directly to the people, without intermediaries to "interpret" or "spin" their unvarnished truths. VoteNet.com provides "one-stop shopping" for political information, campaign solutions, and Internet-based advocacy tools.

Commercial vendors have provided political services for many years. They are nominally non-partisan, in the sense that they are not usually associated with individual political parties

⁴ See, for example: Goodman, Peter S. 2000. "An Outcome Driven by Technology, High and Low." *The Washington Post*, November 10, p. E1, E10; Simpson, Glenn R., Ted Bridis, and Michael Orey. 2000. "With All the Glitches, The Wonder Is Why The System Survives." *The Wall Street Journal*, November 9, p. A1, A18; and Meehan, Michael, and Mathew Schwartz. 2000. "News Web sites struggled on Election Day." *Computerworld Online*, November 9, http://computerworld.com/cwi/story/0%2C1199%2CNAV47_STO53650_NLTam%2C00.html.

⁵ Milbank, Dana. 1999. "Virtual Politics," *New Republic Online*, July 5; Mintz, John. 2000. "McCain Camp Enjoys A Big Net Advantage," *Washington Post*, February 9, p. A1, A8; Anonymous. 1999. "Bradley, McCain have best web sites," *media central*, November 23. Article available online at <http://www.mediacentral.com/channels/inetcomm/943374020_358.html>; and "Pressing the Flesh Online," *Newsweek.com* recounted Jesse Ventura's successful bid for governor of Minnesota by effectively using the Internet (See <www.politicsonline.com/coverage/newsweek/index.html>.)

⁶ Hammond, Allen and Jonathan Lash. 2000. "Cyber-Activism: The Rise of Civil Accountability and Its Consequences for Governance," *Information Impacts Magazine*, May.

⁷ Larsen, Kai R. 1999. "Voting Technology Implementation," *Communications of the ACM*, Vol. 42, No. 12, December, p. 55-57; Waskell, Eva. 2000. "California Internet Voting," *The Bell*, October.

⁸ See, for example, Computer Science and Telecommunications Board and Committee on National Statistics. 2000. *Information Technology Research for Federal Statistics*. National Academy Press, Washington, DC. This report is part of a larger project on digital government by the CSTB study committee, Computing and Communications Research to Enable Better Use of Information Technology in Government, which will produce a final synthesis report in mid-2001.

(although their clients may tend to be). Today's vendors purport to exploit new media such as the Internet to do more effectively what is already being done, but how they facilitate political process and discourse in an Internet era may have effects that go beyond those ordinarily associated with mere implementation issues. Indeed, these Internet and information technology applications may affect—or even reshape—notions of civic engagement and political participation.

Against this backdrop, the National Research Council (NRC) proposes a project that will attempt to develop a framework for action by policy makers seeking to support and promote democratic processes in the United States at local, state, regional, and national levels.⁹ By examining the role that information technology and the Internet can and should play in the processes of democracy, the project will focus not on specific policy actions that should be taken, but rather on questions that should be asked by policymakers when trying to choose among a variety of policy options.

Note that this project is not intended to focus on the narrow question of what types of technology are appropriate for the conduct of elections (the primary emphasis of the Unisys and MIT/CalTech efforts), or even on processes associated with elections per se (the primary emphasis of the Century Foundation effort), but rather on broader questions raised by the increasing ubiquity of technology.

Also, recognizing the "too early to study, too late to study" dilemma often confronting NRC program officers, and the difficulties of developing an informed national conversation about this subject, the timeline of this project is constructed in a way such that a substantial amount of material relevant to the public debate can be made available to the public long before a final report of the NRC is issued.

Policy Context

Democracy plays a central role in American political life. Although democracy has been realized and interpreted in different ways since the nation's founding, one of the most constant elements has been the aspiration for an informed, engaged populace; the demand for education, and the attendant freeing of minds, underlies the U.S. protections of the freedom of speech, for example.¹⁰ The Internet presents both promise and peril in the quest for an informed public. Clearly, it is a new and high-volume source of information, and it accelerates the flow of information that varies widely in quality—sometimes intentionally so, as the proliferation of parody and attack/criticism Web sites illustrates. Of course, the mere availability of even "good" information is no guarantee of its constructive impact. Nor is there consensus on how to measure "good citizenship" in terms of skills, knowledge, attitudes, and/or behaviors.

⁹ "Democratic processes" should be construed broadly rather than narrowly: thus, while voting is an essential component of such processes, attention will also be devoted to how campaigning, campaign financing, political parties, grassroots organization, public debate and discussion, civics education, information intermediaries, and communication between policymakers and the public are and can be affected by the Internet and information technologies. (Note that one dimension of any project in this area is to define the democratic processes of interest and importance.) Moreover, the civic engagement that underpins democracy involves much more than voting behavior alone. It includes many ongoing activities, such as attending community meetings, keeping up with news and issues, talking with people who are also informed, having ideas for improving the quality of life, and working to bring about positive change. The Internet is important because it enables interested individuals and organizations to engage in such activities without being physically present at a particular site.

