

APPENDIX 25. PANEL THREE: FINAL REPORT ON CITIZEN, BUSINESS, LOWER LEVELS OF GOVERNMENT, LIBRARY, AND OTHER NEEDS FOR PUBLIC INFORMATION PRODUCTS AND SERVICES

This and the other three panel reports were submitted to the U.S. National Commission on Libraries and Information Science (NCLIS) as part of the assessment. However, the opinions are those of the panel members, not necessarily those of the Commission. Any panel recommendations that the Commission has accepted are reflected in the Commission's own recommendations in *A Comprehensive Assessment of Public Information Resources, Volume 1*.

REPORT OF STUDY PANEL NUMBER THREE REPORT OF PANEL THREE ON EXTERNAL USER NEEDS

CONTENTS⁵²

Introduction
External Users
Current Dissemination
Opportunities
 Return on Investment and Benefits of Government Information
Archiving, Access, and Preservation
Scientific and Technical Information
Panel 3, Appendix A: Members of Panel 3

INTRODUCTION

Panel Three (external user needs) was charged with determining the extent and the reasons why current federal government information products and services, e.g. NTIS, GPO, NARA, the Library of Congress, etc., fail to adequately satisfy external (i.e. non-governmental) user needs. External users include: private corporations; institutions such as universities, research organizations, and hospitals; library and other intermediary distributors of government information (including public, state, academic, research, depository, and special libraries); public interest groups; and individual citizens

There are a number of reasons for the failure. For example, some laws need updating to better reflect current practices, policies, and technology. Overall, the expectations of users have risen dramatically under the impact of new technologies, a rise that can be expected to continue as the technologies continue to expand their capacity to deliver information more effectively and efficiently.

This report discusses external users and their need for dissemination of up-to-date federal information; opportunities for more active dissemination; benefits due to the government's information investment;

⁵² Available at <http://www.nclis.gov/govt/assess/assess.appen25.pdf>.

archiving, access, and preservation issues; a model for the dissemination of scientific and technical information; and recommendations for improving dissemination of all government information.

Lack of time precluded an in-depth study of user needs, practices, and detailed analyses of issues. The panel's activities focused on defining critical issues and suggesting alternative mechanisms and opportunities for the dissemination of government information.

For purposes of this report, the panel has limited its definition of information to material in the public domain and excluded confidential business and personal information, trade secrets, information likely to affect rulemaking or law enforcement, information affecting national security, and FOIA-exempt information.

EXTERNAL USERS

Non-governmental users of information include the citizenry at large, business, state and local governments, scientists, engineers, health care practitioners, rural populations, individual inventors, educators, research organizations, public interest groups, and special interest groups dealing with health, environment, and other issues.

Each citizen has a variety of professional, work related, and personal information needs. The availability of accurate and timely information often can mean the difference between success and failure, health and illness, learning or ignorance, and economic growth and stagnation. Information has no value until it is used. Inaccessible information cannot be retrieved or used and has little value.

The availability of government information on the Internet has increased the number of users and uses of government information. The number of users directly accessing information on the Internet has expanded dramatically. At the same time the need for librarians and other information professionals has increased. Librarians are in great demand to organize information, to help people find what they need on the Internet, and to help people evaluate and apply the information they find. The databases and information offerings of the National Library of Medicine, the Department of Energy, the Securities and Exchange Commission, NTIS, NOAA, NASA, and EPA have made it easier for researchers and citizens to find and use needed information.

People need access to government information to learn about what their government is doing. They need access to a vast range of information to make their lives better. They need to know of potentially harmful situations and events such as air pollution conditions, dangerous storms, or faulty tires. Researchers, scholars, and product developers need ready and timely access to a wide variety of scientific, technical, and business-related information and data. The cost to citizens of not having information readily available cannot be calculated.

