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Electronic government and electronic civics embrace a wide range of topics. Electronic government and electronic civics include in their purview the development, use, and implications of new practices, processes, forms and interests in government and civic life occasioned by the Internet, World Wide Web and related information and communication technologies. They are concerned with individuals and the groups they form and sustain in order to bring coherence and stability to community life. At a slightly higher level of analysis, electronic government and electronic civics take account of the use and implications of the Internet for all forms of civic engagement from the development and articulation of individual and group values and interests in public affairs to the many relationships between and among communities, the polity, and the state. With respect to formal government systems, electronic government and electronic civics encompass the use and implications of information and communication technologies in all branches of government—the legislature, executive, and judiciary—as well as at all levels of government including local, state, federal, transnational, and global. The intersection of the Internet and governance spans the traditional fields and subfields of community politics and participation as well as those of political sociology, political science, and political economy.

Citizenship and Internet Voting

Civics and government in democratic systems typically rely on voting as a key mechanism of representation and choice through electoral and referenda processes. It is logical to expect that Internet voting would render civic participation more convenient and, thus, possibly increase participation in electoral and referenda politics. However, Internet voting raises a host of challenges that make it more difficult to implement than electronic commerce or

other types of electronic government applications. Internet voting systems must consistently attain security, equity, and privacy criteria that are not yet widely feasible.

A major study and workshop concerning Internet voting, supported by the U.S. National Science Foundation, reached several conclusions: Voting from remote locations such as the home or office (or remote Internet voting) would present substantial risks likely to undermine the integrity and credibility of the voting process. It was recommended that remote Internet voting should not be used widely until several social and technical issues are resolved. However, use of the Internet at polling places is technically feasible and socially neutral in its implications. Internet-based systems could be developed that would tally votes quickly and accurately. Election officials could maintain control over such systems and the voting process itself to ensure privacy and security. A third option, Internet voting at kiosks which could be located more widely than traditional voting sites, for example, at shopping malls or at public libraries, represent an extension of centrally located Internet voting systems. Although a greater number of voting sites multiplies some types of risk, Internet voting by kiosk represents a likely intermediate step between remote Internet voting and the use of the Internet to support traditional polling locations.

Internet voting raises multiple research questions. It is not known, for example, what the effects of Internet voting might be on civic participation, on the credibility of the electoral process, on the role of deliberation and representation in government, or on political campaigns. A host of technical issues require further research. These take in the need to maintain security, scalability, secrecy, and reliability. It is not clear what effect various interface designs might have on the choices voters make when voting. Further, socioeconomic differences may correlate with different Internet voting patterns implying that research would have to take account of

socioeconomic categories. Finally, legal frameworks that regulate jurisdictions, voter fraud, liability for election system failures, and absentee voting would require modification as the underlying technologies for voting change.

Electronic Government: Local, State, and Federal Developments

The development of the Internet and the World Wide Web during the early 1990s led governments in most advanced industrial countries to begin to develop e-government. In its most simple form, e-government refers to the availability of government information and some public services over the Internet. At a more complex level, government officials and policymakers use information and communication technologies to restructure government agencies, operations, and relationships across agencies and with nongovernmental organizations. Agencies increasingly have made information available on-line including laws, rules and regulations as well as a vast array of information regarding topics of immediate interest to citizens such as retirement, disability, health, education, housing, agriculture, transportation and the environment. In addition, interactive public services increasingly are available including tax filing for individuals and businesses, licensing, registration, and permitting.

State and local governments typically innovate before larger central governments. However, local and state governments vary dramatically in the extent of electronic information and services available primarily because such governments range from small, poor, rural communities with little access to the Internet to large metropolitan areas with extensive infrastructure and a range of conditions in between.

A well developed local government web portal illustrates the current state-of-the-art of electronic government and electronic civics in large municipalities. The City of Indianapolis and Marion County website (http://www.IndyGov.org) provides extensive government information

online including the city and county budgets, election information, and city and county ordinances. The portal allows users to search for and pay parking tickets online; report abandoned vehicles, trash pickup problems, pot holes, sewer problems and other complaints online; file taxes; calculate child support; research permits; and access zoning and other maps. The geographic information systems (GIS) applications available on the website supply several maps including the location of bus routes, family centers, fire stations, police districts, recycling sites, sports facilities, and polling places. The City of Indianapolis and Marion County interactive portal affords access to civil and criminal court records, permits, police and sheriff reports, and property information including parcel and owner histories. To promote and enhance community and civic engagement, the IndyGov.gov website enables online access to volunteer opportunities in Central Indiana through a service called VolunteerMatch Indianapolis!, a partnership of the United Way of Central Indiana and the City of Indianapolis.

