U.S. NATIONAL COMMISSION ON LIBRARIES AND INFORMATION SCIENCE

A COMPREHENSIVE ASSESSMENT OF PUBLIC INFORMATION DISSEMINATION

FINAL REPORT, VOLUME 3
SUPPLEMENTARY REFERENCE MATERIALS
(APPENDICES 13 THROUGH 34)

JANUARY 26, 2001

U.S. National Commission on Libraries and Information Science
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The National Commission on Libraries and Information Science is a permanent, independent agency of the federal government, established in 1970 with the enactment of Public Law 91-345. The Commission is charged with:

- advising the President and the Congress on the implementation of policy;

- conducting studies, surveys, and analyses of the library and informational needs of the nation;

- appraising the adequacies and deficiencies of current library and information resources and services; and

- developing overall plans for meeting national library and informational needs.

The Commission also advises federal, state, and local governments, and other public and private organizations, regarding library and information sciences, including consultations on relevant treaties, international agreements and implementing legislation, and it promotes research and development activities which will extend and improve the nation's library and information handling capability as essential links in the national and international networks.

Commissioners and Staff include:

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

A variety of acronyms and abbreviations are used is this report and its appendices as a short form for long or commonly used names and phrases. The first time a name or phrase is mentioned in the text, the acronym is provided in parentheses following the full name, e.g., the National Commission on Libraries and Information Science (NCLIS). Subsequent references may use only the acronym. This table is provided to facilitate identification of acronyms and abbreviations since it may be difficult to locate the first use where the full name or phrase is provided.

AALL	American Association of Law Libraries
AAMR	American Association on Mental Retardation
AAP	American Association of Publishers
AARP	Association for the Advancement of Retired Persons
ACE	Americans Communicating Electronically
ACRL	Association of College Research Libraries
ADA	Americans with Disabilities Act
ADD	Automatic Document Distribution
AFFIRM	Association for Federal Information Resources Management
AIIP	Association of Independent Information Professionals
ALA	American Library Association
ALISE	Association of Library and Information Science Education
AMTD	Automatic Magnetic Tape Distribution
ANSI	American National Standards Institute
AO or AOUSC	Administrative Office of the U.S. Courts
APDU	Association of Public Data Users
ARC	Archival Research Catalog
ARL	Association of Research Libraries
ARMA	Association of Records Managers and Administrators
ARPA	Advanced Research Projects Agency, Department of Defense
ASCII	American Standard Code for Information Interchange
ASCLA	Association of Specialized and Cooperative Library Agencies
ASIS	American Society for Information Science, now American Society for Information Science and Technology
ASIST	American Society for Information Science and Technology, formerly American Society for Information Science
ATPA	American Technology Preeminence Act
CAB	Current Awareness Bibliography
CBD	Commerce Business Daily
CBO	Congressional Budget Office
CCSDS	Consultative Committee on Space Data System
CCIA	Computer and Communications Industry Association
CD-ROM	Compact Disk-Read Only Memory
CENDI	A consortium of scientific and technical information intensive federal agencies, including Defense, Energy, EPA, NASA, NLM, NTIS, and others

CFO	Chief Financial Officer
CFR	Code of Federal Regulations
CIC	Consumer Information Center
CIO	Chief Information Officer
CIRO	Congressional Information Resources Office (proposed)
CLB	Columbia Lighthouse for the Blind
CLIR	Council on Library and Information Resources
CNRI	Corporation for National Research Initiatives
COPPA	The Children's Online Privacy Protection Act
COSATI	Committee on Scientific and Technical Information
COSLA	Chief Officers of State Library Agencies
CPIR	Council on Public Information Resources (proposed)
CRS	Congressional Research Service, Library of Congress
CSTB	Computer Science and Telecommunications Board, National Academy of Sciences
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DOL	Department of Labor
DOT	Department of Transportation
DTIC	Defense Technical Information Center
DVD	Digital Video Disk
E-FOIA	Electronic Freedom of Information Act
ECFS	Electronic Comment Filing System
ECOS	Environmental Council of the States
EFT	Electronic Funds Transfer
EOP	Executive Office of the President
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ERA	Electronic Records Archive
ERIC	Educational Resources Information Center
ES	Expert Systems
ESA	Employment Security Administration
ETDC	Energy Technology Data Center
EU	European Union
FAR	Federal Acquisition Regulations
FCC	Federal Communications Commission
FDLP	Federal Depository Library Program
FGDC	Federal Geographic Data Committee
FILIS	Federal Institute of Library and Information Science (proposed)
FIPS	Federal Information Processing Standards
FLICC	Federal Library and Information Center Committee
FOIA	Freedom of Information Act
FPC	Federal Publishers Committee
FTS	Federal Telecommunications Standards
FWF	Federal WebMasters Forum

FWS   Fish and Wildlife Service, Department of the Interior
FY   Fiscal Year

GAO   General Accounting Office
GILS   Government Information Locator Service
GODORT   Government Documents Roundtable of the American Library Association
GPEA   Government Paperwork Elimination Act
GPRA   Government Performance and Results Act
GPO   Government Printing Office
GSA   General Services Administration
GXML   Government eXtensible Markup Language

HHS   Department of Health and Human Services
HTML   HyperText Markup Language
HUD   Department of Housing and Urban Development

ICB   Information Collection Budget
ICPPS   Interagency Council on Printing and Publications Services
ICSP   Interagency Committee on Statistical Policy
ICSTI   International Committee for Scientific and Technical Information
ICSU   International Council of Scientific Unions
IDB   Information Dissemination Budget
IEA   International Energy Agency
IETF   Internet Engineering Task Force
IFLA   International Federation of Library Associations and Institutions
IIA   Information Industry Association, now merged into the Software and
                        Information Industry Association
ILCM   Information Life Cycle Manager software program (proposed)
IMLS   Institute of Museum and Library Services
INIS   International Nuclear Information System
IRM   Information Resources Management
IRMS   Information Resources Management System
IRS   Internal Revenue Service
ISI   Institute for Scientific Information
ISO   International Standards Organization
IT   Information Technology
ITU   International Telecommunications Union

JIRO   Judicial Information Resources Office (proposed)

LC   Library of Congress
LEP   Limited English Proficiency
LSCA   Library Services and Construction Act
LSTA   Library Services and Technology Act

MIS   Management Information Systems
MIT   Massachusetts Institute of Technology
MLA   Medical Library Association

NAE	National Academy of Engineering
NAICS	North American Industry Classification System, formerly the Standard Industrial Classification (SIC)
NAILS	National Archives Information Locator
NAL	National Agriculture Library
NARA	National Archives and Records Administration
NAS	National Academy of Sciences
NASA	National Aeronautics and Space Administration
NASIRE	National Association of State Information Resource Executives
NBA	National Braille Association
NBII	National Biological Information Infrastructure
NCLIS	National Commission on Libraries and Information Science
NDLTD	Networked Digital Library of Theses and Dissertations
NFAIS	National Federation of Abstracting and Information Services
NFFE	National Federation of Federal Employees
NFIL	National Forum on Information Literacy
NIIAC	National Information Infrastructure Advisory Council
NISO	National Information Standards Organization
NIST	National Information Standards
NLE	National Library of Education
NLM	National Library of Medicine
NLS	National Library Service for the Blind and Physically Handicapped, Library of Congress
NOD	National Organization on Disabilities
NOAA	National Oceanic and Atmospheric Administration
NPR	National Performance Review
NPRG	National Partnership for Reinventing Government
NPRM	Notice of Proposed Rulemaking
NRC	National Research Council
NSA	National Security Agency
NSDI	National Spatial Data Infrastructure
NSDL	National Science, Mathematics, Engineering and Technology Education Digital Library, also called the National Science Digital Library
NSF	National Science Foundation
NTIA	National Telecommunications and Information Administration
NTIS	National Technical Information Service
NWS	National Weather Service, National Oceanic and Atmospheric Administration
OAIS	Open Archival Information System
OCLC	OCLC Online Computer Library Center, Inc.
OCR	Optical Character Recognition
OFPP	Office of Federal Procurement Policy, Office of Management and Budget
OFR	Office of the Federal Register, National Archives and Records Administration
OIA	Office of Intergovernmental Affairs, Executive Office of the President
OIRA	Office of Information and Regulatory Affairs, Office of Management and Budget
OMB	Office of Management and Budget
OMT	Object Modeling Technique
OSHA	Occupational Safety and Health Administration
OSTI	Office of Scientific and Technical Information, Department of Energy

OSTP	Office of Science and Technology Policy, Executive Office of the President
OTA	Office of Technology Assessment, U.S. Congress
PDF	Adobe Systems Acrobat Portable Document Format
PEC	Procurement Executives Council
PIRA	Public Information Resources Administration (proposed)
PIRUC	Public Information Resources Users Council (proposed)
PITAC	President's Information Technology Advisory Committee
PKI	Public Key Infrastructure
PLA	Public Library Association
PPA	Permanent Public Availability
PRA	Paperwork Reduction Act
PS/PS	Public Sector/Private Sector
PTO	Patent and Trademark Office
PUMS	Public Microdata User Samples
PURL	Persistent Uniform Resource Locator
R&D	Research and Development
RDF	Resource Description Framework
RFP	Request for Proposal
RKR	RecordKeeping Requirements
ROI	Return on Investment
SDA	Source Data Automation
SDI	Selective Dissemination of Information
SDTS	Spatial Data Transfer Standard
SEC	Securities and Exchange Commission
SGML	Standard Generalized Markup Language
SHHHP	Self-Help for Hard of Hearing People, National Center on Assistive Technologies
SIC	Standard Industrial Classification, not North American Industry Classification System
SIIA	Software and Information Industry Association, includes the former Information Industry Association
SLA	Special Libraries Association
SRIM	Selected Research in Microfiche
SSA	Social Security Administration
STI	Scientific and Technical Information
STIE	Scientific, Technical and Engineering Information
STINET	Scientific and Technical Information Network
SuDocs	Superintendent of Documents, Government Printing Office
SuPICT	Superintendent of Public Information and Communications Technologies (proposed)
SuPIR	Superintendent of Public Information Resources (proposed)
TDI	Telecommunications for the Deaf, Inc. (former name)
TIFF	Tagged Image File Format
TRAIL	Technical Report Awareness Internet Links
ULC	Urban Libraries Council
ULS	Universal Licensing System

UNESCO	United Nations Educational, Scientific, and Cultural Organization
URL	Uniform Resource Locator
URN	Uniform Resource Name
USC (or U.S.C.)	United States Code
USGS	Geological Survey, Department of the Interior
USDA	Department of Agriculture
XML	eXtensible Markup Language
Y2K	Year 2000
WARMS	Web-Automated Reference Materials System
WWW	World Wide Web

VOLUME 3: SUPPLEMENTARY REFERENCE MATERIALS

APPENDICES 13 THROUGH 34

NOTE: Appendices 1 through 10 are in Volume 1 of the Commission's report, *A Comprehensive Assessment of Public Information Dissemination*, which is available in electronic form at http://www.nclis.gov/govt/assess/assessv1.pdf and in print.

Appendices 11 and 12 are in Volume 2, *Legislative and Regulatory Proposals*; it is available at http://www.nclis.gov/govt/assess/assess.vol2.pdf and in print.

Appendices 13 through 34 are in this volume, *Supplementary Reference Materials*; Volume 3 is available at http://www.nclis.gov/govt/assess/assess.vol3.pdf.

Appendix 35 is in Volume 4, *Compilation of Recent Federal Statutes on Information Dissemination*; it is available at http://www.nclis.gov/govt/assess/assess.vol4.pdf.

Each appendix is also available at http://www.nclis.gov/govt/assess/assess.html as an individual file. The unique file name for each appendix is included as the appendix is inserted below.

Most of the appendices were posted on the Commission website during the course of the study to facilitate public access, review and comment. The appendices, and other files providing background on the assessment, will remain on the Commission website for permanent public access. The Commission feels that this method of distribution is in keeping with the subject matter of this report, which encourages agencies to ensure the permanent public accessibility of their electronic public information resources.

Appendices submitted to the Commission as paper copies have been scanned and reformatted, so the content is as submitted, but the format is different. Electronic submissions have also been reformatted, but the content is as submitted.

APPENDIX 13. NCLIS STUDY PLAN OUTLINE

> Note: This plan was developed in July 2000 and reflects the Commission's plans at the beginning of the assessment. As was intended, these plans were amended and changed as circumstances and opportunities warranted. The original document is included here to show how the assessment was originally planned, and does not convey everything that was, in fact, done as part of the study, or even how each thing was done.

Developed by F. Woody Horton, NCLIS Consultant
In Consultation with the Commissioners and Staff

BACKGROUND[1]

This is a study plan outline for the NCLIS study of public information dissemination reforms, including information on the establishment and operation of the four advisory panels and the Board of Experts,[2] and other related NCLIS research activities that are planned.

On June 12, 2000, Senator John McCain, Chairman of the Senate's Commerce, Science, and Transportation Committee, signed a letter to NCLIS Chairperson Martha Gould asking NCLIS to undertake an independent review of the government's public information dissemination laws, policies, programs, and practices. A copy of that letter, NCLIS Chairperson Martha Gould's reply, as well as an NCLIS press release, appears above at this URL address.

Henceforth NCLIS will be referring to the first stage of the study completed in March 2000 of the NTIS situation as the "Preliminary Assessment of the NTIS Closure and Transfer," or Stage One, and the next stage of the study, which is just now being launched, as the "Comprehensive Assessment of Public Information Dissemination," or Stage Two.

ADVISORY PANEL CHAIRS AND PANEL OPERATIONS

To help the Commission in its investigations, four advisory panels and one Board of Experts are being established. The four panels are:

- Panel 1 (**NTIS Business Model**)-Reforming the NTIS business model for the Information Age;

- Panel 2 (**Internal Government Reforms**)-The extent to which individual government agency needs for NTIS, GPO, NARA, national library, & other central service bureau types of information products and services are not being adequately satisfied because of deficient, outmoded, obsolete or unresponsive laws, programs, policies, or practices;

- Panel 3 (**External User Needs**)-The extent to which external (i.e. non-governmental) user needs for NTIS, GPO, NARA, national library, & other central government information products and services, as well as individual Federal agency information products and services are not being

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[1] Available at http://www.nclis.gov/govt/assess/assess.appen13.pdf and at http://www.nclis.gov/govt/assess/planout.html. This appendix was last revised on July 25, 2000.
[2] This was later referred to as the "Group of Experts."

adequately satisfied because of deficient, outmoded, obsolete, or unresponsive laws, programs, policies, or practices; user needs 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 citizen needs; and

- Panel 4 (**Public-Private Sector Partnerships**)-Redefining public-private sector roles, partnerships, and initiatives vis-à-vis public access to, and dissemination of government information, given the advent of the World Wide Web, the Internet, and associate technological changes that are driving the Information Age.

NCLIS is very pleased to announce that all four candidates invited to serve as chairs have accepted the invitations. They are:

Panel One: Reforming the NTIS Business Model: **Chair: Peter Urbach**, former Director, National Technical Information Service (NTIS), publisher and consultant;

Panel Two: Internal Federal Agency Information Needs: **Chair: Kurt Molholm**, Administrator, Defense Technical Information Center (DTIC), Department of Defense, and Chair, CENDI (interagency group of agencies with important scientific and technical information missions and programs);

Panel Three: External (public) Information Needs: **Chair: Miriam Drake**, Dean and Director of Libraries, Georgia Institute of Technology, Atlanta, Georgia; former President, Special Libraries Association; and

Panel Four: Refining Public-Private Sector Roles: **Chair: Wayne Kelley**, former Superintendent of Documents, Government Printing Office, consultant.

All four of these distinguished individuals participated in the NCLIS Stage One study dealing with the planned closure of NTIS. All four are widely respected, both within and well beyond the boundaries of the library, government information handling, and electronic publishing fields. NCLIS is honored that they have agreed to serve in this role, and requests that they be given the fullest support from federal agencies, lower levels of government, public institutions such as universities and hospitals, private corporations, public interest groups, professional associations, and individual private citizens.

The panels will not just look at the negative side of the equation - - that is deficiencies. They will also look at the positive side of the equation. That is, try to identify "success stories" where a law, program, policy, or practice is working particularly well, is innovative, perhaps is because it is interactive, perhaps because it is multimedia, or has a "multiplier impact," and therefore, for these and/or other reasons, could be more broadly emulated. Reviewing what is working well applies to both the public and private sectors, and especially where private sector practices might be adopted and adapted to the Government's programs.

Moreover, the findings and results of the deliberations of each of the four panels will be "cross-fertilized, laterally and horizontally" and, at the most propitious and appropriate time, made available for public review and comment so that as wide a set of viewpoints as is feasible can be solicited. In short, NCLIS does not want the four panels to operate purely in a "stovepipe, vacuum fashion." NCLIS found in its stage one study that broad public participation, and the resultant wide stakeholder "back and forth" interaction, fostered a valuable climate for ferreting out both hidden facts and enlightened opinions.

All stakeholder groups are encouraged to seek participation in the work of all four of the panels, whether they are from the public or private sectors. For example, there is no intention that the participation of library professionals be limited just to panel three, or the participation of government agencies be limited just to panel two, or the participation of private sector individuals be limited just to panels one or four. NCLIS hopes there will be as wide a cross-section of stakeholder representation as is feasible given study constraints on all four panels.