¹⁰ Meiklejohn, Alexander. 1948. *Political Freedom: The Constitutional Powers of the People.*" Harper & Row, New York.

For those who choose to engage in the democratic process through the Internet, the amount and availability of a variety of records, statistics, and other information about officials, programs, and so on has increased dramatically; it has become easier to learn about issues and public figures and to obtain and complete forms, tax filings, and so on. As a conduit for information, the Internet has the potential to reinforce the trend of the last 30 years toward more open government, through open meetings and access to records of such meetings, or access to official documents under the Freedom of Information Act, for example. Opportunities to participate in government processes have proliferated, and the Internet expands the potential well beyond those who can participate in a face-to-face, on-site way. At the local level, entities of various kinds have flourished, drawing typically on volunteers and often bypassing local institutions to empower new constituencies.¹¹ And, it is clear that ballot propositions, recall elections, and opinion polls have become important elements of the policy-making process, although it can be argued that the increasing use of such elements points to the failure of today's representative democracy rather than its success.

It may be easiest to see the above developments in the institutional context of the executive branch of government, where there are entities that generate considerable records, forms, data, and so on. Next in level of activity may be the legislative branch, where information about members and pending and completed legislative action are becoming more available online. A clear third seems to be the judiciary branch, where information technology provides administrative support, but ongoing interactions with the public are not emphasized as they are in the other branches.¹² Because the use of information technology is changing in all three branches, it is difficult to assess the total impact on the overall system of government, but it is important to monitor and understand the balance among the executive, legislative, and judicial functions.

Notwithstanding increasing flows of information, there are questions about whether, how, and when individuals will engage in civic activities. Unlike early philosophical notions of direct democracy, which presuppose universal engagement, representative democracy adds a layer of indirection to the potential participation in government institutions for most citizens, and the evolution of interest groups of varying types further complicates the picture. Interest groups, like individuals, are clearly experimenting with the Internet, and their efforts raise questions about not only interest groups, per se, but also the evolving role of journalism and the interaction of groups, media, and the state. For example, listservs and electronic mail (e-mail) facilitate the mobilization of people who share concerns and perspectives, in contrast to the broadcast mode of the mass media, and they accelerate the pace of information flows, sometimes to the detriment of accuracy. The Internet enables the operation of millions of Web sites that typically

¹¹ For example, at the August 3-4, 2000, CSTB/DBASSE Digital Divide and Digital Democracy meeting in California, Morris Fiorina, senior fellow at the Hoover Institution and professor of political science at Stanford University, presented a short historical overview of the increase of new constituencies and advocacy. According to Fiorina, "At the local level, the watchword of the great society was maximum feasible participation—want[ing] to bypass existing power structures and empower new constituencies in the cities. There has been a proliferation of local bodies in the United States, boards of all kinds made and filled on a volunteer basis. . . . The advocacy explosion refers to the huge increase in interest groups in the country. . . in the number of formal groups and organizations in the last 30 years. [Examples are] increased use of propositions. . . elections are increasing around the United States. . . [and there has been a] proliferation of polls. . . Polls were almost non-existent in the newspapers and so forth until about the late '60s."

¹² Other impacts are possible in the context of the judicial branch of government. For example, person-to-person or information-seeking interactions via the Internet may affect citizens as members of juries, and there are experiments in leveraging the Internet as a mechanism to expedite dispute resolution and popularize information about the legal system for self-help.

can be viewed by all, but actually are viewed only by those who seek them out or stumble upon them.

Today, when the Internet is used for political organization, it is used in a comparatively passive manner. That is, to a large degree, the Internet is used for the same purposes as traditional media: one-way dissemination of information from those seeking to shape public opinion to the citizen (and/or ostensible voter). Of course, a key feature of the Internet is its support for bi-directional communication, but to date, the return channel—from citizen to opinion shaper or policymaker, or even from concerned citizen to concerned citizen—has not played a prominent role in politics (except for its use in grassroots issue advocacy). Also, to date the Internet has been used primarily by a self-selected subset (albeit a growing one) of the population, making its reach smaller than that of traditional media.

The notion that technology can both cause major changes in democracy-relevant information flows and disappoint some who have idealistic expectations is not new. For example, consider Alexander Meiklejohn's critique of commercial radio and "free" broadcast:

It seemed possible that, amid all our differences, we might become a community of mutual understanding and of shared interests. . . . but never was a human hope more bitterly disappointed. The radio as it now operates among us is not free. Nor is it entitled to the protection of the First Amendment. It is not engaged in the task of enlarging and enriching human communication. It is engaged in making money. . . . The radio, as we now have it, is not cultivating those qualities of taste, of reasoned judgment, of integrity, of loyalty, of mutual understanding upon which the enterprise of self-government depends. On the contrary, it is a mighty force for breaking them down. It corrupts both our morals and our intelligence. And that catastrophe is significant for our inquiry, because it reveals how hollow may be the victories of the freedom of speech when our acceptance of the principle is merely formalistic. . . . It is misinterpretations such as this which, in our use of the radio, the moving picture, the newspaper and other forms of publication, are giving the name of "freedoms" to the most flagrant enslavement of our minds and wills.¹³

