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TRAVELING THE GLOBAL INFORMATION HIGHWAY:
A PRIMER FOR PUBLIC ADMINISTRATORS

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Welcome to the Internet

We have entered the post-industrial information-based society. Moving information rapidly across great distances becomes imperative in today's competitive workplace as professionals realize how technology can improve communications between organizations and people. The Internet is now an exciting place to disseminate information, to communicate, to teach and to learn, and to conduct business and commerce. The Internet has been described with several metaphors. Most commonly portrayed as a as a type of "highway" system, the focus is on pathways between computers and resources available "out there" in "cyberspace" on the high speed data network and on networking, the sharing of resources among computer users. The potential for public practitioners and academics to benefit from these powerful computer mediated communication linkages are awesome.

The Internet is a vast, decentralized "network of networks" comprised of a myriad of regional nets and computers communicating at amazing speeds. Individuals access the Internet by way of regional sub-networks using either modems in their own computers (by dialing up a computer host) or direct wired dedicated connections linking their computer workstation to an organization's central computing center that serves as a switching station. Once a user is connected, the terminal acts as a workstation for the host computer, so whether a user's own computer is an IBM, IBM-compatible, or macintosh no longer matters.

Individuals should possess an electronic (email) address to participate in the Internet. Your email address provides all the information required to get a message to you from anywhere in the world. Email accounts are established by subscribing to an independent commercial service (e.g., America On-Line, CompuServe, Netcom, MCI Mail, Delphi, the WELL, eWorld: the new on-line service for macintosh users, etc.) that offers accounts to the public or by means of an organizational affiliation (e.g., the workplace, university central computer, etc.).

Tools of the Internet

The following three tools are important applications that assist users with navigating around the Internet: email, gopher, and listservs.

Email: As explained above, email is the basis for an Internet connection, as the address is how users are identified and contacted. With email addresses for the user and those with whom the user is communicating, work groups can be established and communications eased. Today, email users in fields like public administration are communicating easily and quickly across local, state, and national boundaries. What once might have taken days of "telephone tag" or letter
writing now can take literally only minutes. Group lists of email users expand this usage, allowing literally hundred of users to receive work-related messages; these group lists are established easily through the use of email utility software packages, which automate tasks such as list construction and provide email address book tools (e.g., Pine software for UNIX).

One notable email resource for public administrators is Owen Smith's (email address: osmith@aludra.usc.edu) EI-PAID (Eternally Incomplete-Public Administration Internet Directory), a listing of email addresses of mostly public administration researchers around the country. Mr. Smith, a Ph.D. student with USC- Sacramento Center, serves as the system operator. From this list of over 300 colleagues, he produces a free newsletter, called PAID NEWS, compiling contributions emailed to him and then (e.g., opinion articles, book reviews, job announcements, etc.) relayed to his email subscribers.

Listservs: Listservs are tools which formalize, automate and expand the features of email. Listservs provide a way for groups sharing an interest in a given topic to exchange messages and information between an entire group, essentially creating an electronic discussion forum. Listservs allow participants to send messages to a central address where listserv software takes over; the message is then rebroadcast to all other participants on that particular listserv. While there are listserv "owners" for each list who moderate the discussion, the listserv software automatically keeps track of all users' email addresses and forwards mail. Like the rest of the decentralized Internet, listservs are not centrally administered by anyone so listserv policies on posting to the lists, etc., are decided on a list by list basis. The usual procedure for joining a listserv is very straightforward: address your message to the listserv's Internet address and leave the "subject" line blank. In the body of the message, write the following, then send the message:

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subscribe [NAME OF LISTSERV] <yourfirstname> <yourlastname>
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Listservs offer public administrators an incredible gold mine of information sharing and learning opportunities. There are currently several recommended listservers of high interest to practitioners and academics interested in public management, policy, and planning. The following is a sample listing of just a few choice listservs for the public administration community.

REGO-L: The "Reinventing Government" Information Network is geared to public sector professionals interested in the process of making government work better and cost less (email address: listserv@pandora.sf.ca.us).

MUNEX-L: Municipal Information Exchange is geared for local governments, with particular emphasis on New York State (email address: listserv@cornell.edu).

USNONPROFIT-L: Focused on discussing issues facing non-profit organizations in the United States (email address: majordomo@rain.org). To subscribe, the command sent to this address should be: subscribe USNONPROFIT-L <your email address>

PUBADM-L: Teaching Public Administration is a listserv centered on teaching materials, methodologies, and theories of teaching public administration and management (email address: listserv@vm.marist.edu).