The Board of Experts will be composed of recognized, knowledgeable individuals in the fields of information and communications technologies, economics, legal matters, and perhaps other specialized technical fields, including especially the World Wide Web and the Internet, state-of-the-art online approaches, alternative ways of measuring and valuing both the benefits and costs of creating, adding value to, packaging, and making available and distributing government information resources to the public, and so forth. The Board will also assist NCLIS in predicting major future changes and paradigm shifts they perceive on the horizon.

An NCLIS staff person, consultant, or commissioner will serve as liaison to each panel and the board. Membership on each panel and the board will be recommended by the chairs, NCLIS, and other interested parties such as associations, but the Commission reserves final membership approval authority.

The advisory panels are being asked to:

1. Analyze the key issues and concerns falling within the scope of their respective panels (i.e., perhaps an outdated law, a poorly written or interpreted rule, an obsolete regulation, the need for a new policy, a poorly operating program, deficient agency practice, or some combination thereof) in terms of:

   - What is "wrong," deficient, not working as expected, or is out-of-date; and, if so, exactly how and why; conversely, are there "success stories," wherein something innovative is working especially well, and might be more widely followed;

   - What needs to be done to remedy the deficiency (i.e. the reform(s) needed); did the panel make certain assumptions in order to arrive at a recommended (preferred) course of action, and, if so, what are those assumptions;

   - What barriers and constraints exist, if any, to fully and effectively implementing the recommended reforms; and, conversely, what enabling actions (e.g. new legislation, parlaying the "success stories" of agency initiatives that are especially creative, innovative and effective) can be taken to create more positive conditions for strengthening the dissemination of government information to the public; and

   - Should the reforms be subdivided, timeframe-wise, into short, medium, and long-term reforms, and, if so, how and what are those timeframes?

2. Try to assess the likely technological state-of-the-art capabilities in the short (current to two years), mid (2-5 years) and long term (beyond five years) timeframes that will impact the ability of the government to improve its public information dissemination programs and practices, including hardware, software, networks, and information interchange protocols; in this regard the Board of Experts should be able to provide useful advice; and

3. Prepare and submit a draft final panel report to NCLIS with findings, conclusions, and recommendations; ideally (but not mandatory) include the text, or at least an abstract, or "key points" for any proposed new or amended legislation, executive orders, rules or regulations, other kinds of policy statements (e.g. OMB circulars or bulletins, executive orders), or other requirements.

NCLIS will then forward a copy of the four advisory panel draft reports to the Board of Experts for their review and comment; the panel and board chairs are expected to meet as necessary to discuss how to proceed. Once again, to the extent deadlines permit, the public will be invited to review and comment on first drafts.

TIMETABLE

NCLIS staff comments, and the Board of Experts' comments, as well as the comments of other selected reviewers, will be forwarded to the panel chairs who will make the necessary revisions in their draft reports, and prepare and submit a final report to NCLIS no later than October 1, 2000. NCLIS will consolidate the four panel reports, review the comments of the board and other reviewers, and prepare a final draft overall report.

The draft final consolidated report will be forwarded to the panel chairs and the board chair for review and comment **by November 15, 2000**; the draft report will also be posted to this Web site, and otherwise made available for public review and comment. The interested committees of the Congress will also be asked to review these documents.

NCLIS will prepare and submit its final report to the President and the Congress **December 15, 2000, as required by Senator McCain's Committee**.

For its part, NCLIS will do everything it can to support the panel chairs and the work of the panels. For example, NCLIS staff liaisons will facilitate posting materials, group e-mailings, faxes, duplication and mailings, and so forth.

OTHER ELEMENTS OF THE STUDY

There are other key elements of the NCLIS study beyond the work of the four advisory panels and the Board of Experts. For example, the NCLIS Public-Private Sector Task Force report published in 1982 will be republished with a new preface explaining why the findings, conclusions, and recommendations in the original report are still quite relevant nearly twenty years later, despite very significant interim technological developments. Former NCLIS Chairperson Charles Benton, former NCLIS Executive Director Dean Toni Carbo, and former NCLIS Task Force Chairperson Robert Hayes have all been contacted and have enthusiastically endorsed the Commission's plans in this regard. The republished document will be made widely available.

A variety of additional key research activities are also contemplated. These efforts will begin and proceed in parallel to the work of the panels, and will be under the direction of various volunteers. The results of these activities will be made available to the panels and the Board as soon as they become available. If panels identify additional research activities beyond those here listed, they are encouraged to bring them to the attention of NCLIS. Some of these already underway include (short, informal and unofficial titles are used for brevity sake herein):

1. Update the Congressional Research Service (CRS) review "Compilation of Statutes Authorizing Dissemination of Government Information to the Public" dated March 29, 1996, co-authored by Jane Bortnick Griffith, Harold C. Relyea and Frances A. Bufalo;

2. Update the "National Information Policies Bibliography" published in 1996 by Dean Toni Carbo of the School of Information Sciences of the University of Pittsburgh, including the newly-acquired document collection from former CRS official Robert Chartrand;

3. Informal Survey of Selected Federal Agency Public Information Dissemination Programs and Practices, including agency Websites, classified by agency type such as cabinet department, regulatory, etc., by subject matter coverage, by special interests targeted, and so forth; coordinate closely with Panel Two;

4. Update Phase 1 of the 1998 GPO/Westat study to ensure NCLIS is fully aware of the state-of-the-art Federal IT situation, initially done by the National Academy of Sciences, Computer Sciences and Technology Board; coordinate closely with the Board of Experts;

5. Communicate and/or meet with representatives of the NIIAC, Access America/NPR, and the very recently announced FirstGov.Gov and WebGov.Gov initiatives, and the Government[-]Connection.Com initiative; GPO including FDLP/Sales Program/GPO Access; LC Thomas/Other Library of Congress Programs and services; Statistical Agencies; public information user groups such as Americans Communicating Electronically (ACE) and the Association of Public Data Users (APDU); professional library associations including ALA, SLA, ARL, ACRL, PLA, AALL ULC and COSLA; coordinate closely with Panel Three;

6. Secure assistance of experienced "legislative drafter specialists" to help prepare recommended legislation, rules, regulations, executive orders, OMB circulars and bulletins, other kinds of policy statements, and so forth;

7. Special coordination with the CIO Council and its committees, with responsibility for public information creation, handling, storage, retrieval, dissemination, archiving, and so forth, especially those overseeing the FirstGov.Gov and E-Gov initiatives; coordinate closely with Panel Two;

8. Preparation of a comprehensive Stage Two Study bibliography;

9. Preparation of Key General Reference Annexes, including a comprehensive "Public Information Resources Map" which could serve as a working matrix that classifies, cross-indexes and correlates in other useful ways the full array of:

    - Federal information laws, public information resources, legislative and executive authorities and responsibilities,

    - Agency public information roles, products, and services, both central service bureau and individual agencies (sorted by subject category, targeted beneficiary entitlement groups, and so forth),

    - The various major Federal information beneficiary and user groups,

    - How public information programs and services are financed (e.g. appropriations, revolving funds, user fees),

    - Whether fees are charged for a government information product or service, or not, and

    - So forth.

10. A background section will be prepared for the final report succinctly describing in highlight fashion "major relevant Information Age paradigm shifts" which have/are occurring during the transition from the pre-electronic to the electronic era, such as:

    - How the basic ideas of "access" vs. "dissemination" are changing significantly;

    - How agency and private sector roles, responsibilities, missions, and methods are being realigned,

- Permanent public access vs. impermanent public access to current information,
- Paper-based collections being replaced by electronic databases,
- E-gov vs. paper-based gov, and
- About two dozen additional major paradigm shifts.

FINAL REPORT TO THE CONGRESS AND THE PRESIDENT

NCLIS will receive inputs for its final report throughout the course of the study from:

1. The work of the four advisory panels;

2. The work of the Board of Experts;

3. Results of review of the various research activities, including literature reviews, the database of current information laws, and so on;

4. Results of the selected federal agency surveys of their principal public information dissemination programs and practices;

5. Meetings with the CIO Council and its committees, and other key interagency groups including the Federal Publishers Committee, the Interagency Committee on Publishing and Printing, the Federal Library and Information Center Committee, the Federal Webmasters Group, and others;

6. Meetings with library and information professional associations, including ALA, SLA, AALL, COSLA, ASIS, ARL, ACRL, ULC, PLA, and others;

7. Meetings with State, local, and tribal library and information professional associations, and with special and specialized societies;

8. Meetings with private sector groups including trade and industry associations, unions, and others;

9. Meetings with public information user groups, including ACE and APDU;

10. Public responses to NCLIS Web Site postings, and other relevant web sites including, notably, the new e-Gov web site launched by the Senate Governmental Affairs committee;

11. Inputs from other sources

NCLIS's final report will include a foreword, acknowledgements paragraph, background section, a findings section, a conclusions section, and a recommendations section, plus a bibliography, a list of study participants, a chronology, and a variety of annexes. The analysis undertaken to prepare this report will take into account advantages and disadvantages of alternative proposed courses of action over the current situation, a preferred course of action and how and why it was selected, how those recommendations will "set the stage" for public information dissemination in the next 10/20 years at least (but ideally longer if feasible), savings (including benefits to citizens, not just costs), and other analytical justifications. The emphasis will be on trying to answer the challenge: "How will the recommended, preferred course of action improve over what is being done now?" To the extent time and budget constraints permit, key implementation follow-on steps and actions required will also be identified. The recommendations will also be time-phased in a "transition plan" type of format in order to differentiate short range, mid-range, and longer term actions.

VOLUNTEERS NEEDED

The initially established NTIS Study "Stakeholder Group" of about 100 people has already been alerted electronically to the next steps in the study, and volunteers for various tasks solicited, including panel/board membership, *and related study research project such as those listed above*. Many volunteers have already stepped forward, but more are needed. Additional participation is hereby invited; individuals may contact either a panel chair, or NCLIS. Moreover, volunteers may undertake various tasks without necessarily having to be a member of a panel. Some individuals may wish to serve on a panel in a proactive role whereas others may wish to remain in a more passive "observer status" to track progress and review deliverables.

PUBLIC REVIEW AND COMMENT

The vehicle of the NCLIS Website will again be used as a primary communications and coordination vehicle for securing involvement and participation, and obtaining public review and comment at key stages as the study proceeds and deliverables are produced in draft. Public comment is welcomed at any time.

APPENDIX 14. SOME ISSUES AND CONCERNS TO ADDRESS

SOME ISSUES AND CONCERNS THE RESOLUTION OF WHICH THE NCLIS STUDY OF PUBLIC INFORMATION REFORMS WILL ADDRESS AS OBJECTIVES

Note: This list of issues and concerns was developed in July 2000 and reflects the Commission's ideas at the beginning of the assessment. As was intended, these issues were expanded and changed as circumstances and opportunities warranted.

Developed by F. Woody Horton, NCLIS Consultant
In Consultation with the Commissioners and Staff

BACKGROUND[3]

Fundamentally, the NCLIS Comprehensive Assessment of Public Information Dissemination stems from the August 12, 1999 announcement by the Department of Commerce to close NTIS because, in the Commerce view, "NTIS cannot continue in its role as a sales agent of government information when the same information is available for free on agency web sites."

In its Preliminary Assessment of the NTIS Closure final study report published in March, 2000, NCLIS took the view that the fundamental issues and concerns raised by the "NTIS matter" (such as downloading government information for free or relatively minimal costs compared to the price of print copies) are not issues and concerns that are limited to scientific and technical government information laws, policies, programs, and services. Instead they are an inseparable part of the broader need to reform government information dissemination to the public generally, not limited to scientific and technical information.

There are both *general* issues and concerns being raised, as well as many *specific* ones. The NCLIS study cannot possibly deal exhaustively with all of the issues and concerns involved given the limited timeframe for the study, and the very limited available resources (the study will use volunteer help primarily; see the Study Plan Outline separately posted). Therefore, it is imperative that a realistic study plan be adopted that takes these constraints into account, but at the same time tries to live up to expectations as to what the study will accomplish.

It should also be noted that the President and the Congress are expecting a series of concrete, specific recommendations pointing the way to dealing with the issues and concerns documented, not merely a descriptive narrative that "illuminates" the challenges and problems.

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[3] Available at http://www.nclis.gov/govt/assess/assess.appen14.pdf and at http://www.nclis.gov/govt/assess/concerns.html. This appendix was last revised on July 25, 2000.

GENERAL ISSUES AND CONCERNS

From a dissemination of government information to the public standpoint:

1. How is the dramatic expansion of the availability of, accessibility to, searchability of, retrievability of (e.g. downloading) and deliverability of its government data, information, and knowledge resources, virtually at no charge to the public via agency web sites on the World Wide Web and the Internet, very significantly changing and realigning the traditional missions, roles, functions, authorities, and responsibilities of the major government information players and stakeholders? These players and stakeholders include:

   a. The federal government

   - Congress and its committees as well as Legislative Branch agencies;

   - The Judicial Branch;

   - The President and Executive Branch agencies (e.g. OMB, OSTP);

   - Major central government information resource service agencies (e.g. GPO, NTIS, national libraries, federal libraries and information centers, Library of Congress, etc.);

   - Individual federal agencies, including chief information officers and IRM departments, printers and publishers, librarians, public affairs officers, records officers, webmasters, and other functional groups, both program and central staff, concerned with information creating, organizing, storing, and distributing information resources to users;

   - The Federal Depository Library system;

   - Federal government information analysis, dissemination and referral centers, clearinghouses, repositories, depositories, archives and records facilities, and related types of service organizations; and

   - Historical offices and officers.

   b. Lower levels of government, including tribal governments

   - State and local government chief information officers;

   - State and local government archives and records officers

   - State and local government libraries and librarians;

   - Public libraries and librarians, urban and rural;

   - School libraries and librarians at all levels;

   - Media centers and media specialists at all levels; and

   - Community centers.

   c. The commercial for-profit sector, including entrepreneurs

   - Commercial for-profit publishers and information providers of government information, including information brokers and consultants;

   - Telecommunications service providers;

   - Computer and automation services providers; and

   - Online service providers.

d.   Academic, research and other institutions

- University chief information officers;

- Academic, research and other institutional publishers and information providers;

- Hospital chief information officers;

- Medical publishers and information providers;

- Science and technology research publishers and information providers;

- Data centers and data administrators

- Information analysis centers and information analysts;

- Information systems and Management Information Systems (MIS) officials; and

- Medical and other kinds of institutional records officials.

e.   The not-for-profit sector

- Philanthropic and other foundation chief information officers;

- Consulting organization chief information officers; and

- Not-for-profit publishers and information providers.

f.   Individual citizens

- Individuals (for professional or work-related, educational, health care, consumer, recreational or other personal pursuits);

- Senior citizens;

- Youth;

- Minority groups;

- Rural and remote community dwellers;

- Disadvantaged and disabled citizens; and

- Public interest groups.

2.   What are the major economic shifts and dislocations, including incentives and disincentives, that are occurring? The sectors affected include:

- Federal agency producers and providers of government information;

- Collectors of government information, whether directly by the government or by its agents;

- Organizers and "value-adders" of, and for, public domain knowledge holdings and information services for the public;

- Custodians of government information and records, both temporary and permanent;

- Distributors of government information, both public and private; and

- Consumer-users of government information.

What are the consequences of these shifts and dislocations, both positive and negative? What new business models are appropriate, "state-of-the-art", feasible, and practical? What return is the government receiving from its investments (ROI) in

producing and disseminating information to the public, including the commercial for-profit sector?

3. What are the legal and policy constraints to creating optimal conditions and a positive and constructive environment so that the federal government can effectively position itself to exploit and maximize the positive advantages and opportunities of the changes occurring, and minimize the disadvantages and risks? Conversely, what enabling steps might be taken to put in place new and strengthened legal and policy tools to assist policy officials in exploiting more fully the benefits and values of electronic information approaches?

4. What are the likely major information handling and interchange capabilities going to be (hardware, software, networking, and so on) that will enable (or constrain) optimal models for continuing to strengthen government information dissemination to the public? The timeframes to consider are:

    •   The short-term horizon from the present up to two years;

    •   The mid-term horizon from 2-5 years; and

    •   The long-term horizon from 5 years out.

5. What information produced or collected by the government cannot be made publicly available under treaties or laws or contractual agreements? Examples to consider include information (a) received under foreign exchange agreements; (b) pertaining to confidential personal or business records of individuals, commercial firms, or institutions; or (c) pertaining to national security matters. How can those safeguards and protections be harmonized in the interests of maximizing the information that can be made available to the public on the one hand, while at the same time minimizing the risk of illegal or inadvertent disclosure of protected information on the other?

6. How can the public and private sectors work together more effectively in partnership, collaborative, and complementary modes to make government information more easily and cost-effectively findable, searchable, retrievable, and deliverable by and to the public, in diverse mediums and formats, both "plain vanilla" and highly customized and specialized, than otherwise could be accomplished if the two sectors operated independently, in an uncoordinated, or even confrontational fashion? What "win-win scenarios" and models are appropriate?

SPECIFIC ISSUES AND CONCERNS

1. How can the key information resources management policy concepts be, first, institutionalized in appropriate statutes and, second, spelled out in Executive Branch policies such as OMB circulars and bulletins, and/or perhaps an Executive Order, with respect to their definitions, scope and applicability, policies, agency authorities and responsibilities, and other particulars? The four key IRM policy concepts are:

    •   Permanent public access to government information;

    •   No fee or minimal fee public access to government information (e.g. perhaps replacing some document fees with free electronic access on the Internet);

    •   Permanent records retention of official agency records;

    •   Authentication of official government information; and

    •   Preservation of government information to protect against medium or format obsolescence, degradation, or destruction.