More recently, others, such as Ithiel de Sola Pool, have speculated that computer networking would be more successful than radio in contributing to society, especially in countries where information flow is more restricted than in the United States, and that this technology would alter the balance of power through new flows of information.¹⁴

If this occurs, then it may help mitigate concerns that people in general have diminishing discretionary time for coping with civic information and a diminishing propensity to participate in communal activity of any kind.¹⁵ But others have begun to argue that the Internet does not seem to motivate more or better civic engagement, although even they acknowledge that little is really understood about those who participate in the civic space at all, let alone the Internet quarters within it. This lack of understanding may reflect the larger context: based on polls and

¹³ Meiklejohn, *op cit.*, pp.87-8.

¹⁴ Pool, Ithiel de Sola 1984. *Technologies of Freedom*. Cambridge, MA: Harvard University Press.

¹⁵ Fiorina also commented at the California meeting: "In this day and age, that's not the choice we have. We have 60 percent of women in the labor force, we have people working long hours, and we have enormous demands on people, but we have notions of political participation that were generated eons ago that are simply too costly in this day and age. . ." Complementary concepts have been popularized by Putnam, whose recent book has stimulated debate about the characterization of social behavior and its implications: Putnam, Robert D. 2000. *Bowling Alone*, Simon & Schuster, New York.

surveys,¹⁶ it appears that Americans' trust in government has continued to erode, and with it the overall level of participation, according to some political scientists. Also, states that have done more to make voting more convenient (providing more options) often have lower turnout than states that have done less—a cautionary tale to those who emphasize the flexibility of the Internet as a compelling lure for fostering/promoting digital democracy.¹⁷ The early evidence may reflect the nature of the early uses of the Internet; experiments with networked simulation games, for example, suggest the potential for new types of uses that may shape new behaviors.¹⁸

An issue in the American context is how notions of race, ethnicity, and gender may shape, and be shaped by, the interaction of the Internet and civic processes. Differences among social groups, along these and other dimensions, are typically captured in discussions of the "digital divide," which has been measured with respect to Internet connectivity and use, per se, ownership and use of computing equipment, and specific applications (e.g., for education).¹⁹ Differential access to Internet connectivity and different patterns of use among various races, ethnicities, and genders may promote or detract from their engagement in the processes of democracy. Equally important, the Internet may have an impact on social constructions of race, ethnicity, and gender that results in greater cohesion and/or greater fractionation in group identities and political agendas. How the Internet may affect the willingness and ability of different groups to participate in, or support, political organizations is not understood, although nonprofit organizations that focus on specific groups are observed to be leveraging the Internet in targeting various racial and ethnic groups and women.²⁰

¹⁶ National Election Studies (1958-96); Washington Post (1985-99); and Pew (1997-98), as reported by the National Opinion Research Center, February–April 1973-1993; and surveys by the National Opinion Research Center – General Social Survey, 1990-1996 combined and 1980-1986 combined, as reported by *The Public Perspective*, June/July 1998.

¹⁷ U.S. Census Bureau. 2000. "Voting and Registration in the Election of November 1998," *Current Population Reports*, U.S. Department of Commerce, August. Furthermore, Curtis Gans, director of the Committee for the Study of the American Electorate (CSAE), supplied the following data to support this claim: "The CSAE has been conducting a running spreadsheet after each election since 1990. We aggregate the states that have early voting, no-fault absentee, or both (three spreadsheets and their turnout percentages in each election and the preceding election). On the bottom we aggregate the states that have not adopted the procedure(s) in question and their turnout. The result in every case has been that the states that adopted these procedures in the aggregate (and with the occasional individual state exception) have worse performances than the states which did not – in years of decline, their declines are greater than the states that did not adopt those procedures; and in years of increase, their increases are lesser in the aggregate. Furthermore these states, prior to the adoption of these procedures, had better turnout than those that never adopted those procedures."

¹⁸ The Markle Foundation supported game experiments aimed at understanding health policy and stimulating political involvement in the mid-1990s.

¹⁹ Race, ethnicity, and gender measurements have proven volatile, in part because of efforts to help lagging groups catch up and in part because diffusion occurs naturally over time, and it is difficult to pin down enduring patterns. The most recent study from NTIA reports that Blacks and Hispanics still lag behind other groups in Internet access and household penetration rates, although they have shown "impressive gains...Black households are now more than twice as likely to have home access than they were 20 months ago, rising from 11.2% to 23.5%. Hispanic households have also experienced a tremendous growth rate during this period, rising from 12.5% to 23.6%." See NTIA. 2000. *Falling Through the Net: Toward Digital Inclusion*, U.S. Department of Commerce, October.