Taxpayers have paid for the creation of this information and should be able to retrieve and use it. Citizens require information from all levels of government: federal, state, local, and tribal. The Federal government is in an excellent position to develop information dissemination models and standards applicable to state, local, and tribal government information.

The government needs to enact legislation and implement systems that maximize availability of information to the public. The systems need to be sustainable and easy to use and to ensure the authenticity, integrity, and preservation of government information. External users want easy retrieval and accessibility. Agencies want systems that make it easy to disseminate information. Private

industry needs to acquire information and data in raw form so that they can add value and provide additional services to the public.

CURRENT DISSEMINATION

An NCLIS white paper dealing with myths and realities of the information age comments on federal information policy:

Success in searching for, finding, and utilizing precisely the information a user seeks, and only the information a user seeks, is only as good as the quality, the integrity, the timeliness and the accuracy of the federal information infrastructure which is searched.⁵³

The current situation results in great frustration for users who have to search many government databases and web sites that are poorly organized and provide little or no information about the content of source documents.

People access government information online through GPO Access, GILS, First Gov, Fed World, Thomas, as well as directly on agency web sites. They also reach government information—online and off—from private industry sources and depository libraries. Government information may appear in many formats—as books, periodicals, technical reports, or Web-only documents. Digitally, government output may also include CD-ROMs or floppy disks; non-digitally, it may appear as microfilm images.

Releasing information on the Internet reduces the time between information generation and information use. Generally, the cost of information delivery on the Internet is less than delivery in other media. Distribution of information in print, CD-ROM, or microform delays delivery to the public. Production and distribution times are longer than distribution online. The Internet can provide text, numeric data, graphics, animation, and simulation in a more useful form for the people using the information.

In the past public acquisition of government information depended upon depository libraries, government bookstores, and mail order from GPO. If a person did not live near a library, they simply could not get the information easily or quickly. While this system worked well in the print-on-paper era, it now must evolve into the rapidly emerging electronic and networked-based environment. Younger people, especially, do not want to access information in paper. They are accustomed to using the Internet for quick and easy access to information wherever and whenever they need it.

The electronic mode makes it possible to deliver information wherever the reader may be (for instance, to his or her computer in the home or workplace, or by wireless technology to any place), to present information that cannot be captured in print (such as video attachments, tables that can be manipulated and so on), and to facilitate use of information through quality interfaces and search capabilities.⁵⁴

⁵³ The White Paper entitled *Some Important Information Age Paradigm Shifts and Their Associated Myths and Realities* is available as Appendix 15 and at <http://www.nclis.gov/govt/assess/assess.appen15.pdf>.

⁵⁴ National Research Council, Computer Science and Telecommunications Board. *LC21: A Digital Strategy for the Library of Congress*. Washington, DC: National Academy Press (2001). This reference is to a prepublication copy, dated July 26, 2000. <http://www4.nationalacademies.org/news.nsf/0a254cd9b53e0bc585256777004e74d3/bd6c8fce95b00a6d852569280047753a?OpenDocument>.

The Internet is the medium of choice for many in business, education, and general information seekers. The Internet does not represent an incremental improvement, but a basic change in the distribution of information in all forms. Before the World Wide Web, publishers viewed the Internet as an add-on to print, CD-ROMs, and microfilm. Paper was the primary medium for distribution of information. It is still preferred by many people, but is not the medium of choice for the future. Now many publishers and most young people view the Internet as the primary source for information. Print has become the add-on.