Note: OMB Circular A-130, The Management of Federal Information Resources, is currently undergoing revision, and although the period for public comment has passed, it still may be possible to make recommendations to the Office of Information and Regulatory Affairs (OIRA).[4]

2. At the agency level, how can we ensure that (a) internal directives effectively address and implement the various legal and procedural requirements implicit in the foregoing key information resources management policy concepts, and (b) actual agency practices reflect both the spirit and the letter of both the government-wide guidance and internal agency directives? One example is by using "best practices" approaches.

3. How can the "single, one stop service" idea applied to accessing government information, using a single, central, authoritative, and comprehensive series of indexes and search engines, be institutionalized? This should be done so that users of government information do not have to necessarily first know:

   - In what agency (perhaps many levels down), and on which agency web site (perhaps a brand new web site, or conversely one which has been dismantled recently) the information they are seeking is (or was) housed, recognizing that government information is dispersed, fragmented, and compartmentalized all across government in all branches and agencies, in quasi-government institutions, in private institutions, and elsewhere;

   - On what kind of computer platform the information, if electronic, is based;

   - In what kind of facility, the information is stored, if paper-based, or in microform, CD-ROM or other pre-electronic medium or format;

   - Which kind of free or proprietary software may be needed to search for, access, retrieve, and download information once located, including the need for special training; and

   - In what medium or format the information may be organized, stored, whether, for example, in electronic mediums and formats on web sites such as electronic publications, electronic databases, bulletin boards, or other electronic configurations, or in paper-based, microfiche, CD-ROM, or other pre-electronic medium collections, such as stored in office files, on library shelves, in records or archival or museum collections, and elsewhere.

   In this regard, the FirstGov and WebGov portal initiatives currently being piloted and developed by the NPR Clearinghouse Partnerships group under the aegis of the President's Management Council should be investigated, as well as the GovernmentConnection.Com initiatives.

4. Should the government operate parallel, competing programs involving disseminating government information products and services to the public, or consolidate programs and services into a single, integrated program?

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[4] The revision of OMB Circular A-130 was completed during the course of the study. The revised circular is available at http://www.whitehouse.gov/omb/circulars/a130/a130trans4.html. U.S. Office of Management and Budget, "Management of Federal Information Resources," OMB Circular A-130, Washington, DC: Office of Management and Budget, November 30, 2000.

5. How can the actions contemplated herein be time-phased so that allowance is made for transition periods in order to move smoothly from actions that could and should be taken in the short-term (perhaps immediately or in the next year), the mid-term (perhaps 2-5 years from now), or in the long-term (perhaps further out than 5 years)?

6. What steps can educational institutions and organizations take, both public and private sector, both academic and commercial training companies, take to help bring individuals who do not have the requisite level of computer and information literacy skills up to at least a minimal level of proficiency so that they can utilize computers and other kinds of information appliances to find and retrieve government information? In this regard, what are the opportunities for making greater use of distance learning? How information is assimilated from online sources versus how it is assimilated from print sources should also be explored? (The Stephen King book "The Plant" being made available online in chapter installments is a case in point.)

7. What actions can the public and private sectors take to help the financially, physically, culturally, racially, age and gender, and intellectually disabled and disadvantaged populations to access government information more efficiently and cost-effectively?

APPENDIX 15. SOME IMPORTANT INFORMATION AGE PARADIGMS SHIFTS AND THEIR ASSOCIATED MYTHS, AND REALITIES

Written by F. Woody Horton, NCLIS Consultant

PREFATORY NOTE[5]

The Commission believes that in order for the President, the Congress, citizens, and stakeholder groups to make informed judgments as to the soundness of this study's findings, conclusions, and recommendations, it would be helpful to first identify some key "Information Age major paradigm shifts," some common myths and realities that are associated with each of them, a judgment as to what the reality is in each case, and suggestions for exposing the myths. These paradigm shifts, myths, realities, and debunking suggestions directly or indirectly shape the nature, the scope, the feasibility, and the timing of the reforms recommended in the NCLIS report.

Some of these paradigm shifts, and their associated myths and realities, are technological in character. Others are socio-cultural, economic, political or philosophical. Individually they each pose one or more arguable assertions that are endlessly debated. Opposing stakeholders have often already polarized their public positions and staked out their turf interests in the halls of Congress, in the fight for public opinion in the media, and in the competition for market share. Together, these paradigm shifts, myths, and realities make up a formidable tapestry of attitudes and behaviors that are influencing the mindset of policy-makers, the media, academicians and researchers, the commercial information and communication marketplace, Wall Street, and the individual citizen.

The Commission has tried to be as objective as possible by playing an honest broker role in bringing together the constituencies and the stakeholders in helping to identify these paradigm shifts, myths, and realities, and in undertaking the substantial scholarly research task of reviewing the literature and talking to experts in the various disciplines.

Major Paradigm Shifts

1. *The Paradigm Shift*. **Government information for the public is increasingly and rapidly being discontinued in ink-on-paper, microforms, and other pre-electronic formats and mediums, and instead being made available in electronic formats and mediums—especially online, utilizing the World Wide Web and the Internet. There are both upsides and downsides to this initiative. One negative consequence is the erosion of permanent public availability of government information. Another dysfunctional consequence is the erosion of the government's ability to preserve its information holdings in formats and mediums that will remain functional indefinitely, even if the technologies used to create and store the information in the first place obsolesce.**

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[5] Available at http://www.nclis.gov/govt/assess/assess.appen15.pdf. This appendix was last revised on November 7, 2000.

The advent of the Internet and the World Wide Web has brought with it the concomitant advantage of enabling and encouraging federal agencies to increasingly create, store, transfer, make available and accessible their government information products and services in online electronic forms by bringing those products and services up on thousands of agency web sites which are directly searchable or searchable through portals such as FirstGov.[6] The website is inexorably replacing the pre-electronic repositories and depositories of hard copy documents. Currently, both traditional and electronic federal agency and federal depository libraries, archives, record centers, reading rooms, and information centers exist "side-by-side," but the fraction of the federal government's paper-based data, documents, and literature is very rapidly going down while at the same time the fraction of its electronically-based holdings are going up. This major paradigm shift is presenting enormous challenges to the established federal information infrastructure for housing and disseminating government information to the public. The roles, authorities, responsibilities, rights, and privileges of the government, commercial information providers, information handling intermediaries and specialists such as librarians, technical information specialists, and archival and records specialists, are all shifting and being redefined in order to cope with the new information environment. This study recommends various reforms in laws, policies, programs, and agency practices to help the President and the Congress, as well as the Judiciary, cope with the transition from paper to electrons.

- **The Myth:** All of the Federal Government's public information holdings are universally available and conveniently accessible on the World Wide Web to everyone—citizens, students, job-seekers, government entitlement seekers, businesses, lower levels of government, or other kinds of individuals or groups, and they can find, verify the authenticity of the information, and download any or all of it easily, quickly, and free of charge, and remain confident that technologies will always exist to preserve the information in viable and functioning formats and mediums, so there is no longer any need for the government to plan, manage, and control government information, nor is there any need any longer for maintaining and preserving pre-electronic mediums and formats such as ink-on-paper publications or microfiche, so information in those obsolete mediums and formats can be deleted, archived permanently, or destroyed.

- **The Reality:** Only a fraction of the federal government's total data, document, and literature holdings are universally available online, and only a fraction of what is available online is easily identifiable, efficiently locatable, economically searchable, and conveniently accessible for viewing or downloading from the Web. Moreover, many citizens do not know where to find the government information they want and need, even if they are computer literate, know how to "call it out," or how to search for and retrieve it. Not all citizens have easy or affordable access to a computer or a telephone they can use. Nor are physically, financially, or otherwise disadvantaged individuals able to find, afford, or efficiently use such equipment, software, and detailed procedures to search for government information because it is often inconveniently formatted, not well customized to the special needs of the disadvantaged, or not understandable because of presentation barriers. Finally, information technologies are becoming obsolete continuously, thus rendering information holdings that were created and are being housed in obsolete technologies vulnerable to preservation requirements.

- **Debunking the Myth:** A careful, comprehensive, and authoritative analysis of just what government information is available on the Internet, how it is being searched and retrieved, who is using what kinds of information and for what purposes, and similar considerations, is required. For example, what classes of publications are available in full text form? How much of it is free on government sites and how much is on commercial sites for a fee? For example, very few NTIS reports are available for free on the Internet in full text form. There is a substantial amount of basic bibliographic information available for free, but most full text reports are on paid commercial sties. Can all of this be quantified to NTIS reports, for Superintendent of Documents

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[6] Available at http://www.firstgov.gov/. A preliminary analysis of First Gov is available in Appendix 19.

publications, or for other classes of publications? Based on current trends, how is the picture likely to change in the next few years? Based on the amount of content in "all government publications," what would it take in terms of initial and ongoing operating cost to put all government publications on the Internet? A combination of staff calculations of volume and experts roughing out costs could provide some useful estimates. Finally, the concepts of "Permanent Public Availability" of government information, and the "Technological Preservation" of government information must be statutorily based; Congress should therefore amend an appropriate existing law, such as the Paperwork Reduction Act, as quickly as possible for these purposes.

2. *The Paradigm Shift*: **The traditional standards and guidelines for bibliographically controlling government information were developed and used by librarians and other information professionals before the advent of the Web and the Internet. They are failing now because they are not being appropriately modified, updated, and adapted to electronic publishing, and/or they are starting to be modified, but are being applied haphazardly and ineffectively in the rush to bring volumes of electronic materials up on the Web as quickly as possible.**

Hundreds of years of development, testing, and refining traditional bibliographic tools that are applied to the creation, production, and publishing of ink-on-paper publications (whether government or not) have been put aside in the rush to bring more and more electronic government information materials up online. While it is true that substantially more government information is now available to the computer literate public than ever before, the problems of searching for this information efficiently and effectively are compounded immeasurably because of the failure of agencies to apply traditional bibliographic guidelines to organizing and making more accessible materials that were created in electronic form in the first place ("born digital" to use the argot of the day). The major functional areas of accessioning, cataloging, abstracting, indexing, and related areas are all involved.

- **The Myth**: Modern website search engines, such as FirstGov, can find precisely, and only, whatever government information is available on federal agency websites that a user needs and believes is relevant. This can be done without expensive and time-consuming cataloging, abstracting, and indexing by librarians and other information professionals. The information databases are accurate, complete, authentic, timely, indexed, cross-indexed, searchable, and the information once found, can be delivered in the right format, at the right time, in the right place.

- **The Reality**: 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. Haphazardly created and organized source documents and publications inevitably results in expensive, fruitless searches, with thousands, tens of thousands, or even millions of "hits," but yielding little or no positive results and compounding the frustration and anxiety of searchers who are confronted with an even larger information overload problem than they had in the first place.

- **Debunking the Myth**: Careful pilot tests must be conducted to evaluate and measure the benefit:cost performance ratios of using modern search engines, correlated with varying degrees and qualities of bibliographically controlled electronic materials. For example, if one million NTIS reports were on the Internet in full text form, how well would a modern search engine perform in locating only relevant reports and not identifying irrelevant materials? What would such a search engine cost to build and run? What if some of the content is available only as scanned images of pages that cannot be searched? What multiplier would have to be used to include all government information? If a search is limited to bibliographic, indexing, and abstracting material, instead of full text, what happens to costs and search results?

3. *The Paradigm Shift*: **Information content is increasingly being severed from its information conduit (container), thereby greatly exacerbating the problems of understanding its full meaning and significance because its context (or provenance as the historian or scientist would say) has been lost. Attributing the information correctly to its true source and origin is sometimes impossible, and evaluating its credibility and authenticity is extremely difficult. Metaphorically, "information orphans" are increasingly being created with substantial burdens and costs to information users.**

More and more information is being put into online databases from which very specific information items may be searched for and retrieved "on demand," and "just in time." The traditional and conventional way to organizing large quantities of related information was to organize it all into discrete filing systems, recordkeeping systems, document collections, and publication depositories, which were often program-based, function-based, system-based, etc., and which would be revised and updated, often infrequently. However, these conventional information systems are difficult to cross-search through and retrieve from because they are organized, indexed, searched, and mined in widely different ways. This has sometimes been referred to in the literature as the "stovepipe" phenomenon—vertical systems organization with little or no horizontal search capability. Moreover, even if several items from different systems and files were located, it was often impractical or even impossible to earmark ("bookmark" to use the electronic term) items located in different systems into the same integrated "retrievable capsule." Online databases change all of that. Now many different information items from many different "vertical" information files or systems can be efficiently and effectively cross-searched and retrieved, and then viewed, downloaded or otherwise customized for delivery in whatever medium(s) or format(s) the user requires, economically and just in time, when it is needed. However, one "hidden" price to be paid is that the retrieved material is often retrieved without a clear indication as to its source, and origin. In short, its context has been lost. Then, when that same item is reused, re-communicated, or republished, say in an official government document, the author, if challenged, cannot ascertain its authenticity and attest to its reliability.

- **The Myth**: Information content, and its source or origin (and therefore context), are always inseparable, and users can always easily discern and verify the authenticity of the source, as well as understand the context in which the information originally reposed.

- **The Reality**: There is an increasing danger as more and more agency information is organized in the form of online databases to facilitate the ability search, cross-index, and retrieve information, that the original source and origin from whence the information came becomes increasingly difficult to verify, thus creating the problem of attesting to the authenticity and official status of an information item that has been orphaned from its parent.

- **Debunking the Myth:** New technical information attribution concepts and technologies, such as the Unique Object Identifier, offer the promise of "automatically" imprinting information so that its source, origin, and context are not lost when the information is removed from its original locus. However, these developments will require strong standards support and meanwhile the problem is exacerbated. The federal information community, under the aegis of the CIO Council, should ensure that such a development is afforded high priority.

4. *The Paradigm Shift*: **A recent National Academy of Sciences report says, "information is increasingly becoming an event to be viewed or experienced, rather than packaged as an artifact to be kept and archived."**

Of all the paradigms discussed herein, this one is perhaps the most fundamental and far-reaching. It accounts for a mindset that is becoming pervasive. For example, an MIT professor recently told a

library gathering "I haven't been to the library in the last four years," because, she explained, "research (in my field) is evolving so quickly that there is no use anymore in publishing in paper."

In a recent meeting between NCLIS and a government official, a young recent computer science graduate, told NCLIS that in his field "everything I need to know is on the web or I can communicate with my colleagues on the web so I don't need to research historical information, so I don't see why libraries or other government depositories need to keep information for more than a year at the most."

- **The Myth**: All of mankind is inexorably moving into a kind of real-time mode whereby the "present tense of the human record " is the only thing that will be really important anymore. The "past tense or historical record" is increasingly of limited value according to this theory, and will ultimately become the province of a few seedy historians keeping dusty electronic artifacts on remote Tibetan mountaintops. Sayings such as "learning lessons from the past," and "the past is prologue," are passé' in the Internet Age because developments are occurring too swiftly to allow time to review past experiences and the history of the human record.

- **The Reality:** It can be argued that this mindset was behind the Department of Commerce's announcement in 1999 that it wanted to close down NTIS and transfer its holdings and operations to the Library of Congress. In the public announcement there was a "concession" that information should be held for three years, but by inference, no longer. Yet statistics show that nearly two-thirds of all requests for NTIS materials are for over materials that are over three years old, and one third is for requests for materials that are over 10 years old. This point of view, to the extent that it is apparently now beginning to drive government policy, could easily result in the dangerous loss of the historical record of the United States. While some scientists in extremely fast-moving fields such as computer science may take this view, certainly when it comes to the arts, to the humanities, to the social sciences, and even the traditional physical sciences of physics, mathematics, and chemistry, the knowledge base of past discoveries is absolutely essential to the forward progress of those fields, and the creation of new knowledge. Associated with this phenomenon is the increasing pressure to forego permanent records retention in favor of temporary records retention, thereby eroding the ability of the National Archives and Records Administration (NARA) to comply with its statutory mandate to preserve the federal record.

- **Debunking the Myth:** The irony of this situation is that modern electronic information and communication technologies are making the mass storage of, the searching for, and the retrieval of information from electronic repositories a technically feasible and cost-effective reality. So why, in the face of these technological advances, would one even want to "throw everything out that is a year or so old" if it can be held efficiently and cost-effectively in electronic storage? Moreover, it would not at all be difficult to arrange a controlled pilot test whereby a researcher was given a "bench challenge" but his/her access to information more than a year old precluded, while another researcher given the same challenge was given access to historical information. The results could then be compared. Can the U.S. government really afford to encourage and foster this mindset when the risk of a failed policy may well result in the irretrievable loss of the U.S. world leadership in science and technology in so many fields, not to mention all of the other disciplines? NCLIS admonishes national leaders to make it crystal clear that preservation of the human record is absolutely vital to our democracy, lest government officials get the mistaken idea that they can forget about yesterday's information with complete impunity. To return to the National Academy of Sciences report, NCLIS would amend the statement to read: "information is increasingly becoming an event to be viewed or experienced, but information must always be packaged as an artifact to be kept and archived in order to preserve mankind's record and hold leaders accountable."