None of these changes—in institutions, the sense of community or civic engagement, or the technology base—is unfolding universally. The question of uniformity (or lack thereof) across the political and social landscape evokes issues of geography. In fact, another dimension in which differences and interactions are important is geography: there is a range of levels of activity related to the Internet in municipalities, states, and sub-state and multi-state regions, and at the federal level, where “e-government” and “digital government” activities have been highly publicized.

Technical Context

There is a proliferation of information technology designed for individuals that is associated in some form with the Internet. Not only are PCs becoming more common, but also smaller and more portable computing devices abound, portable and wireless phones with some kind of data capability enhance mobile activity, and video and audio capabilities have been extended beyond the television and telephone to a wider variety of devices that can be controlled by individuals. Ordinary citizens now have access to powerful technologies (e.g., electronic publishing) that were available only to corporations and specialists in the recent past.

The popularization of computer-based video technologies (along with advances in virtual reality and telepresence, which can provide a greater sense of involvement for individuals remote from a given physical-space interaction) presents opportunities for real-time (and stored) access to meetings and speeches. The economics of these technologies continues to raise questions about who can have access and with what level of quality, as current debates about access to broadband service attest (cf. debates over effective public-access technology as an alternative for those lacking appropriate personal technology). Of course, there are also questions about who wants and would use this access, when, and why, the answers to which will influence the nature and timing of technology development and deployment. Overall, this information technology-rich context raises many questions about social impacts, which in turn shape the implications for democracy.

The proliferation and networking of personal devices presents security challenges—namely, how best to protect the confidentiality, integrity, and availability of both sensitive information and the systems used to transmit it. (Consider, for example, the chaos-creating potential of unauthorized parties breaching security for a Presidential election conducted over the Internet, when the related systems are recognized as vulnerable not only to a variety of mishaps but also to mischief,²¹ and the challenge of creating an audit trail when there are no physical artifacts to examine, as in the November 2000 manual ballot recounts.) A related concern is how to preserve anonymity: the United States has a tradition of protecting anonymity in political speech (extending to votes), but efforts to protect identities in e-mail systems have been dogged by systematic attacks by parties bearing some hostility to anonymity.²² The players

²⁰ The Census Bureau, in announcing its “Voting and Registration in the Election of November 1998,” (part of its *Current Population Reports*), issued a trio of news releases reporting that the number of Hispanic, African American, and Asian/Pacific Islanders registering and voting is growing, although overall voter turnout has been falling. See U.S. Department of Commerce News. 2000. “African Americans Defy Trend of Plunging Voter Turnout, Census Bureau Reports, July 19; U.S. Department of Commerce News. 2000. “Number of Hispanics Who Vote Up ‘Sharply,’ Census Bureau Reports, August 29; and U.S. Department of Commerce News. 2000. “Number of Asian and Pacific Islanders Casting Ballots Up ‘Significantly,’ Census Bureau Study Says, August 29.

²¹ Computer Science and Telecommunications Board. 1999. *Trust in Cyberspace*. National Academy Press, Washington, DC.

and processes of government and politics are popular targets for those opposed to specific individuals, programs, and decisions (or to government at all); tactics may include, for example, vote fraud as a way to disrupt an election or interfere with political speech. Technology both augments the potential for such mischief and generates new tools for responding to it.

In addition to the economic dimensions of access, often bundled into the term “digital divide,” there are physical dimensions. To be truly supportive of broad participation in the civic space, information technologies must support what some call universal access—usability by people regardless of their physical, cognitive, language, and other key differentiating abilities. These concerns often are referred to in aggregate as human-computer interaction, and there are many questions about interfaces for users, portability and adaptability of technology, and so on. A related issue is usefulness; technology can contribute to usefulness inasmuch as it provides tools for finding, evaluating, and making use of the information that is so abundant on the Internet. Searching and integrating data across different formats, and indexing and cataloging information in different media (text, audio, and video), are technical challenges that are amplified by preferences for results that are free of bias (or tied to disclosure of bias). Meanwhile, intellectual property (copyright) concerns may shape the terms and conditions under which some information is available and can be used. Finally, the rise in Internet-based civic discourse raises questions about preservation of a historical record: how to archive and preserve online information is a vexing challenge that has already emerged in other contexts.

²² See, for example: Mazières, David and M. Frans Kaashoek. 1998. “The design, implementation and operation of an e-mail pseudonym server.” *Proceedings of the 5th ACM Conference on Computer and Communications Security* (CCS-5). San Francisco, California, November, pp. 27-36.

Plan Of Action

Statement of Task

The project will develop an understanding of what a responsible policymaker should know about the impact of the Internet and information technology on democratic processes. In particular, the final report should help policymakers ask the right questions about commercially driven Internet and information technology applications that affect the democratic process, and, equally important, help them understand and evaluate the answers offered by various stakeholders. In addition, the report is intended to help policymakers be more proactive in their thinking and conceptualization of how the Internet and information technology can support and enhance democratic processes, extending perhaps to suggestions for new technology development and legislative initiatives (as appropriate).