PUBPOL-L: Focused on graduate students, professionals, faculty, and staff in the fields of
public policy, public administration, planning, and related fields (email address: listserv@vm1.spcs.umn.edu).

PSRT-L: Specializes in political science research and teaching (email address: listserv@mizzoul.missouri.edu).

Gophers are a means for organizing and retrieving data on the Internet that allows users to access information and documents residing on a host computer anywhere in the world. Because gophers offer menu-based access to documents or publications, they are very easy to access from the user's own computer once connected to email. Internet gophers can be accessed through the simple command:

\[ \text{gopher <gophername>} \]

to connect to a particular gopher site. Or, the user's own host computer might have a gopher server, as well, which can be accessed through the command, "gopher". Users may select items from menus and submenus through the selection of a menu number option; the " / " separating different sections and titles represents different levels and choices of the menu's hierarchy. On some gophers, users may search certain databases for documents on their selected subject; on others, users may "telnet" (connect) to other systems to obtain further information. After selecting and viewing a specific document or searching for a term (by using search protocol software such as Veronica), the user is asked whether they would like to have the text emailed to them; the user can thus obtain many different reports and documents immediately from their own computer.

There are many gophers with information of interest to public administrators. Public domain information, such as federal documents, are available on several different gophers. A sampling of information of high interest to administrators available on gophers includes the following:

\textit{sunsite.unc.edu}. The sunsite.unc.edu gopher/What's New on Sunsite/ at the University of North Carolina is an excellent source for federal information. The What's New section is always a good place to start; it currently contains, for example, the Clinton National Health Security Plan, Proposed U.S. Budget for 1995, National Information Infrastructure Information, and National Performance Review (Reinventing Government) reports. By selecting Internet Dog-Eared Pages/Search-List of Lists, the user can also do a key word search for listservs of interest.

\textit{info.umd.edu}. Under Academic Resources By Topic/United States and World Politics, Culture, and History/United States/ on this gopher at the University of Maryland is a wealth of information from the federal government. Supreme Court, Current National Issues, Executive, Legislative, Federal Register, Commerce Business Daily, and U.S. Government Gophers are just some of the submenus available on this gopher. Under Supreme Court, text of actual decisions are available, while the Federal Register makes available a table of contents as well as the most recent issue. The U.S. Government gophers section allows access to other gophers within the federal government; among agencies and organizations with their own gophers are NASA, EPA, State, NSF, NATO, the United Nations, and NIH. The Current National Issues selection includes federal budgets by agency, ADA regulations, and 1990 Census data.
marvel.loc.gov. This is the Library of Congress gopher, which contains not just access to the Library of Congress On-Line Search system (Library of Congress On-Line Systems/Connect to LOCIS) but also access to federal, state, and local data and documents (Government Information/State and Local Government Information/By State) through access to 25 state gophers.

gopher.unomaha.edu. This is a new gopher, hosted by the University of Nebraska at Omaha, dedicated to public administration. Under UNO Departments/Public Administration is a menu of syllabi, working papers, conferences, forums, and ASPA Information. However, not much information is yet stored on this gopher, as it is still "under construction" but it has a great deal of potential for the future.

gopher.ed.gov. This U.S. Department of Education gopher is one example of a federal agency operated public gopher. It contains departmentalwide initiatives, official announcements, publications, and software (which all can be emailed to a user's home account).

Other Tools

The applications of new technologies to traditional forms of professional communications are spawning novel methods for information exchange and learning via the Internet. Ftp, freenets, electronic journals (ejournals) are all media which are accessible from the Internet. Computer conferencing and computer bulletin boards, many of which are accessible from the Internet, may also stand alone on their own computer hosts.

Ftp, file transfer protocol, is a process for retrieving files or documents from another computer on the Internet. Ftp has become the primary method of distribution for a large number of network-related files. The creator or author of a document can post it on one or more host computers and make it available to all network users. This allows the author to review the document at a central location, and removes the burden of distribution costs.

Ejournals, or electronic journals, while still in its infancy, hold the potential to change the traditional methods of publishing by allowing rapid dissemination and interchange of ideas. For example, the monthly newsletter Public Sector Quality Report is planning, in the near future, to list free its current table of content on the Internet, with the option of full text dissemination to its paid email subscribers. For more information on the PSQR and the Internet, contact the Editor, Vince Giorgi (email address: 74363.3644@compuserve.com; (612) 898-5058). Another ejournal application is the National Performance Review/Netresults (email address: netresults@npr.gsa.gov; or call Lee Stoker at (202) 632-0150) that reports on new developments on "governing in the information age." To discover more about Netresults and the National Performance Review, send an email message to: almanac@ace.esusda.gov with the following in the text of the message: send netresults catalog or send npr catalog.