5. *The Paradigm Shift***: Information life cycle management authorities and responsibilities within departments and agencies are dispersed, fragmented, decentralized, and compartmentalized. Internal agency information management continues to be split from external agency information management, essentially by two different worlds. Moreover, the increasing movement to electronic publishing has exacerbated the problem of agency-wide oversight of electronic government information because no single office in the agency has clear, overall, lead authority for the life cycle management of both internal and external agency data, documents, and literature, although the Chief Information Officer (CIO), the public affairs office, and the printing and publishing office all have partial responsibility.**

Information having a *life cycle* is not a new idea, whether government information or *any* information for that matter. A useful analogue often mentioned is the concept of the *product life cycle*. That is, in the business world, as taught in business schools, a product is "born," "matures," "demand levels off," and then customer disinterest sets in and product sales decline and finally the product is taken out of production and off the shelves. Another analogue sometimes used is the biological life cycle. That is, an organism is born, grows, matures, declines, and eventually dies.

Applied to the creation, handling, disposition, and archiving of information, the life cycle concept follows a similar circular path, which is both endless and continuous. However, the usual starting point is when information is first created, whether that is a document, an e-mail message, or anything else, regardless of format or medium. One useful portrayal of the steps in the life cycle follows, although the authors concede there may be many variations of this graphic:

Government information is:

- **Step 1**: Created and produced (by authors in all agencies, in all branches, at all levels, and in many different formats and mediums).

- **Step 2**: Cataloged and indexed (metadata tools applied).

- **Step 3**: Temporary and permanent availability and entitlement established (ownership and disclosure rights of creators, publishers, disseminators, licensees, franchisees).

- **Step 4**: Published in the public domain or withheld from disclosure pursuant to a wide variety of statutes, internal agency policies, foreign agreements, and so forth.

- **Step 5**: Put into files, databases, collections, holdings, and other storage repositories.

- **Step 6**: Communicated, disseminated, and distributed.

- **Step 7**: Searched for and retrieved (full text, abstracts, key words).

- **Step 8**: Used for decision-making and problem solving.

- **Step 9**: Archived.

- **Step 10**: Re-used over and over again by government officials, journalists, archivists, researchers, citizens, and others (information recycled).

- **Step 11**: Disposed of (temporarily or permanently).

- **Step 12**: Expunged or destroyed if permanent retention period exceeded.

- **Step 13**: Need for new information to replace old information established.

Obviously the above steps in the Information Life Cycle could be expanded or compressed, depending on one's particular purposes. Moreover, there is certainly room for debate has to how we've framed the sequence of specific steps or stages, and depicted their inter-relationships, and admittedly rather

cryptically defined them. Nor do we mean to imply simply because the steps are schematically portrayed as a circle that all steps necessarily always occur iteratively in the same "prescribed" sequence. Oftentimes some steps may proceed in parallel, one or more steps may be "leapfrogged," or the consequences of dealing with the information in electronic formats and mediums are different than those used when the data is in pre-electronic forms. But, for working purposes, notwithstanding these caveats, we would like to move forward with our discussion using this twelve-step methodology. Perhaps one of the benefits of this paper will be to refine and improve the above construct.

- **The Myth:** Every step and stage in the information life cycle is completely independent of every other step and stage in the life cycle, both those that occurred before it, and those that will occur after it. There is no point in trying to link and interconnect the steps and stages in the life cycle because trying to specify the precise nature of those links would be so time-consuming and expensive that one would spend more time specifying the links than paying attention to the step or stage in question. Besides, each step or stage probably involves different people, with different skills and different expertise, operating in different divisions and units in the overall organization, with different authorities and responsibilities, and different goals and objectives, and all using different hardware and software and systems and networks. In short, "why should we mind somebody else's business when we can barely manage our own?"

- **The Reality:** Each step and stage in the information life cycle is interdependent with and on every step that preceded it and every step that will occur after it. If one ignores these interdependencies, and counter dependencies, one pays the price of recreating information at each stage of the life cycle, in a unique and customized format and medium that may or may not harmonize with the formats and mediums that preceded that step and will follow it. Many years ago, in the 1950's, the concept of Source Data Automation (SDA) was in vogue. But it was a concept many years ahead of its time. Essentially this concept was closely linked to the life cycle of information idea. It urged information creators (such as authors and publishers) to create information products and processes in formats and mediums that could easily and cheaply be converted and be made minimally compatible with, if not entirely consistent, to formats and mediums utilized for handling the same information later in the life cycle. At that time the pressure to automate processes was just beginning, and converting "manual" products and processes, as they were called in those days, to computer-assisted products and processes was so great that the SDA concept never got very far. But the reality today is that most systems and sub-systems that handle information are incompatible and inconsistent, and there is an entire industry "systems integration" that has evolved just to help pay the price of our failure to follow the source data automation and information life cycle precepts.

- **Debunking the Myth:** We need to return to the basic precepts of source data automation and life cycle management and ensure that they are adequately taken into account when new information products and processes are first on the drawing boards. It is too late to deal with the problem once products and processes have been designed, developed, tested, and debugged. Then the investments are virtually irreversible. To do this, the government needs to strengthen its policies and procedures, and demonstrate the practical applicability of the concepts to the bottom line of agency budgets and information use efficiency. To that end, revisions are needed in the Paperwork Reduction Act and OMB Circular A-130, in particular. Those suggested revisions are dealt with in the Commission's final report in greater detail. They are also spelled out in another NCLIS staff paper entitled "The Government Information Life Cycle Management Concept."

6. *The Paradigm Shift***: There appears to be a trend in federal agencies to replace a comparatively much more proactive policy to disseminate government information to the public, including reaching out to the public to notify them of what was available to them, with relatively much more passive policies that shift the burden of knowing what**

government information exists, then trying to identify it, then find it, and then access it. The consequences of this shift in agency stance are far-reaching, especially in terms of exacerbating the Digital Divide.

It is not surprising that as agencies realized the power and efficiency of the web enabling them to publish vastly increased quantities of information on their sites (as opposed to utilizing pre-electronic formats and mediums such as ink-on-paper and microforms) they rather naturally assumed that they had not only, in one fell swoop as it were, satisfied the need to provide *access* to public information, but also simultaneously had *disseminated* it as well*!* In short, they shifted the burden of dissemination from themselves to the public. This is a complex and difficult policy area, and certainly "the dust has not yet settled" on the debates that have, and will continue to occur both within the Administration and the Congress on the matter. *The policy question is: Does providing electronic access to digital document images constitute dissemination within the meaning of the various statutes that provide for an agency to dissemination certain of its information holdings to the public?* There are arguments on both sides. Certainly the agencies have a strong argument that they should not have to duplicate electronic accessibility with hard copy dissemination of the same information - - that is absurd. But, at the same time, there is a gray policy area in the middle. Dissemination in the pre-electronic era carried with it the idea that an agency would make a special effort to ensure that their public information products did, indeed, reach their intended audiences, both general and special. This was accomplished through the extensive use of distribution and mailing lists that were kept current. *But in the electronic era, the use of distribution and mailing lists clearly defeats the purpose of broadcasting the availability of and accessibility to the information electronically, utilizing the vehicle of the website.* And the possible use of "cookies" as a device for verifying whether or not a certain information product did or did not reach its intended audiences is in many cases at least controversial if not downright illegal and unethical. The one exception to this might be where the agency intends that its public information be available to all sectors of society, without regard to special, targeted sub-populations (e.g. the disadvantaged). Yet, it is an arguable proposition that all agency public information should be disseminated to all sectors of society. It certainly never was in the pre-Internet era. Has the mere fact that it can be disseminated in the Internet era changed that?

- **The Myth:** Providing access to public information in electronic form on agency websites removes the obligation of federal agencies to ensure that the information which they have posted to their websites has, indeed, reached its intended audiences. Information dissemination, in short, is a passé' concept that has been completely supplanted by electronic information access in the Internet era.

- **The Reality:** Providing access to public information in electronic form on agency websites does not remove the obligation of federal agencies to ensure that the information they have posted does reach its intended audiences, especially in instances where the sub-population(s) to be reached are disadvantaged in some respect. The broadest definition of "disadvantaged" includes minorities, senior citizens, school age children, the physically and emotionally disabled, the economically disadvantaged, and the computer and information illiterate. It also includes Americans living in tribal areas and in relatively inaccessible rural areas remote from normal infrastructure services provided urban populations such as electricity, telephones, and so forth.

- **Debunking the Myth:** The Federal Government must rethink its public information dissemination posture in the Internet era, taking into account the disappearance or downgrading of the use of distribution and mailing lists, and other tools and techniques, for ensuring that information disseminated to the public did, indeed, reach the targeted audience(s).

7. *The Paradigm Shift*: **Increasingly, physical libraries and information repositories are being replaced with virtual libraries and repositories, but the consequences and implications of this shift have not been adequately assessed.**

Libraries have always had to cope with collections composed of a wide mix of mediums and formats in which their acquisitions came "housed." Maps, recordings, photographs, special materials for the blind and the handicapped, and old manuscripts have been a challenge to libraries for millennia, not just centuries. In the middle of the last century the advent of microforms - - microfilm, microfiche, and other related formats began to insinuate themselves into the library's collections. Libraries had to begin buying a variety of special readers and printers, and set aside special reading rooms devoted to their microform collections. When the earliest computers appeared in the late Sixties and early Seventies, they began slowly to develop online catalogs and acquire some early online databases, either public domain databases or on a commercial subscription basis. CD-ROM's introduction brought with it additional complications due to proprietary and more complex search and retrieval technical instructions which librarians had to learn and understand before they could train their patrons. Seldom did the library budget keep up with the cost of special equipment, special facilities, special training, and special (meaning in most cases *higher*) costs for acquiring, maintaining in peak operating condition, upgrading as untold new versions kept reappearing every month, for all of these new formats and mediums. The obsolescent technologies were never completely replaceable by the newer technologies. That capital investment became a sunk cost. Now, the Internet Age has arrived. More and more material is being made available in electronic forms, accessible via websites.

- **The Myth:** Many futurists are having a field day predicting that the demise of the physical library is "just around the corner," "perhaps a little later," "if not much sooner." These old fashioned libraries, these Cassandras predict, will go the way of high button shoes and the surrey with the fringe on top, and be replaced by *virtual* libraries which require nothing more than a desktop or laptop to access their holdings since no physical institution of any kind would be required. Digitized collections become the name of the game. Anything that isn't digitized is passé'—somehow second-class in the information world.

- **The Reality**: It is an economic impossibility to digitize everything. Even the richest endowed institutions must make judicious budgetary decisions on what they can afford to digitize based on a whole host of considerations, including the needs and wants of their constituents and clienteles, the condition of their materials and how much danger certain kinds of materials may be in, and so on. "Born digital," many are now saying, is the real answer to the challenge, and we must find the means to live with pre-digital and digital mediums for a very long time - -at least many generations.

- **Debunking the Myth**: Libraries as physical institutions will not disappear for many moons. For future generations, they will remain as a repository of multi-media, multi-format, multi-platform information handling institutions. Public policies must be shaped to take that reality into account. Digitizing everything simply does not make sense, either from a preservation standpoint or from an economic standpoint. Moreover, many users of government information, for example, are disadvantaged and cannot use electronic materials for reasons cited elsewhere in this paper. Libraries as public institutions must never lose sight of the needs of all citizens they serve, not just those who happen to be able to afford their services, have easy access to them, and who have the requisite degree of computer and information literacy to search for and utilize electronic materials.

8. *The Paradigm Shift*: **Paperwork is being compounded by "Electronwork" which can be even more onerous and burdensome and costly than paperwork ever was. While the government is moving to replace paper-based public transactions with the government with electronic-based systems, pursuant to the Government Paperwork Elimination Act and similar**

legislation, there is a more or less blind assumption that "electrons are always better than paper." Although this controversy is not unique to this study's core objectives, nevertheless NCLIS has seen fit to alert the President and the Congress to a potential problem in the future.

While most people seem to agree that paper will never disappear, even at the height of the electronic information age. As has been pointed out many times, desktop printers have proliferated at a rate that seems to have kept pace with the proliferation of desktop computers and modem connectivity. Big central government printing plants like the Government Printing Office may be becoming the dinosaurs of the Information Age, but the paper and pulp industries do not seem frightened at the prospect of paper ever disappearing, even as laser printing supplants ink printing. Quite to the contrary! It can be argued that all that has really happened is that the burden of printing has shifted from the front end of the information life cycle when publishers' had to worry about massive print runs, to the middle of the cycle when Internet users download documents from the web and print them on their local printers. Gradually it is dawning on people that "Electronwork" can be far more insidious than paperwork ever was! That is to say, the burdens and costs of working in electronic formats and mediums, and on electronic platforms, can be far more onerous than pre-electronic formats and mediums. In short, paper is not necessarily "all bad," and there are many instances where paper is still the preferred medium. The Government Paperwork Elimination Act and the Paperwork Reduction Act both recognize that, but the recognition needs to be translated into more concrete operational guidance for federal agencies.

- **The Myth:** Paper formats and mediums are all bad; they should all be replaced as quickly as possible, depending primarily on economic considerations. The sooner we can shift from paper and microforms to electronic mediums and formats, the better. Only then will we be able to deal meaningfully with information preservation and permanent public availability effectively. Paper-based systems are almost always far slower, far more costly, and far more inefficient than are electron-based systems.

- **The Reality:** A family of pre-electronic and electronic information handling formats and mediums is a far more realistic approach for the government to take than a monolithic policy of "everything must go electronic tomorrow." Many citizens and disadvantaged populations are simply are not equipped to deal with computers or telecommunications connectivity. They either live in remote rural areas, are too poor to afford computers and modems, do not know anyone who has such capabilities, and are so computer and information literate that they do not even know how to find help. Moreover, history has demonstrated that as new mediums are invented and begin to spread into general use, they nearly always take their place side-by-side with existing mediums. This was true of radio when television came along, the telephone when faxes came into use, and broadcast when cable was invented. All of these mediums are still in use; we've simply added one more medium, albeit an extremely powerful one, to the existing family of mediums. Each medium has its own benefit:cost ratio depending on many variables, including convenience, urgency, capabilities of both senders and receivers (not just senders), cost, need for confidentiality, and so forth. Moreover, even many highly computer and information literate individuals who could convert to using the Internet almost exclusively, prefer to utilize all available mediums, even paper, couriers, and conversation over morning coffee!

- **Debunking the Myth:** Dissemination of government information to the public laws, policies, and programs must take into account the need for federal agencies to offer a family of mediums and formats for dealing with all segments of society. Users of government information are an extremely diverse class, ranging from the highly computer and information literate at the one extreme, to the computer and information illiterate at the other, including disadvantaged individuals from an economic, physical, or minority status standpoint. Individual laws, policies,

guidelines, and programs should be reviewed to ensure that government is not putting all of its eggs into the Internet basket, so to speak.

APPENDIX 16. GOVERNMENT INFORMATION LIFE CYCLE MANAGEMENT

GOVERNMENT INFORMATION LIFE CYCLE MANAGEMENT:
The Mission, the Needs, the Operational Requirements, and the Roles

Written by F. Woody Horton, NCLIS Consultant

INTRODUCTION[7]

Many of the most important findings of the Commission's four panels, as well as a reading of the dozens of prior studies that have been undertaken in the last several decades aimed at improving the management of government information, have one common, underlying thread. That thread is the need to modernize and put into operation the concept government information life cycle management as a practical computer-assisted information handling tool that meets the full-range of government information life cycle needs by all agencies, by all branches, and by all government officials.

Disseminating government information is only one stage in the government information life cycle. Moreover, when it is undertaken, how it is undertaken, and, ultimately, how successfully it is accomplished, is dependent on, and inseparable from how effectively and efficiently the preceding steps in the life cycle have been accomplished. Additionally, how effectively it is accomplished will impact how successful the following stages of the life cycle are, including reuse, storage and retrieval, archiving, and permanent disposition. In short, information dissemination is not some kind of "afterthought" task that occurs when everything is else is finished and the janitor is ready to turn out the lights. Information dissemination is an integral element of Information Resources Management (IRM), and must be planned, budgeted, managed, and controlled from the very beginning stages of creating new information products or services.

In the Commission's view, what has been "missing" from the public debates surrounding how to improve both internal and external (public) government information resources management is a clear statement of what the federal government's mission is when it comes to the public information life cycle, what the specific needs of agencies and officials are, what the operational requirements of an information resources management system are, and what the roles of the public and private sectors might be in planning, designing, developing, testing, and implementing such a system.

This "white paper" endeavors to put forward one approach to meeting all of these needs, for public review and comment. Ultimately, the Commission will include the substance of the paper's contents in the form of one or more conclusions and recommendations, in its final report to the President and the Congress, due December 15, 2000. *There is therefore very little time to try and upgrade the quality of the contents herein to an acceptable minimal level of defensible logic for that purpose.*

BACKGROUND

Information, whether government information or *any* information for that matter, having a *life cycle* is not a new idea. A useful analogue often mentioned is the concept of the *product life cycle*. That is, in

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[7] Available at http://www.nclis.gov/govt/assess/assess.appen16.pdf. This appendix was last revised on October 13, 2000.

the business world, as taught in business schools, a product is "born," "matures," "demand levels off," and then customer disinterest sets in and product sales decline and finally the product is taken out of production and off the shelves. Another analogue sometimes used is the biological life cycle. That is, an organism is born, grows, matures, declines, and eventually dies.

Applied to the creation, handling, disposition, and archiving of information, the life cycle concept follows a similar circular path, which is both endless and continuous. However, the usual starting point is when information is first created, whether that is a document, an e-mail message, or anything else, regardless of format or medium. One useful portrayal of the steps in the life cycle follows, although the authors concede there may be many variations of this graphic:

Government information is:

- **Step 1**: Created and produced (by authors in all agencies, in all branches, at all levels, and in many different formats and mediums).

- **Step 2**: Cataloged and indexed (metadata tools applied).