More than 95% of all U.S. public schools have access to the Internet.⁵⁵ A number of public and private activities have made this connectivity possible. The "digital divide" is a reality, but it is gradually disappearing. Just as reductions in price resulted in VCRs becoming ubiquitous in U.S. households, reductions in the price of computers and commercial offerings of free Internet access are bringing the Internet into more households. The use of computers and the Internet by more school children also is stimulating sales and access. According to Nielsen/Net Ratings, Internet users with annual incomes between \$21,000 and \$33,000 spent more time on the Internet than the average Internet user.⁵⁶

Just as some U.S. households lack television, telephones, and VCRs, some households will not be Internet users. The Pew Internet & American Life Project found,

Most of the strongest Internet holdouts are older Americans, who are fretful about the online world and often don't believe it can bring them any benefits.⁵⁷

At the same time, articles in newspapers and magazines record tales of older citizens using the Internet to exchange email with grandchildren, learn more about health care and other issues of interest, and chat with peers. In fact, senior citizens represent a fast-growing segment of Internet users. Bottom line, online access extends across the whole population spectrum and continues to expand its reach exponentially.

The private sector plays an important role in providing organized and value-added government information products and services online and in print. Libraries and businesses rely on the private sector for packaged information products and services. The private sector, like libraries and federal agencies, needs to acquire government information efficiently, quickly, and in usable formats, in order to supply value-added information to their customers. Private industry also can help government by sharing experience and expertise in electronic publishing.

OPPORTUNITIES

While extraordinary opportunities to change and improve the way people acquire government information have emerged, a variety of barriers constrain active dissemination of government information. We need to establish an intelligent, robust, easy to use, and sustainable system for distribution of government information to external users.

More effective dissemination of government information could be assured by:

- Updating statutory authority for information programs;

⁵⁵ *Newsbytes*, September 11, 2000; *Edupage*, September 13, 2000.

⁵⁶ *New York Times Online*, September 25, 2000; *Edupage*, September 25, 2000.

⁵⁷ Amanda Lenhart. *Who's Not Online: 57% of those without Internet access say they do not plan to log on*. Pew Internet & American Life Project; <http://www.pewinternet.org/reports/toc.asp?Report=21>.

- Providing for information technology infrastructure in the federal government and collaboration among agencies;
- Identifying incentives for agencies to be more proactive in dissemination of their agency resources;
- Gaining greater understanding of public information requirements;
- Increasing appropriations to support information technology programs; and
- Providing information to the private sector for the production of customized and value-added products.

Federal agencies are not mandated by law to disseminate all information collected or gathered in the course of their operations. In its efforts to foster efficient agency operations and save money, Congress has discouraged issuing "unnecessary" reports and information, often not realizing that these reports and data may constitute valuable research material.

An efficient federal information distribution program requires a coherent infrastructure. The infrastructure would include appropriate hardware, software, shared expertise, administrative support, and standards for electronic publishing, cataloging, metadata, abstracting, indexing, and interoperability. Extra support should be made available to agencies, especially small agencies that cannot afford to build information dissemination systems.

Historically, lack of full collaboration among agencies has stemmed from issues related to turf and territory in the design of systems for dissemination and long-term preservation and access. In addition, sometimes confusion occurs concerning agency responsibilities regarding information and dissemination programs.

Collaboration would permit agencies to share knowledge, expertise, standards, and infrastructure. In particular, the development of standards would reduce obstacles in public access to government information. Congress should reaffirm that agencies make a concerted effort to disseminate information they collect. In addition, these agencies should collaborate on information dissemination.

Technology presents extraordinary opportunities to create government information dissemination programs that deliver information to people, in and out of government, where and when they need it. The report of the Fifth Solomon's Island Interagency Conference on Public Access observed:

Technology advances offer less costly and more effective techniques to disseminate electronic information, resulting in a significant increase in the number of people and organizations that can utilize information in electronic format. The increased recognition of the value of current information to the individual recipients and to the nation has led to a growing demand on the part of the public to exercise their rights to such access.⁵⁸

This conference was held in 1994 before the rise of the World Wide Web and metadata standards and the dramatic increase in the installed base of computers with access to the Internet in homes, offices, and schools.

⁵⁸ Fifth Solomons Interagency Conference on Public Access, June 27-28, 1994, *Working with the Public to Ensure Public Access to Federal Information in an Electronic Age: Proceedings*. U.S. Department of Health and Human Services, September 1994; <http://www.nclis.gov/govt/assess/fifthsol.html>.