Although examples of impressive electronic government web portals are growing, the average level of information and service on state and local government websites remains modest. For example, the mean number of interactive government services available on state government websites in the U.S. was only four in 2000. The most common service available online at the state government level is state government employment information allowing computer users to find state government jobs online. In 2000, 32 state government websites included such information. In some cases, these websites allow citizens to apply for jobs online as well. Twenty four states allow individual citizens to file personal income taxes online. A small, but growing, number of other services available in a smaller number of state governments include motor vehicle registration and renewal, ordering vital records (marriage, birth, and death

certificates) online, searchable sex offender registries, and application and purchase of hunting and fishing permits and licenses.

State governments with the most highly developed websites typically have organized portals that conform to the interests of citizens rather than the organization of state government agencies. The State of Virginia website invites users to create a customized homepage personalized according to information and services of interest to a citizen. The State of North Carolina developed three government portals focusing on citizens, businesses, and government employees. Many governments, particularly those at the federal and state levels, have grouped information and services even further by client type, for example, by organizing information and services of interest to students, senior citizens, and small businesses. In the mid-1990s, some large government agencies began to develop "virtual agencies," or cross-agency web portals organized by client type rather than agency. The U.S. federal government first organized students.gov, seniors.gov, and business.gov, to provide citizens with a single point of contact with government. There are approximately 30 virtual agencies in the U.S. federal government. A single portal, FirstGov (http://www.firstgov.gov), connects to all Federal agency Web pages and is one of the largest repositories of Web pages in existence.

The range of interactive services and information in electronic government websites increases as policymakers innovate using information and communication technologies. Federal government websites in the United States allow taxpayers to file returns online. In 1999, for example, 20,000 citizens used credit cards to pay their federal taxes over the Web. The Environmental Protection Agency provides environmental and regulatory data to the public over the web and estimates that it saves approximately $5 million annually by digital provision of information. Public health agencies at the community, state, and federal levels have access to

previously centrally held information through the Information Network for Public Health Officials (INPHO) housed within the Centers for Disease Control and Protection in the U.S. Public Health Service.

Internationally, direct communication and networks of policymakers from agencies worldwide who communicate via digital means have replaced some of the traditional communication functions of the State Department and other international agencies. Among the growing number shared databases used by global networks of government actors is the Nuclear Suppliers Group Information Sharing System (NISS), a secure system within which 32 member countries of the Nuclear Suppliers Group share information regarding movements of proliferation-sensitive equipment, materials, and technology. Denial actions of one Nuclear Supplier Group member country are rapidly disseminated to other members reducing the possibility that rogue states can obtain regulated nuclear materials. These and other global government networks have heightened transnational communications and governance.

The Relationship of Electronic Government and Electronic Civics to Community

One of the foremost Twentieth Century democratic theorists, Robert Dahl, observed: "That the character of a regime and the qualities of its people are somehow related has been a commonplace of political philosophy since the Greeks" (1989, 91). Aristotle claimed that the effectiveness of a democracy depends upon the socio-economic development of the polity. Plato observed in *The Republic* that the cultural characteristics of communities are reflected in their institutions of governance. As communities develop and change characteristics in the process of using the Internet to organize and communicate, one should expect an influence on the institutions of government and on civic affairs.

In theory, the potential of information and communication technologies to foster community and civic engagement is revolutionary. Yet the details of such a revolution are open to debate. Access to digital information could lead to citizens and communities that are highly knowledgeable of civic affairs, deeply engaged in discussion and communication of their ideas and interests through on-line communications channels, discussion groups, and electronic mail to elected representatives and other political officials. The Internet could facilitate mobilization of interest groups and communities of interest by lowering the costs of communication and coordination. As a tool of community groups, political parties, and other intermediate political bodies the Internet and related technologies should make it easier to communicate information, to receive and integrate opinions and ideas from group members and constituents, and to connect individuals with one another and with sources of important information regardless of its physical location.

Some observers of political life have claimed that the Internet will usher in an era of direct democracy. Intermediate organizations such as parties and interest groups might be bypassed in order for citizens to communicate directly with elected representatives. In theory, it would be possible to hold referenda, or direct voting, by citizens on many more questions of government that are currently deliberated by representatives in legislatures. Public participation, perhaps organized at the neighborhood or community level, might be vastly energized and used more strongly to influence elected and appointed government officials. The results of such direct voting could be displayed by neighborhood or precinct, thereby increasing the transparency and, as a consequence, the accountability of government to its citizens.