- **Step 3**: Temporary and permanent availability and entitlement established (ownership and disclosure rights of creators, publishers, disseminators, licensees, franchisees).

- **Step 4**: Published in the public domain or withheld from disclosure pursuant to a wide variety of statutes, internal agency policies, foreign agreements, and so forth.

- **Step 5**: Put into files, databases, collections, holdings, and other storage repositories.

- **Step 6**: Communicated, disseminated, and distributed.

- **Step 7**: Searched for and retrieved (full text, abstracts, key words).

- **Step 8**: Used for decision-making and problem solving.

- **Step 9**: Archived.

- **Step 10**: Re-used over and over again by government officials, journalists, archivists, researchers, citizens, and others (information recycled).

- **Step 11**: Disposed of (temporarily or permanently).

- **Step 12**: Expunged or destroyed if permanent retention period exceeded.

- **Step 13**: Need for new information to replace old information established.

Figure 1 is a graphic of the information life cycle.

Obviously the above steps in the Information Life Cycle could be expanded or compressed, depending on one's particular purposes. Moreover, there is certainly room for debate has to how we've framed the sequence of specific steps or stages, and depicted their inter-relationships, and admittedly rather cryptically defined them. Nor do we mean to imply simply because the steps are schematically portrayed as a circle that all steps necessarily always occur iteratively in the same "prescribed" sequence. Oftentimes some steps may proceed in parallel, one or more steps may be "leapfrogged," or the consequences of dealing with the information in electronic formats and mediums are different than those used when the data is in pre-electronic forms. But, for working purposes, notwithstanding these caveats, we would like to move forward with our discussion using this twelve-step methodology. Perhaps one of the benefits of this paper will be to refine and improve the above construct.

START HERE

New Needs Established

Creation & Production

Cataloging & Indexing

Metadata →

Permanent Public Accessibility Status →

Public or Private Domain Determined →

Availability & Entitlement

Permanent Records Retention Status →

Expunging

Archiving

Disposition

Publishing, Communicating, Disseminating & Distributing

Authentication Determined

Preservation in Appropriate Formats & Mediums

Revising

Searching & Retrieving

Temporary Storage

Using

Figure 1 – The Government Information Life Cycle
(This is an illustrative schematic subject to customization by each federal agency/program)

THE MISSION AND THE NEEDS

Next, what is the federal government's mission when it comes to government information? Simply stated, the Commission believes that government has an obligation to maximize its information flows and holdings for the benefit of the public, including: individual citizens, academic and scientific

research, for-profit business opportunities, state and local governments, and other sectors of the society.

In a word, government information is absolutely essential to a free and open democracy, and the public has a right to government information. The government should:

1. Maximize the availability of its information to the public.

2. Minimize information withheld from the public, subject to appropriate statutory safeguards and restrictions relating to national security, privacy, confidentiality, and so forth.

3. Permit easy, fair, and equitable access to government information.

4. Ensure the integrity, authenticity, and preservation of its information.

5. Simplify searching for government information across agency websites, files, and other sources and storage facilities for its data, documents, and literature.

6. Work together with the private sector in partnership arrangements that encourage business to assist government in searching for, retrieving, using, and archiving its knowledge holdings.

There is one need that is paramount: ***To create a comprehensive government information resources management system that makes it efficient, cost-effective, and economical for information authors to satisfy as many operational requirements as possible when their information is first created***.

THE OPERATIONAL REQUIREMENTS

Modern information technologies enable the government to manage its information life cycle needs in a highly efficient manner, but unfortunately information requirements are currently addressed in piecemeal fashion without any overall unifying management framework. Government must:

1. Develop the operational requirements for an information resources management system at each stage of the information life cycle.

2. Maximize the number of requirements that can be satisfied when information is first created, but allowing entry into the information life cycle at any point later in the cycle.

3. Afford the three branches, and their respective agency entities in each branch, the policy authority and flexibility to customize their own unique operational requirements in lieu of being forced to utilize a "one size fits all" policy.

4. Assign authority and responsibility for the overall leadership and coordination of the design, development, testing, and implementation of pilot tests of an information resources management system in the Executive Office of the President, but with co-equal participation by representatives of the other two branches.

5. Allow 18-24 months for the design, development, and testing period to ensure adequate time for consideration of not just the technical, but the organizational, procedural, policy, and other considerations that inevitably will attend such a major undertaking.

6. Utilize private sector contractors to the maximum extent to work with government in a partnership mode to plan, implement and control the undertaking.

7. Periodically report progress and problems to the President, the Congress, and the Judicial Branch, as well as to the citizenry.

THE INFORMATION RESOURCES MANAGEMENT SYSTEM (IRMS)

The Information Resources Management System (IRMS) must be built on the following principles:

1. Both agency internal (for official use) and agency external (public use) information resources must be included in the system because they are inseparably inter-related, and decisions made in one domain inevitably affect the other domain, at each stage of the information life cycle.

2. An **Information Life Cycle Manager (ILCM)** software package should, ideally, be developed based on three levels of "*profiles*:" government-wide, agency level, and individual official level. Each profile would be comprised of a customized to a set of decision option choices based on the most common and important types of communications an agency official initiates. These "*profiles*" will be developed taking into account all three levels of requirements, and designed in such a way so that a series of "*defaults*" can be pre-determined, and pre-programmed (but later changed if necessary) for each decision option. A full menu of decision option choices would be presented as prompts when the software module is first initialized and loaded (see illustrative decision options below). The "*electronic envelope*" concept would then be utilized for standardizing the formats for capturing and identifying the data values unique to each communication.[8] The *"electronic envelope*" is a way of standardizing and automating format rules for different kinds of communications with different profiles. In this way, the number of redundant and repetitive decisions that must be made each time a piece of correspondence, an e-mail message, a posting to an online database, some kind of government-public electronic filing transaction, or another kind of information instrument, is created by the same sender. *F*or example, ideally, such a profile for, let us say, an e-mail message created by a senior agency official would "instruct" the ILCM software to answer the following kinds of decision (menu choice) options with a "yes" or "no"; *these are illustrative examples at this point, and obviously the precise menu choice options, as well as the selection of the preferred default for each set of choice options, would be worked out for each official based on the three levels of requirements: government-wide, agency, and individual official:*

   - If you are either creating new information, or acting upon information received from someone else, is the information purely for personal use (the default will normally be set as "no")?

   - Can the information be shared with others within the author's immediate office (the default will usually be "yes")?

   - Can the information be shared more broadly, within the agency in general (the menu choices might be "yes," "no," and "perhaps" with allowable conditions specified, such as a draft that the author may not be ready to share publicly)?

   - Is the information sharable with the public; that is, is it in the public domain (the default will normally be "yes")?

   - If the information is not in the public domain, which statute(s) governs its exemption or exclusion (e.g. FOIA, Privacy Act, national security laws, etc. (the menu choices would usually involve one, but could involve more than one choice)?

   - If the information is in the public domain, should a GILS record be created (the default will usually be "yes")?

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[8] The electronic envelope concept was first espoused by William H. Price in an article entitled "The Electronic Envelope," *Information Management Review* (IMR), Vol. 2, no. 2 (Fall 1986), pp 43-53. It is available at http://www.nclis.gov/govt/assess/elecenv.html.

- If the information is in the public domain, should an official agency record be created (the default will normally be set as "yes", but conceivably a non-record choice, such as a convenience copy of an already existing record, might result in a "no" choice)?

- If an official agency record is created, what is the applicable retention schedule and what is the retention period (each individual and office is normally provided with a limited number of applicable program-based schedules from which the choice is made)?

- Should the information be permanently publicly available (the menu choices could conceivably be partly based on NARA appraisal guidelines, partly on GPO FDLP guidelines, partly on NTIS guidelines if the information is STI, and partly on agency policies)?

- Should the information be furnished to a central federal information depository or clearinghouse for redistribution, such as NTIS, GPO, the Library of Congress, a national library, or other institution or program (the default may include distribution to more than one repository or clearinghouse)?

- How will provision be made for the information's description and content definition and access tools, including, for example, title, data, issuing office, category and indexing terms, and so forth?

- How will authentication of the information be ensured (the menu choices here will be partly government-wide based, and partly agency based)?

- How will the information be preserved in the event of obsolescing formats and mediums (the menu choices may require the author to seek technical consultation from within the agency)?

- If the information is to be added to an existing database, for example, a bibliographic, numeric, or statistical database of some kind, is the "standing profile" adequate or should it be modified?

- If the information is a transaction occurring between government and the public within the context of an established electronic filing system, is the "standing profile" adequate or should it be modified?

3. Officials will be *enabled to enter the ILCM at any stage of the information's life cycle*, not just at the time the information instrument is first created. Thus, when a revision to an existing document or publication is created, there may be a need to revise one or more profiles because the menu choice may change, or the default may change. For example, if a records retention schedule is changed because of a change in an official agency record medium or format, a profile (meaning a menu choice option and/or the default selection to a certain preferred option) may need to be changed.

4. Agencies should be allowed to customize their profiles to the unique needs, missions, authorities, and responsibilities. For example, if internal reviews, clearances and concurrences are an important step, perhaps an additional prompt might be "if this is a draft message or memorandum, default to immediate office head only for review and approval," or, "default to immediate office head and division chief."

5. Profiles will need to be created for each of the major types of information transactions. For example, one profile might deal exclusively with routine e-mail messages, another for public domain publications, another for internal agency memoranda, another for external memoranda going to other agencies or EOP, another for Congressional correspondence, another for the media, and so on. There is a trade off between how many profiles that would be required and the burden

of having to change default settings because of variations in information transaction types. There is a point of diminishing returns, for example, when the burden of changing so many default settings in a profile outweighs the benefits that would accrue if a separate profile were established for a commonly occurring transaction.

6. If a FirstGov were in place and effectively operating as a major government-wide portal, then obviously the agency information resource entity should be identified and cataloged, and metadata applied to it (such as a GILS record) in such a way as to facilitate "transparent" indexing, abstracting, and tagging to facilitate ready location and ease of retrieval.

APPENDIX 17. AN INVITED RETROSPECTIVE APPRAISAL OF THE 1982 NCLIS PUBLIC SECTOR/PRIVATE SECTOR TASK FORCE REPORT

> **Note:** NCLIS invited Professor Emeritus Robert M. Hayes, who chaired the 1982 NCLIS Public Sector/Private Sector Task Force, to look back at the findings, conclusions, and recommendations made by his Task Force in the light of very dramatic interim developments. Most importantly, the impacts of the World Wide Web and the Internet are widely acknowledged to be nothing less than revolutionary. He was asked to assess whether or not those interim events, and the increasingly Web-based information handling environment, change in any significant way, in his view, those 1982 findings and recommendations. This is his report.
>
> NCLIS is republishing the 1982 report because of its enduring and timely value, and a limited number of copies will be available to study participants.

Written by Robert M. Hayes, Professor Emeritus, Department of Library and Information Science, University of California, Los Angeles (UCLA); Chairperson of the NCLIS Public Sector/Private Sector Task Force; and Member, NCLIS Group of Experts for This Assessment

THE PRIMARY ISSUES[9]

The Report of the NCLIS Public Sector/Private Sector Task Force identified two primary issues:

1. The crucial importance of information resources, products, and services in our economy and society.
2. The conflicting views concerning the proper role of government in providing those information resources, products, and services.

Everything that has happened in the twenty years since that Report has, without question, confirmed the first issue. With respect to the second issue, probably there continue to be conflicting views concerning the "proper role of government", but I think the focus of that issue has shifted as the political context has shifted and repeatedly has done so. In that respect, the technological developments may affect the focus of attention but do not change the fundamental debate.

THE PRINCIPLES

The Report presented a set of seven principles:

> Principle 1. The Federal government should take a leadership role in creating a framework that would facilitate the development and foster the use of information products and services.

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[9] Available at http://www.nclis.gov/govt/assess/assess.appen17.pdf. This appendix was last revised on August 15, 2000.

The "leadership" is perhaps best represented by the development of the Internet. I think everyone will agree that it was a direct result of U.S. governmental investment in creating the basic structure, through ARPANET and the NSF super-computer network. It must be said that the pace in explosion of the Internet during the 90s, from the rather limited and essentially academic growth of the late 80s (which was exponential, yes, but nothing like we have experienced) to the current rate of commercial growth has been almost unbelievable.

Among the important policy decisions by the federal government which clearly has fostered the development and use of *electronic* information products and services was the Telecommunications Act and its provisions to subsidize telecommunications access for the nation's libraries, educational institutions, and health delivery agencies. Equity of access, so that geographic location and economic status are not insurmountable barriers, has been made a matter of government policy

But there has been another arena in which the U.S. government has taken a position of leadership that in some respects is of even more fundamental importance. It is in the replacement of the SIC code for classification of industry data to the NAICS at least in part in recognition of the growing importance of the "information sector" of the economy. By doing so, the federal government has provided real encouragement to investment because now the data will more clearly show the magnitude of that investment and the effect of it on the economy.

In the same vein, though slightly different in the nature of its leadership role is the policy position of the federal government with respect to capitalizing information investments. In a Los Angeles Times article of Friday, October 29, 1999, it was reported that, "As part of its periodic update of its methods, the Commerce Department redefined software as an investment, something of value in its own right and thus counting toward economic output." It went on to say, "For last year alone, the refiguring added about $250 billion to estimates of total economic output. Fully two-thirds of that was due to the redefinition of software." Now, that is getting somewhere! Later, I will comment further on the broader implications of this kind of policy. My hope (as I will try to identify) is that this principle of support to investment will be extended to other than simply investment in software.

> Principle 2. The Federal government should establish and enforce policies and procedures that encourage, and do not discourage, investment by the private sector in the development and use of information products and services.

This principle is certainly reflected in the example of federal policy with respect to information investment already alluded to above. By stating, as a policy, that investment in "information resources, products, and services" should be treated precisely that way, as an investment, the federal government, at least in principle, is encouraging and not discouraging such investment. It is certainly a most tangible means of doing so.

> Principle 3. The Federal government should not provide information products and services in commerce except when there are compelling reasons to do so, and then only when it protects the private sector's every opportunity to assume the function(s) commercially.

> The related recommendations are to be considered as integral parts of this principle, since they embody the procedures for determining that there indeed are "compelling reasons" for the government to provide services in commerce:

In my view, this principle is among the most important contributions of the PS/PS Task Force Report. The federal government should not put itself in the position of commercial information distribution but should leave that to the private sector, "unless there are compelling reasons for it to do so". One clear

example of a compelling reason is the nation's health, and the Congressional mandate that NLM should engage in active distribution of medical-related information is consistent with that principle. Furthermore, it in no way precludes the private sector from adding value to NLM information products, and I personally know of many companies that have done just that.

Looking at that principle in the context of developments in the two decades since the PS/PS Task Force Report, one of the most remarkable things that happened during the 1980s was the *President's Private Sector Survey on Cost Control* (the "Grace Commission"). For some strange, unaccountable reason, it adopted the position that the federal government **should** actively get into commercial activities, in every area of government, as the means for funding government operations and with the identified objective to replace taxation as the source of funding, in fact. I cannot conceive of anything that would be more destructive of the private sector than for the government to "get into the business" of doing anything.

Leaving that bit of history aside, though, have the technological developments of the past twenty years changed the first part of this principle in any way? Clearly not. If anything, they have made it easier for the government to conform to the intent of the principle. There are now many means, through the Internet especially, for the private sector to fill the needs in regions of the country and for groups of persons that might not in the past been well served without government intervention in the marketplace.

In this respect, I return to the leadership of the federal government in the policy of equitable access to telecommunications, as embodied in the Telecommunications Act and its provisions to subsidize the nation's libraries, educational institutions, and health care delivery agencies in access to basic telecommunications services, the Internet being simply one example. Such subsidy clearly makes it feasible for the private sector to meet needs at prices that can be afforded.

Having said all of that, I suspect that this principle may underlie some of the current concerns of NCLIS. The role of agencies such as NTIS become ambivalent when viewed in the context of this principle. Might not the activities of NTIS be better performed by private sector companies? The problem is that, without NTIS, the basis for private sector entry would become so marginal as to preclude investment by any company. It would simply be too difficult for any private sector company to perform the role of NTIS in assembly of the basic data. That role for NTIS is necessary for governmental management of the results of its programs and for distribution of them for governmental purposes. Therefore, in my view continuation of NTIS in that role is totally consistent with this principle.

The ambivalence appears when the role of NTIS in *distribution* becomes important. Now, that ambivalence was present during the PS/PS Task Force discussions, with specific reference to NTIS, which were at a time when electronic distribution via the Internet was discussed as feasible but had not assumed the importance it now has. Assuming NTIS were to continue in its role as the central manager of access to governmental scientific and technical report, should it play a role in distribution? In my personal view, clearly YES, in the same way that the Department of Commerce distributes *Statistical Abstract of the United States.* But the objective in doing so should be to make the government information readily available to all who want access to it (such as individuals, like me). But beyond that, the objective is to encourage private sector companies to add value to those data, by re-packaging, by producing products that are tailored to specific markets, etc.

The point as far as the PS/PS Task Force was concerned, though, is that two groups of institutions (libraries and private sector information agencies), taken together, provide the best means for ensuring

public access to government information. On the one hand, use of libraries, especially public and academic libraries, ensures that "ability to pay" does not raise barriers which effectively deny access to information. On the other hand, the use of private sector organizations, in the business of providing information services, ensures that individual freedom and initiative will be dedicated to developing and marketing a multiplicity of information services whose value is determined by the purchasers rather than by government. The principles and recommendations emphasize the importance of using this balance of means for access, in contrast to creating new agencies to do so. Everything that has happened for the past twenty years, with respect to technological developments in particular, confirms that this combination indeed is effective.