Expertise Required

The project would be undertaken by a study committee appointed according to NRC procedures. Based on the series of exploratory meetings in mid-2000, it seems appropriate to bring together a diverse group of experts in relevant information technologies (e.g., networking, security, databases and information retrieval, human-computer interaction, electronic publishing), who would be balanced by political scientists with expertise in government processes at different levels, sociologists, psychologists, legal scholars, and economists. Also important would be expertise in social science data collection and measurement (e.g., a statistician or quantitative political scientist) to help judge the validity of the information brought to the committee and to offer suggestions when the committee considers future research designs or monitoring systems.

This project would be conducted under the auspices of the NRC by the Computer Science and Telecommunications Board (CSTB, which brings to the table insights into technical trends and impacts) and the Division on Behavioral and Social Sciences and Education (which brings insights into political and social processes). Recognizing that technology is not deterministic, this intellectual partnership is interested in both how political and social processes can influence the development of technology--ideally to be more effective--and the reverse, that is, how technology can affect political and social processes.

Preliminary Work Plan

The NRC will assemble a study committee of approximately 12-14 members with expertise in the areas outlined above. To provide a foundation for its analysis, the committee will examine how Americans currently use information technology to participate in the democratic process—which technologies are used under what circumstances, for what types of political purposes, and at what levels. Through briefings, testimony, and public outreach (e.g., public forums in the fact-finding stages), the committee will attempt to address issues that relate to different dimensions of the democratic process:

- Voting. In the wake of the 2000 presidential election, many have called for replacing punch-card voting technology with Internet or other information technology-based voting systems. What is the evidence that such voting methods would actually increase participation in elections? How do the security, reliability, and trustworthiness of such systems compare to that of "low-tech" voting systems? What are the issues surrounding the maintenance of information technology-based voting systems over a long period of time while technology is changing rapidly? (Note that this question is particularly important for commercially

developed proprietary systems that may not be amenable to public scrutiny.) What should be done about Internet-based "vote-swapping"?²³

- Political campaigns. Today's political campaigns are a mix of "official" campaigns controlled by candidates and unofficial (and formally unrelated) "informational" campaigns conducted by supporters of those candidates. Because the Internet reduces the cost of large-scale access to potential voters, anyone with a web domain name and/or an e-mail address can be a publisher. The Internet has encouraged the proliferation of politically oriented web sites established by private citizens that seem to flout Federal Election Commission (FEC) rules, raising questions about whether these rules need to be reinterpreted or adapted.²⁴ In the Internet environment, how should campaigns be regulated? How and to what extent should FEC regulations (originally established to regulate traditional media) be adapted to the Internet? How and to what extent should regulations be imposed on "informational" campaigns that are ostensibly non-partisan but in fact support particular candidates, while respecting free speech rights?
- Information intermediaries for the public. The Internet enables unprecedented flows of information to voters, thus raising questions about how people will interpret, manage, and evaluate this (over)load of information. Traditionally, intermediaries such as newspapers have provided an editorial function that has helped voters cope with the information management task. How can new intermediaries be developed to cope with information management in the Internet age? What is the role of such new intermediaries? How should voters be encouraged to use such intermediaries? How can misleading or inaccurate information be identified and any bias made known?
- Information channels and intermediaries for candidates (and incumbent elected policy makers). The Internet affords opportunities for easily obtained broader input, including online town meetings on specific topics with selected constituents. Such conduits may provide a useful counterpoint to advocacy messages and information delivered to candidates by various organized stakeholder and special interest groups. What are such alternative channels for obtaining information? Under what circumstances is any given channel more or less effective?
- Public debate and discussion. A reflective voting public that is well informed on the issues is the ideal of democratic participation. Because it enables easy bi-directional communication, the Internet could provide the technical underpinning for a much larger degree of public debate and discussion than has existed to date. What mechanisms would successfully exploit the two-way communications capability inherent in the Internet to stimulate public debate on important issues? How could the public be encouraged to participate?
- Grassroots organization. In the past, many grassroots organizations have been geographically organized. The Internet makes communication across large distances as

²³ Voteswap 2000 was an Internet-based software program developed to broker a vote swap between Gore supporters in Republican-controlled states with Nader supporters in swing states to garner an electoral win for Gore while securing a 5% win for the Green Party, which would entitle that party to federal funds in the next election. On October 30, 2000, Voteswap 2000 posted on its web site that it had ". . . just received word from the California Secretary of State that offering to "broker the exchange of votes" is a violation of California state law. Therefore we have turned our software off in order to be in compliance." See <http://www.voteswap2000.com> for further details.

²⁴ Cwiklik, Robert. 1999. "Web Soapboxes Run into Rules for Old Media," *Wall Street Journal*, August 11, p. B1, B19; Rodger, Will. 1999. "Net Election Stumping Runs Afoul of Laws," July 29.

easy as communication across small distances; hence, questions arise about the meaning of community. To what extent do people identify with local communities as the focus of their political activities? What defines "local"? How do people engage with cyberspace neighbors and how do these interactions differ from those with geographical neighbors? Researchers at Blacksburg Electronic Village have discerned that civic engagement is enhanced by the Internet only when there is a predisposition towards community involvement, and that the Internet does not effect civic interest among those who have evinced none and are not predisposed to be involved in their community:²⁵ Under what circumstances can community involvement be encouraged?