Timeliness of information is critical. Many information items require "real time" dissemination to be useful. For example, in large cities with severe air pollution problems, parents need to know ozone levels to determine if it is safe for asthmatic children and people with respiratory diseases to be out of their homes. Vacationers and people living close to oceans, rivers, and lakes are concerned with health advisories about beaches and probable stormy conditions. Real time information is an excellent example of effective and valuable dissemination by public and private organizations through the broadcast media and the Internet.

On the user side, many potential users do not know the breadth and depth of available information, where information is located, or how to get it. Many people simply give up when they do not find what they need on the Internet. They make the assumption that needed information does not exist. Librarians help people find information, but some people do not use libraries.

Disabled citizens have special needs for information and for access methods. For example, visually handicapped people would benefit significantly from voice-activated systems becoming increasingly common. People whose native language is not English would benefit from use of automatic translators that can translate into several languages.

Return on Investment and Benefits of Government Information

Industry, business, universities, and others need government information for all aspects of their operations. Their information needs range from regulatory information to financial, economic, and demographic data, scientific and technical information, and weather. Making information easily accessible to business can result in better decisions, better compliance with regulations, and greater productivity. Efficient and widespread dissemination of information using the Internet is the key to connecting agencies collecting and storing information with the individuals and organizations that can use the information to solve problems and generate new knowledge.

Dissemination of government information and its use create significant public benefit. Information enables people to learn about their government, issues affecting their quality of life, regulations related to the work place, how to grow healthy children and healthy plants, research on health and medicine, the exploration of space, etc. More timely release of regulatory information fosters compliance with various laws and rules affecting the environment, health, and the work place.

Elected officials, economists, and policy analysts repeatedly remind us that we live in a knowledge society where information is the key resource and asset. In this environment, information and learning become the key drivers to maintaining national superiority in science, technology, innovation, and economic growth. The Internet has transformed education and health care. More and more colleges, universities, and private companies offer courses and degrees to users remote from college campuses. Corporations use the Internet to disseminate training and education to employees around the globe. The wide availability of health information is producing consumers with more knowledge of diseases, options for healing, health, and wellness. It is essential that citizens have government-produced information on which they can rely.

As the world's largest producer of information the federal government has a unique and critical role in the information society and the nation's future scientific and economic development. The investment made by the taxpayers in research, data gathering, and the dissemination of information has been and will continue to be a key resource that returns enormous benefit to the economy and society. The maximum return on this investment and the maximum public good can be achieved only if government produced information and research results are disseminated in an effective manner on the Internet.

The federal government funds a substantial portion of all scientific and technical research. This research helps the U.S. maintain its competitive edge in medicine, science, and technology. Failure to widely disseminate research results means that this valuable asset remains unused and unproductive. Inaccessible research results cannot be transformed into products and processes that contribute to economic growth and productivity.

ARCHIVING, ACCESS, AND PRESERVATION

We are in danger of losing our history and valuable research results because documents (print, film, and digital) are not being archived and preserved. More and more information is being "born digital" and disseminated that way. This information is often here today and gone tomorrow. The loss of history and documentation denies valuable information and data to future generations.

Information architectures must include systems that enable permanent and sustainable access to government information. These systems must offer permanent storage, access, retrieval, and preservation of government information. Systems must provide for sustainable preservation of content, context, and the structure of information, as well as ensure the authenticity, reliability, and integrity of content.

The critical need for a reliable, stable archive, which is trusted by all parties, is a primary concern in information management today. For government information, there is a national responsibility to protect the taxpayers' investment.⁵⁹

An archive is an active collection where people can go to access lesser used, valuable or rare materials. It is not a repository of dead documents. Preservation involves permanent protection of information materials from decay or decomposition.