> Principle 4. The Federal government, when it uses, reproduces, or distributes information available from the private sector as part of an information resource, product, or service, must assure that the property rights of the private sector sources are adequately protected.

The problem with which this principle was intended to deal was the potential that private sector data might, inadvertently or perhaps even by design, become incorporated into governmentally supplied information with the result that the property rights might be diluted.

Among all of the principles (at least among those I've reviewed to this point), this may be the one that has been most affected by technological developments over the past twenty years. One need merely look at the controversy over Napster to see the problem. I don't think effects of technology change the intent of the principle, but they certainly complicate the reality. The potential for *inadvertent* inclusion of electronic material under copyright is very real.

The problem, though, should not arise if we are dealing with *deliberate use* of copyrighted material. I know that in non-governmental contexts, responsible agencies, such as libraries, are very aware of the necessity of protecting private rights. As the nation's libraries advance in the development of "digital libraries", they are doing so with the utmost care with respect to private rights. I think the principle continues to be valid as a warning to federal agencies that they should operate with equal attention to individual rights.

> Principle 5. The Federal government should make governmentally distributable information openly available in readily reproducible form, without any constraints on subsequent use.

With respect to Principle 5, the U.S. federal government is now actively distributing "information from government activities" through the Internet as well as through CD-ROMs. Census for the year 2000, for example, may well be distributed primarily in electronic form, with print serving only archival purposes. (See "U.S. counting on Web to be census source; Bureau plans to post most of its 2000 enumeration data on the Internet. Switch from paper to hypertext raises information issues", Los Angeles Times, Sunday, November 15, 1998, Home Edition, Section A.) The Library of Congress has launched an extensive means for access to its collections and activities. The ERIC system is now actively disseminating its materials through the Internet. The Department of Commerce distributes Statistical Abstract of the United States both online through the Internet and on CD-ROM. I could go on and on but the point is clear. This principle has been heartily endorsed by reality if not by policy.

> Principle 6. The Federal government should set pricing policies for distributing information products or services that reflect the true cost of access and/or reproduction, any specific prices to be subject to review by an independent authority.

This principle is also of exceptional importance. To be specific, the intent was not only that the price should "reflect the true costs for access and/or reproduction" but more to the point that it should *not* be

set to recover the costs in producing or assembling the information. Now, I must record that I am expressing my own understanding, my own interpretation, and my own views. There may well have been members of the PS/PS Task Force that were ready or even desired to have the price set at "market". But the wording was based on the view that the price should be set to cover only the costs of making the information available.

> Principle 7. The Federal government should actively use existing mechanisms, such as the libraries of the country, as primary channels for making governmentally distributable information available to the public.

I suspect that this principle may be another part of the reason for the current concerns of the NCLIS. The particular example that the PS/PS Task Force had in mind was the Depository Library program, in fact. I think there have been attempts to eliminate that program, and to do so would be totally counter to the intent of this principle.

THE RECOMMENDATIONS

The Report presented a set of twenty-seven recommendations

> Recommendation #1. Provide an environment that will enhance the competitive forces of the private sector, so that the market mechanisms can be effective in allocating resources in the use of information and in directing innovation into market determined areas.

Everything I have seen, at least for the decade of the 90s, confirm the picture of a thriving competitive, private, market-based sector for the information economy. Federal policies clearly have been effective in every respect, including increasing use of information and innovation in development of products.

> Recommendation #2. Affirm the applicability of the First Amendment to information products and services.

Clearly, the Internet has raised many First Amendment issues. Congressional efforts to impose means for censorship were stopped by the courts based on First Amendment arguments. The view of the PS/PS Task Force was precisely that the First Amendment should not be limited to "the press" (taken in some limited sense) but should encompass other means for information distribution, such as the Internet (which was explicit in the discussions). As an ardent believer in the importance of First Amendment imperatives, I continue to endorse this principle.

> Recommendation #3. Encourage Congress to be consistent in the language used and in the application of principles relating to information products and services, such as those identified in this Report, when it formulates legislation and when it exercises its oversight role.

Frankly, I do not recall the precise reasons that the PS/PS Task Force considered this to be worthy of recommendation. Looking at it now, it really is "preaching", and I would be inclined to eliminate it.

> Recommendation #4. Encourage government agencies to utilize the most efficient (information) technologies.

This too is "preaching", this time to the Executive Branch. I think that the PS/PS Task Force objective was to urge that those agencies should be in the forefront of *use* of the information technologies and not simply in the *support to development* of them. Again, I would be inclined to eliminate it.

> Recommendation #5. Encourage the setting and use of voluntary standards that will not inhibit the further development of innovative information products and services.

The debate in the PS/PS Task Force on this topic was intense. Standards were viewed with great ambivalence. On the one hand, clearly they foster development by creating a framework on which products can be inter-related without concern about compatibility. On the other hand, they can also restrict creativity. The intent of this recommendation was to identify the balance between these two concerns but to do so in a way that, if anything, put greater emphasis on setting standards. Has this changed by the technological developments of the past twenty years? I think not. The balance still must be maintained but standards still are the means by which products can be inter-related.

> Recommendation #6. Encourage and support educational programs that provide the professional skills needed to further the development and use of information as an economic and social resource.

It is clear that this recommendation continues to have dramatic importance. From all of the reports from the information industries, there is a shortage of qualified persons for employment. The recent expansion of the basis for hiring foreign workers with technological skills clearly is based on the perception that there are needs that are not being met. Beyond that, there are needs is preparing managers in the use of information resources.

> Recommendation #7. Encourage and support both basic and applied research in library and information science.

I suppose that this recommendation were blatantly self-serving, but I think it is consistent with Recommendation #6. The facts are that financial support for research in the specific arena of "library and information science" has declined in the past two decades, and I think the loss is a serious problem.

> Recommendation #8. Encourage and support statistical programs and related research to provide the data needed to deal with information policy issues.

I think that the shift from SIC to NAICS coding represents *exactly* what the PS/PS Task Force had in mind. Prior statistics have grievously under-estimated the magnitude of the information sector of the economy, and by doing so have meant that policy decisions in both the legislative and executive branches have been based on inaccurate picture of the effect of those policies. Now, while the current statistical programs have made some steps in the direction of improved reporting, there is still much that needs to be done. To me, this is therefore one of the most important recommendations.

> Recommendation #9. Conduct a periodic economic assessment of the impact of Federal government information products and services.

> Recommendation #10. Encourage Federal agencies to regard the dissemination of information, especially through the mechanisms of the private sector (both for profit and not for profit), as a high priority responsibility.

I think that these recommendations are valid and even self-evident.

Recommendation #11. Identify and evaluate alternatives to existing Federal information dissemination mechanisms.

Recommendation #12. Develop and support the use of libraries as active means for access to governmental information by the public.

As are these.

Recommendation #13. Identify and eliminate legal and regulatory barriers to the introduction of new information products and services.

Frankly, I'm not sure what barriers the PS/PS Task Force had in mind in making this recommendation. But an example that comes to mind is the change in policy concerning *capitalization of software.* In my view that should be extended to other kinds of information investments (such as in databases). Now, these may not represent "barriers" so much as accounting policies that in the past treated investments in information as parts of "goodwill" in assessing the value of companies. By doing so, they in effect debased the currency for measuring the return on such investments. There may be other examples that can be brought to mind. But whether so or not, I think this recommendation still has value. In fact, I would put greater stress upon the issue of proper evaluation of investment in "intangibles" such as "information", as my illustration here are intended to highlight.

In passing, I want to comment on one of the debates that occurred during the discussions of the PS/PS Task Force. It concerned whether "information" should be regarded as a "resource" and as a "capital investment". My view was that it clearly was a resource and an investment, at the least for companies in the information industries. But there were some on the Task Force who vociferously argued against that position, claiming that to do so would give it too much importance. They said, in so many words, "Information is a support to decision-making, not an investment." Certainly that position was correct if it was set in the context of management decision-making. But in the context of information product development, it is in my view totally incorrect. The database of an ISI or an OCLC is as much a capital investment, necessary for production of information products and services, as is a machine tool in Ford or General Motors, necessary for production of automobiles. Yet today, the information investment is always expensed but the machine tool investment is almost always capitalized.

Recommendation #14. Encourage private enterprise to "add value" to government information (i.e., to re-package it, provide further processing services, and otherwise enhance the information so that it can be sold at a profit).

Of all the recommendations, it seems to me that this one gets to the heart in resolution of the issues with which the PS/PS Task Force was concerned. Specifically, the distribution of government information by the government should not be considered as competition (assuming that the principles and recommendations in that respect are followed) but as opportunity. It provides the private sector with the opportunity to utilize that information, to develop their own products and services based on it and with the expectation that the government will continue to provide the information, not as a competitor but as a source. I continue heartily to endorse this principle.

Recommendation #15. Provide incentives to existing organizations, such as libraries and bookstores that will encourage them to expand their activities in dissemination of governmentally distributable information.

The Depository Library program represented the precise case in point for this recommendation. The point is that libraries, in particular, provide the "safety-net" for those who do not have the economic resources to pay for what can be exceptionally expensive private sector added-value services. When the general public may not be able to afford those private sector services, they should still have access to the governmental data on which those value-added services are based. It is this objective to which this recommendation refers. Now, does the Internet reduce the importance of this recommendation? I think not. If anything, it enhances it, since the library again serves as the safety net both for access to the government information and, more importantly, for access to the professional assistance in support of evaluation and use of it.

Recommendation #16. Establish procedures which will create a realistic opportunity for private sector involvement in the planning process for government information activities

Recommendation #17. Involve the private sector in the process of formulating standards relating to Federal information activities.

Recommendation #18. Create or improve mechanisms for ensuring that the actions of government agencies, in developing information resources, products, and services, are consistent with the policies, goals, and long range plans that are announced.

Recommendation #19. Announce intentions sufficiently ahead of time to provide an opportunity for private sector involvement when a government agency, for reasons it regards as compelling, should plan to develop and/or to market an information product or service.

Recommendation #20. Review and approve, before implementation, any plans for the government to develop and/or market an information product or service, the review to be carried out by an agency appropriate to the branch of government (such as OMB, GAO, CBO).

Recommendation #21. Include an "information impact and cost analysis" as part of the process of review, evaluation, and approval of any plans for the government to develop and/or to market an information product or service, the analysis to cover economic and social effects, effects on existing products and services, effects on potential private sector products and services, and benefits to the public.

Recommendation #22. Review periodically to evaluate the desirability of continuation of any information product or service as a governmental activity.

Recommendation #23. Do not arbitrarily restrict the Federal government from enhancement of information products and services, even if solely to meet the needs of constituencies outside the government itself.

Recommendation #24. Announce the availability of governmentally distributable information and maintain one or more registers to help the public determine what governmentally distributable information is available.

Recommendation #25. Deposit governmentally distributable information, in whatever forms it may be available, at national and regional centers, including regional depository libraries, where it may be examined at no charge.

Recommendation #26. Do not assert any Federal government copyrights on information the Federal government makes domestically available.

Recommendation #27. Use the nation's libraries and non-governmental information centers as means for distribution of governmentally distributable information instead of creating new governmental units or expanding existing ones.

All of these recommendations were focused not so much on the general objectives as on the specifics of means. The private sector representatives on the PS/PS Task Force wanted to assure that their interests would be heard and listened to. They wanted to assure that procedures in making policies and in implementing programs would be as open as possible so as to make it possible for them to participate in the process. I think those aspects continue to be necessary, not only to meet the needs of private sector entrepreneurs but as a general policy of good government.

In parallel, the members of the PS/PS Task Force that represented the "public sector" in the debate wanted to assure that their interests were also recognized in areas such as equity in access, maintaining the role of libraries, assuring that the safety-nets for meeting needs continued to stay in place. In this respect, these recommendations tried to balance the two sets of interests. And I think that that too continues to be necessary.

DEFINITIONS

There were an untold number of definitions.

In any area of controversy, the terms used in the discussion become not only means for expressing the ideas but the very focus of the conflicts themselves. It is thus necessary to develop specific definitions for the terms used, so as to assure common understanding and to clarify the conflicts. The definitions, as presented here, are not intended to be universally accepted, but the principles and recommendations must be read with them in mind.

I won't here review the array of definitions, but I do want to highlight some of them that I think continue to be critical.

A key issue, here, was the ambiguous position of the third sector organizations (universities, libraries, research institutes, professional societies). In some situations, they are public sector institutions (public libraries and public universities, for example, are clearly part of government, in the sense that they are governmentally funded and operated), but in other contexts they function as part of the private sector. The basis for resolution of this ambiguity was never clarified, so the third sector organizations—the not-for-profit institutions and comparable activities of government—were usually treated as part of their respective sectors rather than being identified as a group separate from the other two. The fact remains, though, that the very membership of the Task Force was chosen to represent three sectors, not two.

I think that in public policy debates, certainly in the information field if not more generally, this group of institutions, which lie between the "public sector" and the "private sector" needs to be given more attention than it usually receives, as an independent set of participants and not buried in one or the other of the two. In the international arena, the NGOs (non-governmental organizations) are being explicitly recognized as necessary and independent participants, sitting between government and business. And that is precisely the group I am talking about here.

The term "information" was repeatedly used in the Task Force discussions, but it vas impossible to arrive at an agreed upon definition. It appeared and was generally understood to refer to the content or symbolic substance of a communication, as separate from the physical form in which the communication occurred. But despite the appearance of a general understanding of the term, it simply eluded specific definition.

The problem faced by the Task Force is exemplified by the definition of "information" given in the 9 June 1980 draft statement from the OMB, concerning "Improved Management and Dissemination of Federal Information: Request for Comment". In it, "information" is defined as "...publications and other documents, such as reports, studies, and brochures, which are available in a paper or microform media (sic)." That definition (in identifying "information" with the media that convey it, and with a limited set of such media at that) is irreconcilable with the usage in the Task Force.

Although the Task Force did not define "information", at least characteristics of it as an "economic entity" were explicitly recognized. I won't here review what the PS/PS Task Force report said in this respect, but I think that what was said continues to be important. It has become especially so as the information economy and the information technologies continue to expand. The economic role of information needs to be identified, and not simply in the traditional way in which the economists have treated it (i.e., simply as part of the decision-making process).

The differences between an information product and an information service were a matter of extensive debate and, in fact, seemed to exemplify rather fundamental issues in the discussion.

This distinction or rather the blurring of this distinction has become increasingly important as a result of information technology developments in the past two decades. Indeed, online publication is both a product and a service. Now, it may be that a distinction does not need to be made, but the facts are that government policies seem to treat them as different.

There was disagreement over whether the information industry should be limited to private sector organizations, thus excluding governmental agencies such as NTIS and the GPO. Those arguing that it should include government agencies and their contractors saw the term as representing a kind of function; those arguing against doing so, saw the term as representing the difference between public and private sectors, "industry" being confined to the private sector.

My own view is that the term "information industry" should be treated as a function and that "industry" is not confined to the private sector. In saying that, I must reiterate that I am not suggesting that the government (i.e., the "public sector") should get into the business of marketing its products as a source of income and in competition with the private sector. But I strongly believe that governmental information activities, as functions, should be treated on a par with private sector function, certainly in statistical accounting.

Most of the Task Force deliberations focused on the availability of "government information", but the definition of that term fluctuated widely during the discussion. At times, the term was taken very broadly, including all kinds of information generated by or collected by the government or by its contractors. At other times, the term was taken very narrowly, limited to the definition given by the OMB, in which it is restricted to mean "...for which the government is the primary user"; that usage contrasts "government information" with "public information", the latter being interpreted as '.... information to inform or educate the public".

There are many problems underlying the diversity of definitions. I won't here try to review them, as they are recounted in the PS/PS Task Force report, but each of the problems interacts with the others, and while there is some overlap among them, there are no easy ways of reducing them to a limited number of sub-categories of government information. This complicated the task of coming to agreement on several principles, since different categories of government information will almost certainly require different conditions for availability. I think that the problem in definition of the term "government information" continues.

APPENDIX 18. THE WORLD WIDE LIBRARY

Written by Christopher Burns, Member, NCLIS Group of Experts for This Assessment

WHY CAN'T THE WEB BE MORE LIKE A LIBRARY?[10]

Why can't the Web be more like a library? If you have a library card you can see anything in the collection, regardless of the publisher, format or age of the document. But on the Web you often have to go from publisher to publisher, agency to agency, site to site to find the document you need. And at each step you have to identify yourself, present credentials, and request access.

In a library, everything available to you is in the card catalog. You can search on author or subject, and choose the material you want by looking at the standard information on the card. But on the Web there is no comparable set of metadata, no good way to look up an object. You can search across the web looking for a description of the object, but the description is not fielded, it doesn't define the date or structure of the document, and because it is a broad, general search, it brings back many more candidates than the user can handle. You can't narrow your search to a "computer sciences" library, or a "personal health" library or a K-12 education library, or a "government documents" library. The state of the art is to search on the words appearing on the HTML page, if it is accessible for anonymous searching.

If the information you need is not in the library you can locate it in an affiliated library by searching the interlibrary network catalog. But on the Web site the search tools are unique to that site; you can't search more than one site at a time at any level of precision. The thousands of individual document collections now available on the Web have no standard catalogs that can be searched together, and they share no common search protocol.