Freenets, operated by citizen groups, and community or civic networks, operated by government agencies, are computer networks that offer unique opportunities for interlocal
cooperation and public participation. A freenet is a community computing resource that offers accounts (typically at no charge) with passwords to the local user. They allow the user to email to others on the system, to obtain community information, discuss community issues, and interact on the Internet without charge. The goal of the civic network is to bring citizens, government, and public libraries closer together using this new technology. Usually these civic networks also provide free public access to databases maintained by the sponsoring city and county governments (e.g., planning information, city council minutes, community directories, local events, municipal ordinances) and serve as gateways to state and federal information and databases.

The largest freenet is the Cleveland FreeNet, which operates out of Case Western Reserve University. Other freenets exist in Santa Monica (Calif.), Tallahassee (Fla.), and Victoria (B.C.) while many others are under development in Seattle, San Francisco and Los Angeles. To learn more about community networks, consider subscribing to the discussion list/listserv COMMUNET (email: UvmVM.Uvm.EDU) or contact the Center for Civic Networking, P.O. Box 65272, Washington, D.C. 20035; (202) 362-3831 for more information.

Bulletin Boards (BBS) are excellent for cultivating on-line discussion and information sharing. Users dial-in from their home computer modems, or through a network link, to an individual BBS or access them through the Internet to post items, respond to discussions, and download (bring back to their home computer) files and software.

One prime example of this concept is the TQM BBS, operated by Tom Glenn of Takoma Park, Md., which is devoted to total quality management issues. According to Mr. Glenn, there are several suggested methods for connecting to the TQM BBS: First, from a computer modem, a connection to the BBS can be made by dialing: (301) 585-1164. Second, a telnet session can be achieved by sending an email message to: ftpmail@tqm.permenet.org, and, in the body of the message request: get index to receive a catalog of what's on the service. Or, lastly, Clemson University "mirrors" the board and can be accessed by the following three paths: a.) anonymous ftp to: ftp.deming.eng.clemson.edu; b.) gopher.deming.eng.clemson.edu:70/1; 3.) Or, lastly, via mosaic-http://deming.eng.clemson.edu. For more information about the Clemson University TQM files, send a message to: kimbler@eng.clemson.edu. Currently, the TQM BBS carries over 350 documents (e.g., articles, speeches, research papers, government research, position papers, etc.) on quality related topics. The TQM BBS also is home to the TQM Conference, an ongoing discussion forum on quality issues (to post messages or queries on the TQM Conference use the email address: tom.glenn@tqm.permenet.org).

In addition, many local governments (e.g., Oakland and San Jose, Calif.) have established city bulletin boards to which citizens may dial-in to peruse city council agendas and minutes, local ordinances, etc.

Computer conferencing expands upon the bulletin board and email concepts by allowing intermittent, continuous discussion in "threads" on various topics. They offer yet another way to enhance the productivity of workgroups by removing the barrier of distance and time among users participating in an electronic forum convened on an issues or topic. For instance, SFSUNet, a computer conferencing group at San Francisco State University, has sponsored a series of computer conferences for hopelessness service agencies in the San Francisco Bay Region. Due to the wide
distances, this medium allows agencies working in coalitions together to communicate quickly and efficiently.

The Virtual Public Administrator

The information highway is transforming how we think, solve problems, communicate, and organize work. The emerging electronic information network provides scholars, public managers, students, and citizens "real time" access to knowledge and data in a wide array of formats. The Internet, as an interactive communications tool, has great potential for creating new affinities among public administrators. The current trend towards reinventing government, at all levels, will require students and practitioners of public service to engage in new methods for strengthening our "issue networks" that support professional learning, creativity, and consensus building. These vast new electronic networks are a place for human interaction and community building.

What will the emerging "virtual public agency" of the future look like? The "virtual public agency" will be an organization so flexible in structure that it can shift its boundaries and focus to meet almost any need presented by the public's agenda. A hallmark of the virtualization of the public sector means that every piece of information, produced anywhere in the organization (e.g., governmentwide), is accessible from anywhere, anytime. Virtual agencies are pools of talent loosely organized into workteams and configured together through cyberspace; virtual communities are groups of people exchanging ideas and information in cyberspace. Thus, the reinvented public administrator must be skilled in mobile computing solutions, administrative acumen, and in organizational flexibility to meet the challenge of digital democracy.

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