- Civics education. An important element of democracy is the education of citizens about the democratic process—how it works, how to understand it, how to participate in it. To the extent that the presence and exploitation of the Internet alters the process, civics education should reflect those key changes. What should be the content of civics education in the Internet age? What skills are necessary for effective engagement and participation in tomorrow's democracy?
- Technology. Today's Internet and information technology-based political applications are essentially uses of technology to support pre-Internet political processes. But given a different vision of democratic processes in an Internet age, what applications should be developed? Who should develop them? Assure their reliability and trustworthiness? What are the roles of the public and private sectors in such development? What products would help to improve participation and engagement?

The committee's analysis of the above issues will involve gathering information and perspectives to answer the following questions: What are the implications of key trends and interactions? What phenomena need to be measured, and how, to foster greater understanding and better decision making? What new laws and public policies might be desirable to foster positive impacts of the Internet on the civic sphere and encourage the most beneficial directions in the development of technology? How can the design of technical mechanisms be improved to foster civic activity, and what are the implications of alternative designs for civic activity, institutions, and politics? How much confidence can we have in the existing knowledge base, and what types of social science and technical research questions emerge?

Two additional issues that cut across all the items listed above will also be addressed. The first is that of access to and participation in a democracy that is differentiated across socio-economic status, race, and gender. Answers to the questions above, as well as the questions themselves, may differ depending on the socioeconomic status, race, or gender of the people involved. To take the most obvious example, access to the Internet is not equally distributed among all of these groups (the so-called "digital divide"); what are the consequences of uneven access on democratic processes set up for an Internet age? A second example: women and men may well use the Internet differently, and also have different notions of community. How should Internet and information technology-based applications support different styles of usage?

A second important point concerns the unit of analysis. Specifically, national campaigns for President obscure a very basic feature of the political system: the role of states and local communities. Some questions are more appropriate for discussion in the context of the nation, whereas others may have distinctly local flavors and spins. Moreover, it is likely that state and

²⁵ Kavanaugh, A. and S. Patterson. 2001. "The Rise and Fall of Internet Use: Social Networks and Community Involvement," *American Behavioral Scientist* (forthcoming) November; and Patterson, S., and A. Kavanaugh. 2001. "Building Community Networks: A Test of Critical Mass Theory," *The Electronic Journal of Communication*, (forthcoming) January.

local decisionmakers (both inside and outside government) may face issues related to Internet and information technology applications sooner than those operating at the federal level; understanding the relationships among these different decisionmakers is an important dimension of the analysis.

The committee will convene in seven meetings during the course of the study to solicit input from outside parties, deliberate its findings and recommendations, and prepare its final report. The budget provides for extensive input to be sought from a wide range of public interest groups and other stakeholders. For example, the project will support a shared public space for discussion; commission scholars to author white papers on relevant topics; call for public input (commentary on the issues and/or contributed papers) through its web site and other, more conventional forms of outreach.

In addition, we envision conducting several workshops within the first year in conjunction with this project. The first workshop will focus on the Midwest region; a second on the Southwest United States (including California), and a third on the Mid-Atlantic states. These regional workshops will draw on state and local elected officials, senior career government workers, educators and researchers, representatives of political parties, representatives of issue-advocacy groups and other nonprofits, media representatives, community leaders, and technologists to explore the questions described above.

Workshops at the NRC are opportunities to convene groups of experts to address issues of pressing importance and to advise the deliberations of committees. Although workshops are not intended or designed to result in consensus, findings, or recommendations, presentations and discussions at the workshops help committee members enhance their understanding of the matters before them. And, because workshops are open to the public (and in particular to staff from the executive and legislative branches), the papers presented at the workshops and the discussions conducted therein are opportunities for publicly airing information useful to the policy process before the release of a final report. (Briefing books for workshop participants containing background information, commissioned papers, and papers by speakers would also be made available to interested parties.)

Product and Dissemination Plan

The results of the committee's deliberations will be summarized in a final report to be delivered to the sponsor 18-21 months from the date the contract is awarded. The time remaining in the 24-month project will be used for dissemination activities.

The final report will be subject to NRC review procedures. This full report would describe what is known by topic, building on available information and analyses, and make recommendations for enhancing positive impacts of information technology on the civic sphere. It would be made available in book form and on the Web. As is true of all NRC reports, an executive summary of the entire report will be prepared that highlights key findings and recommendations.

In addition, a variety of other publications based on the report would be developed by committee members and NRC staff. Such publications could include stand-alone magazine articles, brochures, report extracts, or video or audio programs intended for wide consumption by the general public, as well as scholarly publications that might help to catalyze further analysis and consideration.

The full report would be delivered to government leaders at all levels, the relevant scholarly community, and nonprofits and related organizations. In addition, the essential

messages of the report would be conveyed at various forums, from government advisory bodies to relevant conferences.