If the book or document you want is in the library, it is really there—or will be returned within a predictable time. But on the Web it is common to find that the information has moved to an unknown address, or that it has been superseded by a new and different document, or that it has since been withdrawn, lost, or "revised". The Web is ephemeral; there is little sense of preservation or accountability especially in critical areas like scientific, technical or government documents. As often as we may have criticized librarians for emphasizing preservation and circulation management, we can see now that life without those disciplines is chaotic and unreliable.

If you can't find it in a library, ask the librarian. But on the Web there are no authority files or cross-indexes. There are no tools like a list of publications recently added to a community of sites, no standard dictionary of author's names and pseudonyms, no catalog of sites. We get "links lists." No one evaluates the authenticity or usefulness of a site—each one asserts its authority through mere existence. Time and again we have seen that the most valuable information retrieval device is a helpful colleague whose knowledge and judgment one trusts—and there are none of those on the Web.

In spite of the rich profusion of knowledge now available to anyone on the simplest terms, the Web is more like a flea market than a department store. You walk from stall to stall, adjusting to this

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[10] Available at http://www.nclis.gov/govt/assess/asess.appen18.pdf. This appendix was last revised on September 5, 2000.

organizational scheme and that eccentric standard. But the pleasure it offers in serendipity is lost for some in its lack of organization and precision. The searcher sinks deeper and deeper into that most modern paranoia: knowledge that the exact information needed is out there somewhere, coupled with the certainty that it will never be found.

We can change this. If the Web or some portion of it is to become the organized network of knowledge that our libraries now represent, then we will have to find a way to preserve the flourishing independence and accessibility of Web sites as we know them, but align them through standards, protocols and procedures so document and publication catalogs can be searched more precisely together. How can we bring the thousands of emerging document sites to a higher state of organization?

MOVING TOWARD DECENTRALIZED COLLECTIONS

Historically we have approached the task of managing diverse document collections by putting all the materials into a single database, running under a single search protocol and a single access management regime. This is still the obvious solution when the documents are all of the same type and format and when all the users belong to the same organization. When the documents types are the same and the users are willing to accept strong central systems management, it is even possible to have distributed databases operating in separate but identical environments. This works for hospitals owned by a single group, for example, who keep their patient records in a group-specified format on separate but interconnected systems. Branch libraries in a large city, a chain of retail stores or regional offices of a major government agency may also benefit from centralized management of decentralized resources.

But when the interests and activities of the user group begin to diversify, and the collection of documents comes to include many different formats the right architecture is less clear. Different file types may be best stored in different systems. User groups may have different requirements for access and security. Separate systems are able to evolve more quickly than a large document database on which many groups depend. More important but harder to rationalize, decentralized collections keep the information under control of the organization that cares most about it; the collection is nourished. Over and over we find that when diverse collections are gathered together in a central corporate or government system, maintenance declines and controls grow to favor efficient management of the system instead of service for the user.

Recent efforts to manage diverse document collections have taken a different approach: leave the collections on local systems under local control, but create a single shared catalog located on the Web. Users can search the catalog for documents and other information, just as one searches a library catalog. When the document is found, the user clicks on the link icon and is connected over the Internet to the local system where the information is available. Access and security can be managed specifically by each collection, and each system can be configured independently for the needs of the user and the type of files it contains. This architecture allows rapid growth in the number and diversity of collections available to the user. The tools are simple and local control over content is preserved. To make a document available beyond the local system, the collection manager puts a "card" in the central catalog, but the object itself remains at home.

But that is the problem. For a shared catalog system to be useful, the independent collection managers must keep it up to date. While some automation is possible to help send updates to the central catalog, the burden inevitably falls on the local collection management staff, and they usually have more

immediate duties. We have tried having the corporation send subsidies to the operating unit to pay for this cataloging, but that is a pale monetary incentive. Various organizations have tried creating document librarians, centrally funded, who scour the local collections and do the cataloging. But this, too, gets displaced in the daily business of creating and using the information. If the cataloging is not somehow made integral to the production workflow, it doesn't get done.

RECIPROCAL CATALOG ACCESS

The third alternative, proposed here, is to decentralize the collections, decentralize the catalogs and create a centralized search mechanism by which the users of each collection can search other participating collections at the same time. This is not a general utility available to all users of the World Wide Web. It is a "network" or affiliated group of online collections and libraries that have agreed to provide each other's users with reciprocal catalog access. The network is implemented by (a) adopting certain information standards and protocols specific to their group, and (b) creating a shared search mechanism which all their users can access. A network might be shared by all the colleges in a statewide university system, or all government agencies, or all the public libraries and museums in a region. It may be a research consortium in biological sciences, or independent suppliers of parts to the aviation industry. By creating a standard "public" catalog format, a standard search request, and a protocol for reciprocal access, the group can maintain independent document collections, each cataloged by its own staff, but each accessible to the users of all other participating collections. It will behave as a federation of collections, accessible as a virtual database, functioning like a network of libraries.

Three major systems elements are necessary for such a network to function: (a) each participating library would have to create and maintain a public catalog that follows a standard format. (b) Together the participating libraries would have to install and support a central system for searching all the catalogs in the network. (c) The members of the network must agree on a protocol for extending user privileges, allowing access, and reporting usage.

The Public Catalog: Central to the concept of a network library is that each participating library or collection maintains an online catalog of the documents it has chosen to make available. Where a simple HTML page might list all the documents available, the catalog provides fielded metadata so the user can search more deeply and more specifically on date, author, document number, format or language. A participant could choose to make some but not all objects accessible this way, and could keep an internal catalog in an entirely different format for users within the local organization.

The catalog must be in a structure and location accessible over the Internet and should contain basic metadata in a standard format for each object or document. While there are several existing metadata standards that might be employed (for example the ONIX system develop by book publishers or GILS developed primarily for government use) the Dublin Core standard seems a good starting point for the metadata, and offers an insight into the catalog's likely complexity. Developed by the library community, the standard specifies the definition and general format of sixteen descriptive elements designed to aid in finding the document. Those elements include:

How the World Wide Library Works

USER

Participating Online Library
- User Identification
- Link to Network Search System

Network Search System
- Directory of participating libraries
- Location and map of catalogs
- Access management rules
- Authority files and cross indexes
- Repository of shared files
- Usage accounting

Catalog
- Metadata about documents
- Access management parameters
- Link to documents

Collection
Objects and documents under local control

1. User visits affiliated library site, presents credentials, chooses to search beyond the local catalog.

2. User is linked to the network search system, selects libraries to search.

3. User frames search request using metadata fields, cross indexes, authority files

4. Search system sends request to all selected catalogs,

5. Search system receives, organizes and displays responses. User may revise and re-issue search

6. User selects document and clicks on link to request access.

7. Local library makes document available or presents user with local access protocol.

Title: Title of the document or resource

Subject: Series of key terms that describe the document. These may be from a general thesaurus, or from a specialized thesaurus maintained by the affiliated libraries. For example, a community of document collections related to aerospace might agree to share a specialized thesaurus of terms useful to that community.

Description: A description, abstract, table of contents or excerpt of the document.

Coverage: An optional additional description, usually to deal with geography.

Creator: The person or organization responsible for creating the document.

Contributor: Additional persons or organization who contributed to the content.

Publisher: The organization responsible for primary distribution.

Source: The original source of the material, if not the author or publisher.

Relation: Relationship of this document to a previous document or set of documents.

Type: The Dublin Core proposal recommends using very general types, such as dataset, sound, image and text.

Format: File format, medium, dimensions.
Rights: A rights management statement, for example copyright date and owner.
Date: Date of publication.
Language: Language in which the document is written.
Identifier: May be a unique number within a known set such as a government publication number, or it may be a more general identifier such as the Digital Object Identifier used in the publishing community.

The catalog would need two additional elements:

Location: A link to the document itself, or a description of its location.
Access: An indication of what limitation there may be on access.

These elements would need to be refined by the participants in a particular network, including development of syntax and conventions for each one (last name first?, format of the date?) so that they could be efficiently searched. Specific differences between one catalog and another in the same network can be mediated by the search engine. The online catalog is like the union catalog compiled by several libraries, or like the online catalog they now maintain together.

The Network Search System: Users of the network would have to send their search requests to all participating sites in a common format. This can be best done by an intermediate site which establishes the identity of the user, helps the user construct the search in the most efficient form, sends the search request out to participating catalogs and provides the user with an aggregated response. The search system provides a directory of network sites, information about how those catalogs are maintained and authority files to help the user clarify or expand certain kinds of searches. It permits the user to search all the catalogs in the network with a single command and enforces any access restrictions in place at individual libraries. It redirects any searches or links to new URL's in case they have been moved and reports the results of the search to the user. The user may then access the document directly from the participating collection, or request access from the collection manager. It begins to behave as a librarian's assistant, providing news, advice and help in searching across the network.

In an expanded role, the network search system might support a shared repository of documents or objects that all the libraries use. It may also store documents that are no longer in the individual library's collection but which the entire network agrees should remain available.

The Access Management Protocol: The same network search system would also determine that the user is member of the authorized user group. Individual libraries and collection managers who participate in the network may issue their members user identities, or they may connect the user to the central search system through their own site. But basic to the notion of an online library network is that the participants are not individuals but libraries or online document collections who manage the network together, and who affirm the identity of the individual users to whom these access privileges have been extended. The access management system would also record the usage of documents by user or participating library. It is the equivalent of libraries in a region that honor each other's library cards.

Libraries who wish to join an existing network may do so by creating a public catalog on their site and agreeing to the reciprocal access management protocol. As networks form around specific types of documents, specific topics, regions or types of organizations, a library may belong to more than one network without creating more than one public catalog. To form such a network, a group of libraries would have to agree to acquire and support the shared search system.

Users who wish to gain access to the network may request affiliation with a participating library, and while this seems to present an obstacle to a user accustomed to ranging freely across the Internet, it allows a community of libraries to share a level of security, user identification and usage accounting that might otherwise be costly for an individual library.

The World Wide Web was conceived as an open system allowing any user access to any information on any site. But the lack of a structured catalog and the absence of an adequate mechanism for searching multiple sites means that while the Web is wonderful for reaching "pages" of information, it isn't equipped to handle the higher form of information objects, "documents". The World Wide Library allows sites of similar interest to create affiliations with common metadata and reciprocal catalog searching so that the user of one site can find documents on other sites as well with a single search.

APPENDIX 19. FIRSTGOV.GOV: A PRELIMINARY ASSESSMENT

Note: This is a preliminary evaluation of the FirstGov project, including a comparison of the FirstGov portal with the comparable effort in the United Kingdom, called UK online. The author agreed to undertake this analysis at the request of the Commission in connection with the its Comprehensive Assessment of Public Information Dissemination. The views expressed herein are entirely the author's and do not necessarily reflect the official views of the Commission.

Written by William H. Price, Member, NCLIS Group of Experts for This Assessment

A PRELIMINARY ASSESSMENT OF FIRSTGOV[11]

On June 24, 2000, the lead article on CNN.com announced: "In historic "Website chat," Clinton unveils era of U.S. "e-government."[12] The President said that a new Internet site, FirstGov.gov, would be launched in about 90 days (meaning late September 2000, but the search engine developer, Inktomi, indicates "early November" is a more realistic date). In the words of the President:

> It will be linked to all federal information Web sites -- the world's largest collection.
> ... When its complete FirstGov will serve as a single point of entry to one of the largest, perhaps the most useful collection of Web pages in the entire world.[13]

The President said FirstGov will offer individuals, small businesses, and others a single source for information from the federal government:

> Whether you want crucial information in starting a small business, or you want to track your Social Security benefits, you can do it all in one place, 24 hours a day, seven days a week," in starting a small business, or you want to track your Social Security benefits, you can do it all in one place, 24 hours a day, seven days a week.[14]

The FirstGov site will be managed by the General Services Administration (GSA). FirstGov replaces WebGov, a project initiated several years ago by this same agency. The GSA Administrator, David Barram, indicated that one error in judgment relating to the way WebGov was approached was the failure to involve the public and private sectors in a partnership configuration. Instead, the government tried to do the whole job itself. A contest to cull new ideas in electronic government service was also announced. The nonprofit Council for Excellence in Government agreed to award $50,000 for the best ideas.

In articles appearing since the June 24th announcement, the figure of 100 million government Web pages has been mentioned, to be accessible through a "single portal," the new state-of-the-art term of

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[11] Available at http://www.nclis.gov/govt/assess/assess.appen19.pdf. The first segment of this appendix was last revised on September 15, 2000.
[12] In historic 'Webside chat,' Clinton unveils era of U.S. 'e-government' June 24, 2000, http://www.cnn.com/2000/ALLPOLITICS/stories/06/24/clinton.webcast/index.html.
[13] Ibid.
[14] Ibid.

preference for a single web site permitting access to a large number of other web sites. The idea of providing a "single, one stop service" for government information is not a new one. To the contrary, the idea is almost as old as the Nation itself. However, all have faced enormous, some insurmountable difficulties in the past for a wide variety of reasons.

FirstGov is a portal that affords citizens, businesses, state and local government officials, and other government information users the opportunity to search using a single federal government home page. Interestingly, an agency or other government entity must "buy into" FirstGov by first agreeing to become a "certified partner." There are certain obligations and conditions that must first be met before the applying entity can be considered certified.

The search engine and database index are being developed by a nonprofit group headed by Eric Brewer, Chief Scientist at Inktomi Corporation in Foster City, California. In press materials the company announced that its search engine could search 500 million Web pages in 0.25 seconds. GSA Administrator Barram indicated that Brewer suggested the idea to the President while attending the World Economic Forum in Davos, Switzerland in January 2000. It remains to be seen if the technology will be as sophisticated as the marketing of this capability.

My purpose here is merely to highlight on some of the more significant challenges. I believe the idea of a "pilot test" is, indeed, a very useful initiative, and the President is to be applauded for forging ahead with this initiative. The very experience of attempting to bring up the Web site will, in my view, underscore the need for fundamental reforms in the way the federal government's information is "captured," identified, organized and structured, maintained and stored, managed throughout its entire information life cycle, and ultimately archived or disposed of. It will also have the sobering impact of exposing millions of Americans to the incredible array of government information that is "theirs for the asking." But it will also, inevitably, carry some disappointments as citizens begin to realize that searching for information is a very time-consuming, complex, and altogether formidable chore, much less having finally located it, then downloading it or otherwise retrieving it for use.

Here are some of the challenges.

1. The United States government generates an enormous amount of information, both nationally from the central federal government in Washington, D.C., and regionally at the state, local, and tribal government levels, as well as abroad at U.S. embassies, military bases, and specialized agency offices that require foreign representation. What will the scope of FirstGov be? Moreover, there is lots of "government information" that is not .gov for a variety of reasons. One is that the government has entered into some kind of contractual or informal arrangement with a contractor, an individual, a university, or some other kind of institution or group, to perform work for it. Is all of the information generated by those government agents and surrogates also going to be included?

2. Retrievability of information, whether government information or any other kind of information, is immeasurably simplified and speeded up the way the information to be searched is organized and structured in the first place. Unfortunately, the government does not organize its data, documents, and literature around commonly used subject headings, like most of the library, archival, museum, and journalism worlds do. Instead, the information is organized around agency names, agency missions, agency functions, and similar "bureaucratic buzz words." Correlating those bureaucratic classifications with commonly used subject terms is a chore that has thus far defied repeated efforts by many different bibliographic experts and expert groups over the years. The need for now coming to grips squarely with this correlation is acute in the electronic information age. Intuition is not much help here. Who, other than an experienced bureaucrat, knows that marriages, births, and deaths is information produced and made available by the

Census Bureau? Who, other than an experienced government documents librarian, would know that permits for operating a boat in an inland navigable waterway is issued by the Coast Guard? The examples are virtually endless.

3. Agencies are already being criticized for bringing information products up one day on one of their web sites and taking it down the next. How will citizens react to this approach to web site integrity? Even worse, an entire web site is brought up one day and disappears the next. Some agencies have admitted they neither know, nor can control the number of web sites their own agencies have established. GSA officials say "the pressure of the public in demanding tighter quality controls over web site and web page integrity will force agencies to correct this situation." One study indicates that of the approximately 20,000 federal web sites, many have been entirely abandoned or their contents is so badly outdated as to be virtually useless.

4. Index terms, like governmental functions themselves, are not static, they are dynamic. The argot of the day changes from hour to hour, from day to day. A dynamic, empirically developed online thesaurus of search terms is a critical requirement to assist users. Many an online database has been wrecked on the shoals of static indexing systems and thesauri that simply could not rise to the challenge.

5. Agency policies, guidelines, standards, and procedures governing the posting of public information products to their web sites are few and far between. Of course to a large extent agencies cannot be faulted too harshly on that score because they are just starting down the path of the Internet. What is less forgivable, however, is the lack of leadership in OMB in this area. There are some commendable policies in place, but they are not being evaluated and extended on a government-wide basis.

6. According to NCLIS, there is no single, central, authoritative official within agencies that has clear responsibility and authority for online publishing. It would appear the public affairs offices in some cases have this responsibility, but in others it is the CIO, and in others it is still the print publishing official who now has both electronic and pre-electronic publishing responsibility. There is nothing wrong with different agencies using different models of responsibility and authority that are tailored to their unique needs, but what is not permissible is the failure of the agency head to pinpoint responsibility *somewhere, in some office, in someone.*

7. It is far from clear how security, privacy, and confidentiality concerns will be addressed. Who controls these determinations, and who will be the final approving authority? One of the most difficult problems faced by librarians and other information professionals is the challenge of determining the authenticity of the data they are viewing on a web page: "Is this the official copy I'm looking at, or is this an unofficial copy?" This is an extremely difficulty challenge and one that NCLIS ran into when it did a survey several years ago of some 23 different federal agencies and over 300 specific government information products. Many agencies felt, for example, that just list their agency name on the web page, or the name of its agency head, was adequate to reassure the viewer that the information was official!