Commitment to preserve our history and preserve information for access by future generations is essential. This can be achieved through the implementation of archiving and preservation systems and the collaboration of archivists, librarians, records managers, and information technology experts.

A recent report on the information infrastructure of the physical sciences stated, "Traditional means of access to the scholarly records are no longer sufficient to meet researchers' needs and expectations or even to follow the rapid pace of scientific developments."⁶⁰ The report points out that lack of information can cause great harm and waste millions of dollars, as in the case of the Challenger accident where known data failed to reach the decision making process.

Scientific and technological development does not just happen. Scientists and engineers rely on a wide body of previous and current work to provide the foundation for their work. In addition, they learn about new methodologies, successful and unsuccessful experiments and processes. Scientific and technological advances often take years. Chemists, physicists, mechanical engineers, civil engineers, and others depend on work done in the past. This work must be archived, made available for access, and be preserved, so that we can continue to learn from the past. J. Robert Oppenheimer in his book, *Uncommon Sense*, stated, "The History of Science is rich in examples of the fruitfulness of bringing

⁵⁹ Ibid.

⁶⁰ *Workshop Report on a Future Information Infrastructure for the Physical Sciences: The Facts of the Matter: Finding, Understanding, and Using Information About Our Physical World*, Washington, DC, May 30-31, 2000, Washington, DC: Department of Energy, Office of Scientific and Technical Information, no date; <http://www.osti.gov/physicalsciences/wkshprpt>

two sets of techniques, two sets of ideas developed in separate contexts for the pursuit of new truth, into touch with one another." Today, some areas of science are becoming highly interdisciplinary. For example, the development of new building materials involves chemists, mechanical engineers, structural engineers, and materials scientists. Development of artificial limbs may involve mechanical engineers working with orthopedic surgeons and materials scientists.

Concern for archiving and preserving information is not restricted to scientists and technologists. Historians, policy analysts, members of Congress and all in government need to know the basis of federal decision-making. They need to know the context and how and why decisions were made. The what, when, where, how, and why of events and knowledge are important to understanding human achievements and problems and will be important to future generations as they seek to understand our history.

In designing and implementing archiving and preservation systems the government needs to work with the Open Archive Initiative⁶¹ to ensure participation in setting standards, implementing standards, and ensuring interoperability

The burden of archiving the complete body of federal government information is too great for any single agency. Collaboration among agencies, participation of many groups, and cooperation between the public and private sectors are required to archive and maintain the government's store of information. The National Archives and Records Administration (NARA) should take the lead in forming a collaborative of federal agencies, universities, state governments, and trusted third parties such as OCLC, Inc., RLG, and The Internet Archive. The collaborative effort would help ensure that all information including agency web sites would be archived, preserved, and be made available when needed as well as setting and implementing standards.

SCIENTIFIC AND TECHNICAL INFORMATION

Transfer of technology and information relies on the ready availability of government sponsored research results. Scientific and technical progress and the creation of new knowledge depend on the use of existing research and information. The Workshop Report on a Future Information Infrastructure for the Physical Sciences stated:

The government has a responsibility to disseminate the results of federally sponsored research as broadly as possible as a public good.⁶²

The government realizes the return on its investment through innovation, invention, and economic growth.

Information and technology transfer occur through technical reports, online collaboration among scientists, journal articles, preprints, working papers, and face-to-face meetings. The timely and easy transfer of research results increases knowledge, avoids redundancy and wasted effort, and enables the transfer of ideas and techniques from one scientific field to another. Timely information and learning are building blocks of science and technology and key drivers in innovation and economic growth.

NTIS serves as a primary central source of scientific and technical reports. NTIS collects, catalogs, abstracts, and indexes technical report content and opens access to this information through its

⁶¹ <http://www.openarchives.org/>.

⁶² *Workshop report*, op. cit.

database and distribution of reports. Many agencies do not voluntarily submit their reports to NTIS, forcing information seekers to find reports on their own through trial and error searching of agency web sites. And even agency web sites often do not contain the documented research results coming from contractors.