But others argue that information and communication technologies have led to an increase in the divide between rich and poor with related unequal effects on civic engagement

and democracy. The Internet, by introducing digital communication to civic life, may have layered a digital divide over the inequalities that plague most of the world's political systems. Those citizens without ready access to the Internet or with little or no literacy skills lack the ability to read critically, to navigate on the World Wide Web, and to express themselves in writing articulately. As a result, such citizens may become more deeply alienated from the political process and thereby more marginalized from civic life due to Internet.

Some have claimed that the digital divide may operate similarly on a global level to increase the gap between rich and poor countries. If this were true, it might also increase disparities of political power and influence the deliberations within global and international forums. It is in such forums that the processes and standards used by financial, trade, and other economic systems and deliberations in world health, agriculture, and scientific organizations take place. It is not yet known whether the disintermediating effects of the Internet and the ability of policymakers from less developed countries to mobilize using communication and information technologies form a sufficient counterweight to arguments that a digital divide has widened existing inequalities. Whereas many descriptions of discrete events and innovations have been recorded, little systematic research is available to shed light on claims.

Much more is known about the effects of the computer-based communication on trust and social capital, building blocks of community and governance. Substantial empirical evidence suggests that trust, social networks, and communities largely are built face-to-face and only supplemented by digital communication. Computer-mediated communication lacks the richness of face-to-face communication which encodes within it facial expression, body language, and verbal intonation and expression. All of these vital elements of communication are absent from text messages. Moreover, the ease with which information can be made

available on the World Wide Web may have led to information overload. Multiple possibilities for information gathering and extensive information repositories may numb, rather than energize, civic engagement and produce confusion rather than knowledge.

More troubling, a proliferation of websites whose origins and purposes are murky has rendered the Internet a confusing place for political information gathering. For example, a website that claims to represent a political candidate may, in fact, have been produced by the opponents of a political candidate or by those seeking to discredit the candidate. Such websites are now common during elections. Websites that give the appearance of impartiality and government authority have multiplied in policy areas of contention such as environmental protection, reproductive rights, and taxation. It is difficult for users to ascertain the credibility and legitimacy of many websites, particularly those that provide information concerning politically contested issues.

Some observers assert that the Internet is inherently democratizing and a force that will increase the responsiveness and transparency of government to citizens. Yet others assert that the Internet may serve further to empower states against citizens. This debate raises questions regarding the ownership, control, and governance of the Internet. In developing countries, possibilities to use wireless communication systems hold promise to hasten the pace of economic and political development and to strengthen connections between developed and less developed nations. As a critical adjunct to globalization, the Internet has led to a proliferation of transnational governance systems in finance, law, and regulation, to name but three domains. The growth of transnational governance and epistemic communities has fostered serious debate concerning the structure and location of governance systems that overlay and mediate the activities of sovereign states. These multi-level elements of electronic government and

electronic civics imply the vast range of the topic and the multitude of cross-cutting influences that make simple predictions difficult to support.

There is growing evidence that wealthy, powerful organizations such as communications firms, multinational corporations, dominant political parties, and governments themselves can marshal the resources of the Internet to capture the attention of users of digital information. The results of search engines, the ability to purchase visibility on popular websites, and the financial power to produce attractive, visually compelling websites make the Internet a tool more easily used and controlled by organizations with financial resources and expertise than by those who lack the ability to produce websites that can gain visibility with the use of commonly used search engines. Research on the global governance of the Internet is a key priority with important implications for all levels of government and civic engagement.

The importance of information and communication technologies for government and civic affairs is without dispute. Yet it is not possible to predict the future of governance as a direct consequence of the Internet. Unpredictability stems from the variety of purposes for which information and communication technologies might be used in governance. For example, technology may be used for surveillance, monitoring, control, and disinformation as easily as it might be leveraged to promoted transparency, accountability, and access to information that promotes human development. The purposes of individuals and governments as well as the laws regulating permissible uses of information and communication technologies vary greatly among societies.

The Future of Electronic Government and Electronic Civics

The future direction of electronic government and electronic civics lies beyond the mere provision of government information and services on-line. In contrast, it lies in the political uses

to which communities and interest groups put the Internet and in a long series of behavioral and structural changes in government. Of great importance are modifications in relationships among government agencies across local, state, federal and national jurisdictions and between public, private and nonprofit organizations. Currently, institutional arrangements such as the budget process, oversight functions, and the committee structure within legislatures reinforce agency autonomy and operations at the level of a single agency or an agency working in partnership with private sector or nonprofit sector organizations. Such institutional arrangements are likely to be modified as policymakers respond to communities of interest, strengthened by the Internet, that cross agency boundaries. If it is the case that some types of communities are able to use information and communication technologies more powerfully than others, it may be that technically proficient communities gain political influence over those with less adroitness in cyberspace.