Workshop proceedings will be issued as interim outputs to speed the process of putting materials into the public domain. These proceedings will include commissioned papers and briefing materials that are used to inform committee deliberations, but will not include findings, conclusions, or recommendations of the NRC. Proceedings will be made available publicly as soon as possible after the workshops involved. A summary of the first workshop will be prepared that will include a synthesis of the discussions at the workshops (though, again, this will not include findings, conclusions, or recommendations that can be associated with the NRC per se). (Although such proceedings and summaries are not NRC products, the NRC will work with sponsors to develop appropriate condensations for their own use, and of course, sponsors are free to circulate these documents as they see fit.)

To hasten the release of the report, the NRC will transmit to the sponsor and publicly release the report in pre-publication form. In content, a pre-publication report differs from a final report only with respect to copy-editing details (e.g., spelling, grammar, complete references). The pre-publication report and final report are identical with respect to the analysis, findings, conclusions, and recommendations, and both are approved products of the NRC. The final report would be published several weeks after the pre-pub version.

Public Information About the Project

The NRC will post on its web site (<http://www.nationalacademies.org>) a brief description of the project, as well as committee appointments, if any, with short biographies of the members, meeting notices, and other pertinent information, to afford the public both knowledge of NRC activities and an opportunity to make comments. The web site will also include the project's ongoing record of compliance with the requirements of Section 15 of the Federal Advisory Committee Act, 5 U.S.C. App. § 15. Sponsors will be provided compliance certification(s) in accordance with NRC procedures.

Tentative Project Schedule

Month 0	Assemble and vet committee members
Month 2	Meeting 1 Briefings for the committee are open to interested parties.
Month 4	Meeting 2: Public workshop #1 for 1 day; meeting for 2 days Non-workshop briefings for the committee held during the meeting are open to interested parties. Workshop briefing books (background materials, commissioned papers, workshop papers if available) will be made available to sponsors immediately.
Month 7	Meeting 3: Public workshop #2 for 1 day; meeting for 2 days Non-workshop briefings for the committee held during the meeting are open to interested parties. Workshop briefing books (background materials, commissioned papers, workshop papers if available) will be made available to sponsors immediately.
Month 8	Workshop #1 summary (including workshop discussions) delivered to sponsor
Month 10	Meeting 4: Public workshop #3 for 1 day; meeting for 2 days Non-workshop briefings for the committee held during the meeting are open to interested parties. Workshop briefing books (background materials, commissioned papers, workshop papers if available) will be made available to sponsors immediately.
Month 11	Workshop #2 summary (including workshop discussions) delivered to sponsor
Month 13	Meeting 5: meeting for 3 days Briefings for the committee are open to interested parties.
Month 14	Workshop #3 summary (including workshop discussions) delivered to sponsor
Month 15	Meeting 6: meeting for 3 days (probably closed meeting)
Month 18	Meeting 7: meeting for 3 days (probably closed meeting)
Month 21	Meeting Report release (in pre-publication form); paperless briefings for

sponsor in advance of public release.

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| Months 21-24 | Dissemination efforts, including <ul style="list-style-type: none">• Writing of pieces for practitioners (teachers, librarians, parents, IT vendors)• Issuing final report in book form |
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Other Work in This Area -- A Broad Overview

Below are descriptions of other work in the general area of digital democracy and digital divide. No claim is made with regard to completeness of this list.

The National Telecommunications and Information Administration

The National Telecommunications and Information Administration (NTIA), an agency of the U.S. Department of Commerce, is the Executive Branch's principal voice on domestic and international telecommunications and information technology issues. The NTIA works to spur innovation, encourage competition, help create jobs and provide consumers with more choices and better quality telecommunications products and services at lower prices. The NTIA has explored the "digital divide" (see <www.digitaldivide.gov>) by informing individuals of federal programs designed to close the digital divide, including a range of grant and loan programs and relevant reports and articles. In addition, there are direct links to other resources that provide information on private sector educational and funding initiatives.

The Aspen Institute

The Aspen Institute convenes individuals to address critical issues that confront societies, organizations, and individuals. In particular, two programs are tracking issues pertaining to digital democracy and the digital divide. The Communications and Society Program is constructed to promote decision making in the fields of communications, media, and information policy. In particular, the program focuses on the implications of communications and information technologies on democratic institutions, individual behavior, instruments of commerce, and community life. In recent years, the Communications and Society Program has focused on Internet policy, electronic commerce, information literacy, digital broadcasting, international and domestic telecommunications regulation, journalism, the role of the media in democratic society, and the impact of new communications technologies on democratic institutions and practices.

The Democracy & Citizenship Program's mission is to identify and implement ways to help America's representative democracy work better. The program's activities aspire to rebuild key ingredients of a healthy democracy: trust in and among the participants in civic life (citizens, elected leaders, the media), and understanding of the basic structure and principles of representative government. Two other initiatives with closely related missions are also part of the Democracy & Citizenship Program: the Global Interdependence Initiative and the Faith and Public Policy Program.