Science is becoming both more specialized and more interdisciplinary. Scientists working in a highly specialized field usually know each other and share information through e-mail, discussion lists, and preprints. Scientists venturing into new fields or interdisciplinary areas cannot rely on their usual methods. They need one source that will contain metadata, abstracts, and indexes to all government reports with online linkages to the full text. Examples of important interdisciplinary fields include nanotechnology, materials science, biotechnology, and biosciences.

Industry relies on the ready availability of federally funded research reports to discover new knowledge, learn new methods, and avoid redundancy. If the report literature is not reviewed, companies could spend millions of dollars performing experiments or research already done. Timely dissemination of research results also saves companies from investing in unpatentable results.

The Department of Energy workshop report states, "Our ability to compete is first based on ability to know quickly. The value is not in having the knowledge, but in using it."⁶³ Ability to use information relies on having quick access to full text and relevant data.

"Business and industry convert research results into the tools and products we often take for granted. It is essential that the linkage from research results and the rate of transfer to and from business and industry communities keep pace with the global communication processes that are evolving through the use of the Internet."⁶⁴

The *NCLIS Preliminary Assessment of the Proposed Closure of NTIS* observed,

"The service capabilities of NTIS are deteriorating continuously as NTIS employees resign, retire, or transfer to other units, often with very serious impacts on their pay, careers, families and morale. Private enterprise, students, faculty researchers, government, and foreign customers of NTIS products and services are increasingly worried as to whether, and how (if at all) they will have access to the results of federally-funded R & D in the future."⁶⁵

Denial of results of federal R & D could have significant negative impact on science, technology, and business.

It is clear that new ways of disseminating government produced scientific and technical information are needed if innovation, scientific and technological progress, and economic growth are to continue. A new paradigm should be considered to manage and distribute scientific and technical reports and information. This function should be housed in the Executive Branch and be responsible for the description of science and technology content with linkages to full text content and data sets. A smart portal, a single source, with indexes, abstracts, and metadata to aid the researcher in finding the information that is needed. Such a portal with a powerful search engine will increase the probability

⁶³ Ibid.

⁶⁴ Ibid.

⁶⁵ U.S. National Commission on Libraries and Information Science, *Preliminary Assessment of the Proposed Closure of the National Technical Information Service (NTIS): A Report to the President and the Congress*, Washington, DC: U.S. Government Printing Office, March 2000; <http://www.nclis.gov/govt/ntis/presiden.pdf>.

that researchers get the information they need quickly and easily. A powerful search engine, smart portal, and linkages to full text will save researcher time and increase productivity. Ensuring that government information is appropriately archived and preserved would be part of this effort. Since technical reports are "born digital," formatting, abstracting, indexing, and adding to the web would cost less for potential audience reached than reproduction in paper or microfilm. A web-based system may involve capital investment, but long-run operating costs will be lower and benefits higher.

An interagency council is required to set standards, share expertise, encourage collaboration, and provide for an appropriate infrastructure to serve all agencies involved in the dissemination of scientific and technical information. As the Department of Energy Workshop Report determined:

The overall conclusion of the workshop was an enthusiastic endorsement of a vision of national information infrastructure that benefits not just the scientific community, but the national good. It could ultimately impact not only research and development (R & D), but also education and applications to our everyday lives. It would be a step to integrate the whole of science to provide a basis to improve society, the economy and the environment.⁶⁶

Congress should enact legislation that mandates the dissemination of scientific and technical information and provide incentives for agencies to cooperate and participate in the dissemination program. Incentives include a statement of renewed commitment from the Congress, provision of infrastructure, creation of an interagency council to encourage cooperation, collaboration and the sharing of expertise. This commitment will recognize the contributions of agencies to increasing information and knowledge and increasing the public good.