Finally, information and communication technologies will advance in ways that make the future of governance even more unpredictable than it currently appears to be. Potential near-term technological changes include greater use of wireless communication, personal digital devices, instant messaging, ubiquitous computing, and increased reliance on visual communications media. As these next-generation technologies become more dominant compared to personal computers, bulletin boards and chat rooms, and computer-mediated text communication, they are likely to exert as yet unknown effects on communities. As a consequence, changes in communities and their characteristics will influence the governance processes meant to provide stability and coherence to community life.

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Further Reading

Abramson, M. A. and G. E. Means, eds. (2001). *E-Government 2001*. The Pricewaterhousecoopers Endowment Series on the Business of Government.

Barber, B. R. (1984). *Strong Democracy*. Berkeley, CA: University of California Press.

Budge, I. (1996). *The New Challenge of Direct Democracy*. Oxford: Polity Press.

Cameron, M. A. (1998). *To Walk Without Fear: The Global Movement to Ban Landmines*. Oxford: Oxford University Press.

Dahl, R. A. (1989). *Democracy and Its Critics*. New Haven, CT: Yale University Press.

David, R. (1999). *The Web of Politics: The Internet's Impact on the American Political System*. New York: Oxford University Press.

Dutton, W. H. (1999). *Society on the Line: Information Politics in the Digital Age*. Oxford: Oxford University Press.

Dutton, W. H. and M. Peltu. (1996). *Information and Communication Technologies – Visions and Realities*. Oxford: Oxford University Press.

Etzioni, A. (1993). *The Spirit of Community*. New York: Crown.

Fountain, J. E. (2002). *Information, Institutions and Governance: Advancing a Basic Social Science Research Program for Digital Government*. Cambridge, MA: National Center for Digital Government, John F. Kennedy School of Government. Report available at http://www.ksg.harvard.edu/digitalcenter

Fountain, J. E. (2001). *Building the Virtual State: Information Technology and Institutional Change*. Washington, D.C.: Brookings Institution Press.

Fountain, J. E. with Osorio-Urzua, C. (2001). "The Economic Impact of the Internet on the Government Sector," in Litan, R. E. and A. M. Rivlin, eds., *The Economic Payoff from the Internet Revolution*. Washington, D.C.: Brookings Institution Press.

Grossman, L. (1995). *The Electronic Commonwealth.* New York: Penguin.

Hayward, T. (1995). *Info-Rich, Info-Poor: Access and Exchange in the Global Information Society.* London: K. G. Saur.

Heeks, R., ed. *Reinventing Government in the Information Age : International Practice in IT-enabled Public Sector Reform.* Routledge.

Hill, K. A. and J. E. Hughes. (1998). *Cyberpolitics: Citizen Activism in the Age of the Internet*. Lanham, MD: Rowman & Littlefield.

Internet Policy Institute. (2001). "Report of the National Workshop on Internet Voting: Issues and Research Agenda." Available at http://www.netvoting.org.

Kamarck, E. C. and J. S. Nye, Jr. (2001). *Governance.com: Democracy in the Information Age.* Washington, D.C.: Brookings Institution Press.

Keck, M. E. and K. Sikkink. (1998). *Activists beyond Borders: Advocacy Networks in International Politics*. Ithaca, NY: Cornell University Press.

Margolis, M. and D. Resnick. (2000). *Politics as Usual: The Cyberspace "Revolution."* Thousand Oaks, CA: Sage.

Norris, P. (2001). *Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide*. Cambridge, U. K.: Cambridge University Press.

O'Looney, J. A. (2002). *Wiring Governments: Challenges and Possibilities for Public Managers*

Putnam, R. (2000). *Bowling Alone: The Collapse and Revival of American Community.* New York: Simon & Schuster.

Rash, W. (1997). *Politics on the Nets: Wiring the Political Process*. New York: Freeman.

Rheingold, H. (1993). *The Virtual Community: Homesteading on the Electronic Frontier*. Reading, MA: Addison-Wesley.

Schwartz, E. (1996). *Netactivism: How Citizens Use the Internet*. Sebastapol, CA: Songline Studios.

Wilheim, A. G. (2000). *Democracy in the Digital Age: Challenges to Political Life in Cyberspace*. New York: Routledge.