The Benton Foundation

The Benton Foundation's general mission is to help realize the social benefits made possible by the public interest use of communications. By bridging philanthropy, public policy, and community action, Benton seeks to shape the emerging communications environment and to demonstrate the value of communications for solving social problems.

As part of its mission, the Benton Foundation has created the Digital Divide Network (DDN). The purpose of the DDN is to enable and facilitate the sharing of ideas, information and creative solutions among industry partners, private foundations, nonprofit organizations and governments. Effective partnerships are being forged through this network to leverage the best ideas to reach the most chronically underserved American residents. The Benton Foundation is producing and managing DDN in association with the National Urban League. The network is aimed at a broad audience of policymakers, nonprofit leaders, foundation officers, educators, community organizers, social entrepreneurs, and industry experts.

The Markle Foundation

The Markle Foundation works to realize the potential of emerging communications media and information technology and promotes the development of communications industries that address public needs. Markle pursues its goals through a range of activities, including analysis, research, public information and the development of innovative media products and services. Among its foci, Markle maintains a program on Policy for a Networked Society. This program aims to enhance the public voice on communications policy matters. As emerging communications technologies transform lives, core aspects of social, political, economic and legal systems are transitioning. The Policy for a Networked Society program addresses this transformative period and works to enhance the public voice in the consideration and resolution of domestic and international policies that are surfacing in this new communications environment. The program is creating a body of research and a global policy network of leaders from the academy, industry, nonprofit community and government to develop principles of regulation on critical policy issues and to represent the public interest as policies are developed and debated. The protection of democratic values, individual liberties, universal access and consumer interests are priorities of the program's activities.

The Pew Internet & American Life Project

The Pew Internet & American Life Project is endowed to create and fund research that explores the impact of the Internet on children, families, communities, the work place, schools, health care and civic/political life. The project aims to be an authoritative source for timely information on the Internet's growth and societal impact, through research that is scrupulously impartial. The project intends to release 15-20 pieces of research a year, varying in size, scope, and ambition.

The RAND Corporation

Researchers at the RAND Corporation conduct research on the introduction of advanced communication and information technologies and their effects on social contexts. In particular, RAND has produced two major studies on the feasibility and societal implications of universal access to e-mail in the United States over the past six years and is currently engaged in a study of the likely future course of the information revolution throughout world regions. RAND recently completed a project designed to define organizational needs and identify best practices for creating, managing and distributing electronic documents (including compound, multimedia and interactive documents) among United Nations organizations based in Europe, North America and South America. In previous projects, RAND has addressed factors that affect the successful institutionalization of new interactive technologies in ongoing communities of practice, examining how these innovative media influence intra- and inter-organizational structures and group processes, their impact on task performance and social outcomes, and the policy implications.

Individual Academic Researchers

Sara Kiesler is a professor in the Human Computer Interaction Institute, School of Computer Science, Carnegie Mellon University. She has conducted extensive research on electronic communication. She edited a recent book, *Culture of the Internet*. She is the primary investigator of a Knowledge and Distributed Intelligence (KDI) project called Multidisciplinary Collaboration, and co-principal investigator on the HomeNet project, a study of how families use the Internet. She is a fellow of the American Physical Society and American Psychological Association and serves on numerous national committees and National Academy of Sciences panels on social aspects of technology. She also has served as an expert witness in cases involving speech on the Internet. She received her Ph.D. from Ohio State University.

John Patterson received his Ph.D. in experimental psychology from the University of Michigan in 1979. Since then he has worked at Decisions & Designs, Inc., Bell Laboratories, Bellcore, SunSoft, Inc., and, since 1994, Lotus Development Corporation. His work includes a wide variety of research and development efforts focusing on advanced user interfaces and synchronous groupware. Within the last few years, Dr. Patterson has shifted his focus to Internet support for communities. His most recent research effort is the Carlisle Community Center, a community web site for the town of Carlisle, Massachusetts. This case study is designed to assess the value of the Internet for promoting social capital within a community.

Lee Sproull holds the Leonard N. Stern School Professorship of Business at the Stern School, New York University. She is currently director of the Stern School Initiative in Digital Economy, a comprehensive initiative combining educational programs, research, and industry partnerships. She is an internationally recognized sociologist whose research centers on the implications of computer-based communication technologies for managers, organizations, communities, and society. She has conducted research in Fortune 500 firms, scientific communities, municipalities, universities, software development teams, households, and electronic groups. In all of these settings she has documented how technology induces changes in interpersonal interaction, group dynamics and decision making, and organizational or community structure. She has been a visiting scholar at Xerox PARC, Digital Cambridge Research Lab, and Lotus Development Corporation and has published the results of her research in eight books and more than sixty articles. Dr. Sproull has held previous appointments as professor of management at Boston University and professor of social and decision sciences at Carnegie Mellon University. She holds a B.A. from Wellesley College, and an M.A. and Ph.D. from Stanford University. She is a member of CSTB, the advisory board of MentorNet, and is a former trustee of The Computer Museum.