RECOMMENDATIONS FOR THE DISSEMINATION OF GOVERNMENT INFORMATION

Information seekers inside and outside government have many challenges. They often are unaware of the vast amount and variety of information available from their government. While the public can access GPO Access, Fed world, and First Gov, they often remain ignorant of where to find what they truly need.

The goals for a new and reconfigured program of government information dissemination are to increase the quantity and quality of government information for the public, enable retrieval of information whenever and wherever needed, enhance the probability that an information seeker will find desired information, and enable all government agencies to electronically publish data, information, and reports.

To accomplish these goals, we need sustainable, easy to use systems that can ensure the authenticity, integrity, and preservation of government information. The necessary infrastructure for an efficient federal information distribution program would require appropriate hardware, software, shared expertise, administrative support, and standards for electronic publishing, cataloging, metadata, abstracting, indexing, and interoperability.

Under the leadership of the National Archives and Records Administration, the government should form a collaboration of federal agencies. The council should also collaborate with universities, state governments, and trust third parties such as OCLC Inc., RLG, and The Internet Archive.

⁶⁶ *Workshop Report on a Future Information Infrastructure for the Physical Sciences*, op. cit.

An interagency council should be established to set standards, share expertise, encourage collaboration, and provide for an appropriate infrastructure to serve all agencies involved in the dissemination of scientific and technical information. The model recommended for the dissemination of scientific and technical information can be extended to all government information. Implementation of the model will likely require changes in many laws and, most importantly, a commitment to ensure that taxpayers have access to information that their government has produced. A smart portal with appropriate linkages, infrastructure and financial support would go a long way to creating the needed sustainable system for access to all government information for all people.

As Patricia Wood of the National Partnership for Reinventing Government recently stated,

"Government has an estimated 20,000 separate homepages and 40 million web pages, with common look or structure. Many are organized according to what the agency thinks is important—its stove pipe organizations, for example, not by topic. Data and activities are duplicated across government agencies. Twelve agencies, for example, oversee food safety under the authority of 35 different laws. Dot-gov isn't keeping pace with dot-com. Citizens can't find what they do not know to look for."⁶⁷

Many members of the public rely on librarians in public and academic libraries to help them locate information. These librarians and the public will require training in the form of online tutorials and hands-on instruction by experts. In committing to provide information to the public the Congress should include funds for training the nation's librarians to better serve the public. Training should be available to public, academic, school, law, and special librarians. Grants can be made to professional associations and universities to develop training courses, modules, materials, and online tutorials. Training also needs to be available to government staff in both information technology and information competency.

Partnerships with private industry can increase the availability and the ease of finding government information. The private sector (for-profit and not-for-profit) can expand choices for information consumers. We need to ensure a robust climate for private sector innovation and value-added services by ensuring that private sector institutions receive access to all raw data and information provided by agencies to the public.

Technology, growing awareness of the importance of information and learning, and an increasingly computer-aware and Internet-competent society provide an unprecedented opportunity to create an information and knowledge rich environment. The time is right for the Congress to make a commitment to do whatever has to be done to develop and implement online systems that disseminate, archive, and preserve information and benefit all citizens.

⁶⁷ Ibid.

PANEL 3, APPENDIX A: MEMBERS OF PANEL 3

Miriam A. Drake, Panel 3 Chairman, Georgia Institute of Technology

Prudence Adler, Association of Research Libraries

Lewis Bellardo, National Archives and Records Administration

Kevin Donovan, Environmental Protection Agency

Sharon Hogan, University of Illinois, Chicago

Diane Nester Kresh, Library of Congress

Barbie Keiser, Information Resources Management Consultant

Bernard Margolis, Boston Public Library

James McGinty, Cambridge Information Group

Barbara Peterson, 3M Library and Information Services

Barbara Quint, Searcher Magazine

Dale Stanley, Pfizer Inc.

Fred Weingartner, American Library Association

Freida Weise, University of Maryland

GladysAnn Wells, State Librarian, Arizona