8. Information literacy is another problem. While there is a current excitement over the thousands of new "dot.coms," dot.govs," "dot.edus" and dot this and dot that which are coming up hourly, already the frustrations of knowing how to navigate even a single web site, much less across sites, are turning many users off. There is certainly a need for an online navigation course that users who do not possess the requisite computer and information literacy skills can take to bring them up to speed with those skills.

9. The "crawlers" as they are called, are blind and is not the best technology to get into a database. Moreover, crawlers can be very intrusive, and too many crawlers acting concurrently have been known to cause very serious problems in searching sites. Moreover, crawls should be comprehensive instead of sampling in their approach.

10. Government Information Locator System (GILS) compliancy is another challenge, and it is doubtful that FirstGov, at least initially, will be GILS-compliant. Experience so far in implementing GILS at the agency level has been uneven at best. However, in the long run, the very existence of a single, one stop portal for accessing government information augurs well for the value of a GILS (whether the current one or a future iteration) since the value of an authoritative, comprehensive metadata tool to assist in identifying, locating, and describing government information should be incontrovertibly underscored.

In short, the challenges are legion, but the need for such a pilot test far outweighs the fear of posing more new questions than answers can be provided. This has always been the classic dilemma of diffusing new technologies, and information technologies are no exception. The government must participate actively in the pilot test, and the lessons learned must be carefully documented so that the next generation of federal search engines can profit by the inevitable shortcomings. NCLIS should participate in the pilot test since it is an inseparable project from their current study of public information dissemination reforms. Certainly the players involved must provide advice and guidance in this Herculean undertaking.

A COMPARISON OF THE UNITED STATES AND UNITED KINGDOM INTERNET GATEWAYS[15]

The United States Government and the Government of the United Kingdom are among several national governments to offer an Internet gateway into their official information sources as well as the services available. The United States site is identified as **"First Gov"** and is available at http://www.firstgov.gov/ and is readily recognized by its colorful banner of the United States flag. The United Kingdom site is identified as **"UK online Citizen Portal"** and is available at http://www.ukonline.gov.uk/. These two sites differ principally in the scope of information available. Both are presented in a manner to facilitate ease of use. They offer a new outreach to their citizens in navigating through government information and services that are available.

These two important services were reviewed to determine ease of use as well as the scope and depth of information available. The topics chosen for review focused on three aspects of both governments: acquisition of housing, Federal benefits and National Security intelligence activities.

Summary of Findings

Depending on the information or service sought, navigating FirstGov or UK online to produce desired results can be time consuming and a complicated task. A user will be confronted with the need to use synonyms to "accurately" locate desired information. An example in this review is "home" and "house". The facilities for searching and identifying information are available, but the information is vast and often expressed in unfamiliar terms. Adequate time, patience and determination are required for those in need of the information or service.

The differences in scope and depth of information available from these two systems are indicative of the size of the two governments and size of the Nations they support. The ability to provide a hub or focal point for information from all the components in government is remarkable. Equally remarkable is the effort made by government agencies to capture and digitize information in their sphere of responsibility. These information facilities allow a citizen to cut across agency and department lines to

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[15] This segment of the appendix was submitted to NCLIS on January 8, 2001.

locate desired information. An example is "pesticides". Several agencies have responsibility for dealing with this issue, but from their perspectives and spheres of responsibility. To some degree, a citizen may not be required to know the structure of their government, nor the names of the departments as a prerequisite for to finding needed information

The Introductory and Welcome Page

FirstGov

The United States site is introduced by a colorful banner of the United States flag and FirstGov - Your First Click to the U.S. Government. The central menu on this page lists key information topics such as "Agriculture and Food, Farms, Food Nutrition"; "Consumer Services and Safety"; "Environment and Energy, Weather", "Federal Benefits and Grants, Social Security, Medicare"; "Money and Taxes"; "The U.S. in the World, Defense. Trade, Immigration" are among the 16 topics presented for selection as a gateway to more information.

Additionally, a citizen can access information from any of the three branches of government as well as state and local governments. Featured Subjects such as Consumer Handbook, Federal Business Opportunities, and Government for Kids are among the subjects that can be accessed by a click.

At the top of this introductory page is the ability to search across the government for information on a subject such as pesticides, water pollution, etc. This is an important feature that can access information which is held by several government agencies with varying responsibilities for a given subject. The citizen may not be familiar with what agencies this information resides in, but this provides the access to wherever the information may reside.

UK Online

This Welcome page also uses a colorful rainbow banner, but it presents the user with fewer choices for access. There are four major topics represented by four graphic icons: Quick Find, Life Episodes, Citizen Space, and Getting the UK online. Unfortunately, the sub-titles that further define these choices are difficult to read because of the font and small font size. Under each icon is a Go button to launch access. Across the top are buttons to access About this site, Contact us, UK online for business, Help, and a Site map.

Citizen Portal Members may Register as a new user, Sign in, or Recover a forgotten password. You may also Personalize Your Citizen Portal as to where in the UK you live – England, Scotland, Wales or Northern Ireland; your language - English or Cymraeg?, and preferences.

This opening page is sparse with choices, but it may offer a citizen a less complicated entry to needs. Important is the ability to search for a subject or topic.

Review 1 - Acquiring a Home

First Gov

Bypassing a selection of Executive Branch Agencies and going directly to search for "House", produced 344,377 irrelevant matches. Even with "purchase" added as a qualifier, the results were similar. Among the matches to "House Purchase" were how to get White House tickets, Colombian Military Aid Package, and "Bipartisan Death Tax Repeal".

Lacking pertinent results from this direct search, the Executive Branch was selected. This produced an index of all government departments. From this list, Housing and Urban Development was selected. This produced a list of agency functions, and "Housing" was selected. This produced a page titled "Own a Home" which contained selections for "first Time Home buyers, and a "Home buyer's Kit". There was also topic titled "Homes for sale by HUD listed by State".

Taking the approach by Executive Branch and Department of Housing and Urban Development had produced results that a direct search of the words "home" and "purchase" had failed to yield. However, the average citizen may not know enough of the government structure to make such a probe.

UK online Citizen Portal

From the Welcome page, the icon **"Quick find"** was selected to produce another page that offered search facilities. The term "own home" produced 254,884 results. The top 500 were arrayed by relevance. However, most of these matches were not pertinent. "Buying on the Internet" was selected, but this produced a page of buying tips, regulations, and rights as a consumer.

The information produced was interesting, but it was not what was sought—specific houses for sale.

Review 2 - Qualifying and Applying for Federal Benefits

First Gov

A search on the Welcome Page for Benefits produced 511,173 matches. Within the top ten, which scored 98 percent relevance, were three that addressed Social Security Benefits, all three were identical, and one gave guidance on Health Benefits. A substantial percentage applied to benefits available only to Federal government employees.

Alternatively, on the Welcome page the Executive Branch was selected, and on the next page a listing of departments in the Executive Branch was presented headed by an emphasized category titled "Interesting Topics" and "Federal Benefits and Grants". Selecting this category produces a list featuring three topics: Social Security, Medicare, and Grants. These are followed by more specific links such as Disabilities Benefits, Disaster Assistance, Earned Income Tax Credit, etc. Selecting any one of the specific benefits will produce the desired information.

UK Online

On the Welcome page, a search for Benefits was made with **Find it**. It produced 10,903 results and displayed the top 500 sorted by relevance, the highest of which was 48 percent. A large number addressed statutory requirements for specific benefits, namely social security, retirement and pension. Ranking 54th in matches with a 42 percent relevance was an item that offered more information to assist a citizen to decide about benefits that may be disabled if one is sick or disabled. This is followed by "Young Peoples Guide to Social Security" and "Social Security Terms and Conditions of Employment"

Items returned by the search have the word "benefits" highlighted where it occurs in the title of explanation. To the right of each is a Button with an Arrow labeled GO to further access information for items.

Review 3 - National Security and Defense

The third and final search used for review was a National security subject common to both Nations, ECHELON. The ECHELON Project is based on a worldwide satellite system for monitoring electronic communications encompassing cell and wireless telephones and other electronic exchanges. This system was developed by the U.S. National Security Agency (NSA) with the participation of several countries. A major part of this system is a large antenna array and downlink station at Menwith Hills, England. The purpose of this review was to determine how forthcoming the information systems of both governments are.

As background, a search for ECHELON on Internet, using Altavista or Excite, yields a number of news articles dealing with this very sophisticated, highly innovative and near real-time system. Yahoo has a collection to references of all articles published on ECHELON. Satellites are used to intercept voice communications and transfer them to a computer system that compares these sounds to a table of keywords in multiple languages. If a match with certain words in the sound bank occurs, the conversation is routed to a linguist for listening and analysis. All of this is done in near real time from intercept to review. One magazine published that the conversation between an official in a government and a party in another country was intercepted, and that money was authorized for blowing up the enlisted men's building in Saudi Arabia. The Army was warned but did not act on the information.

This system has been widely discussed and debated in the Parliament of the European Community. Concerns focus on the invasion of privacy, and the potential use of this information for industrial espionage to give American corporations an economic advantage.

First Gov

A search on the Welcome page produced 2,123 matches, practically all of which were irrelevant. However, the one relevant hit dealt with threats by a Congressman to expose the project, despite the fact that it is already known. No additional searches were performed to locate any information on this subject.

UK online

A similar search was made using **Find it** on the Welcome page. It only produced two matches of 28 and 15 percent relevance. Neither dealt with ECHELON. Since a major satellite downlink station is located at Menwith Hills, a search was made of this name. Twenty four results were found ranging downward from 48 percent relevance. Six of these may address Menwith Hills since two are from the Intelligence and Security Committee, three with House of Commons query to the Secretary of State for Defense, and one with the National Asset Register.

The lack of information from these official organizations only underscores the practice of governments not to confirm materials from unofficial sources.

APPENDIX 20. LINKING THE INFORMATION LIFE CYCLE CONCEPT WITH DIGITAL LIBRARIES

NCLIS POLICY RECOMMENDATIONS ON LINKING
THE INFORMATION LIFE CYCLE CONCEPT WITH DIGITAL LIBRARIES

Written by Satadip Dutta, Virginia Institute of Technology
Reviewed by Edward A. Fox and Shalin Urs[16]

EXECUTIVE SUMMARY[17]

The aim of this paper is to provide recommendations that would be used in the study of reforms to the Federal Government's public information dissemination laws, policies, programs, and practices. The paper describes the information lifecycle that outlines the process of creation, retrieval, and utilization of information. Salient features of government information are then discussed. The paper then explores the issues relevant to government information that include distribution of government information artifacts, issues in standardization of publishing formats, remodeling the information publishing model, and digital preservation of these artifacts. The scope of the paper is limited to exploring issues and making recommendations related to government information artifacts that would help the scholarly community.

THE INFORMATION LIFECYCLE MODEL

Information stored in libraries passes through a definite lifecycle that involves major phases like:

- Information Creation: This phase primarily targets the creation of any kind of information. It involves authors and other creators actually preparing and modifying the information. The organizing and indexing of this information to facilitate retrieval in later phases is also a part of this phase.

- Information Search: This phase deals with retrieving the information stored in (digital) libraries and other repositories. Activities like distribution of information also may be involved in ensuring widespread retrieval of relevant information.

- Information Utilization: This phase deals with issues in accessing the distributed warehouses of information. Information selected may be utilized for creation of new information. Issues related to preservation and mining of information also are relevant to this phase.

Figure 1 illustrates the lifecycle of information. This portrayal was prepared in 1996 at an NSF-funded workshop on Social Aspects of Digital Libraries, hosted by the Department of Information Science, University of California, Los Angeles. The report proposed a definition of digital libraries that encompassed two complementary ideas:

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[16] Created by Satadip Dutta for Virginia Tech CS6604 term project ("Digital Libraries"); reviewed and edited by E. A. Fox (Professor) and Dr. Shalini Urs (visiting Fulbright scholar).
[17] Available at http://www.nclis.gov/govt/assess/assess.appen20.pdf. Interim revision October 16, 2000; final revision November 28, 2000.

1. that they extend and enhance existing information storage and retrieval systems, incorporating digital data and metadata in any form;

2. that digital library design, policy, and practice should reflect social context.

Creating, seeking, and using information are socially situated human activities. Some activities may evolve in the predicted directions as defined by the information lifecycle. However, there also are many less regular information activities that: switch back and forth between phases, skip phases, or end before the cycle is complete.

Information Life Cycle
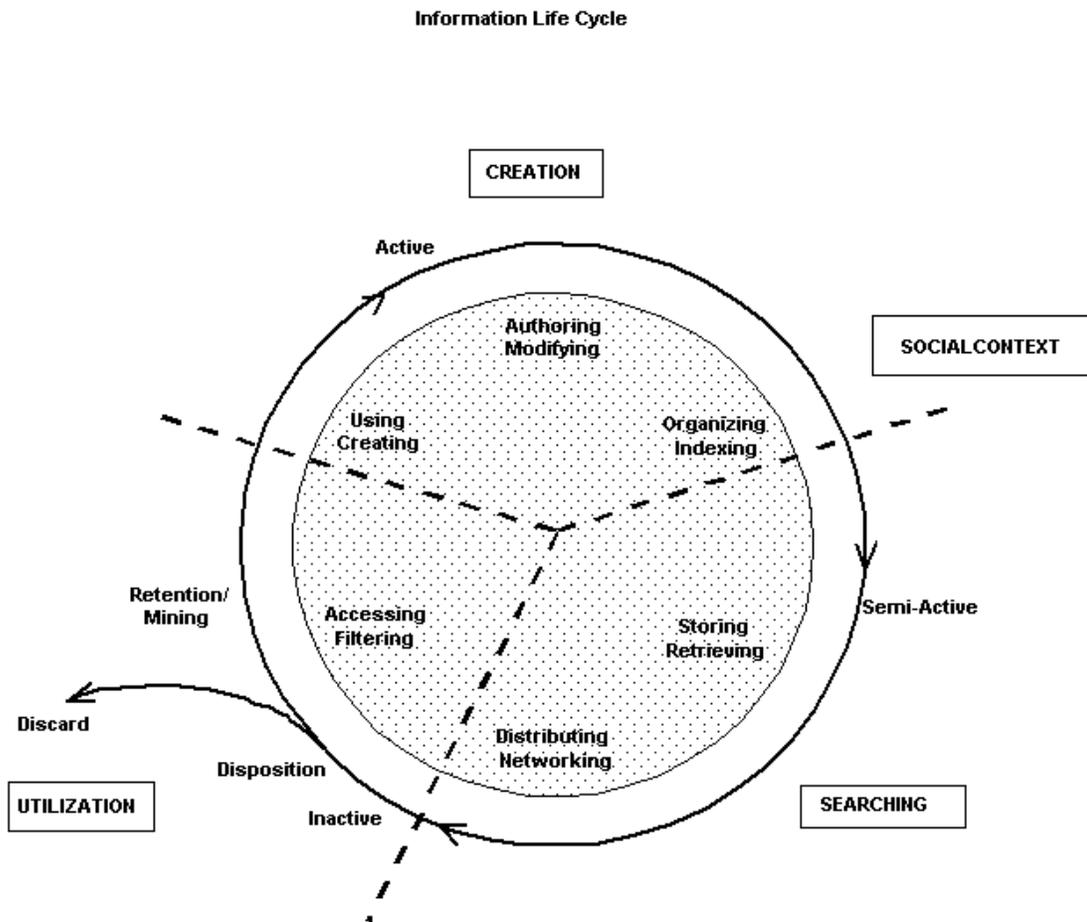
NOTE: The outer ring indicates the life cycle stages (active, semi-active, and inactive) for a given type of information artifact (such as business records, artworks, documents, or scientific data). The stages are superimposed on six types of information uses or processes (shaded circle). The cycle has three major phases: information creation, searching, and utilization. The alignment of the cycle stages with the steps of information handling and process phases may vary according to the particular social or institutional context.

Figure 1: Information Lifecycle[18]

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[18] Adopted from Christine Borgman, editor. *NSF Workshop Report on Social Aspects of Digital Libraries*, 1996, http://www-lis.gseis.ucla.edu/DL/.

Details relative to the information lifecycle with respect to particular types and collection of publications may vary according to the particular social or institutional contexts. Government information has distinct properties that are not always present in other information artifacts. For example a government information artifact is always produced in a context related to the political, technical, administrative, legal, and temporal setting. A context can be defined as a certain time-delimited environmental and social state. For example a foreign trade policy forged during a time of war should be understood in the context of war. The information artifact may not, however, contain information about that context. If contextual information (e.g., being at war) is not captured, the significance and rationale behind document creation may be lost when the document is viewed at other times (e.g., in times of peace). Therefore production and publishing of government information artifacts involves not only the development of the material but also recording the context of production (e.g., in metadata or a hyperlinked document).

INFORMATION CREATION

This section contrasts the current information publication model with a digital library based scheme. Creation of metadata to facilitate information retrieval, and some issues related to document standards, are then discussed.

Information Publishing Model

The current information publishing process goes through a series of phases. Beginning with author, it moves on to the editors, then to publishers, and thence to catalogers and librarians, who add value and enable published information to be consumed by the general public. Figure 2 illustrates this sequential model and describes the steps required therein for authors and readers to communicate over space and time.
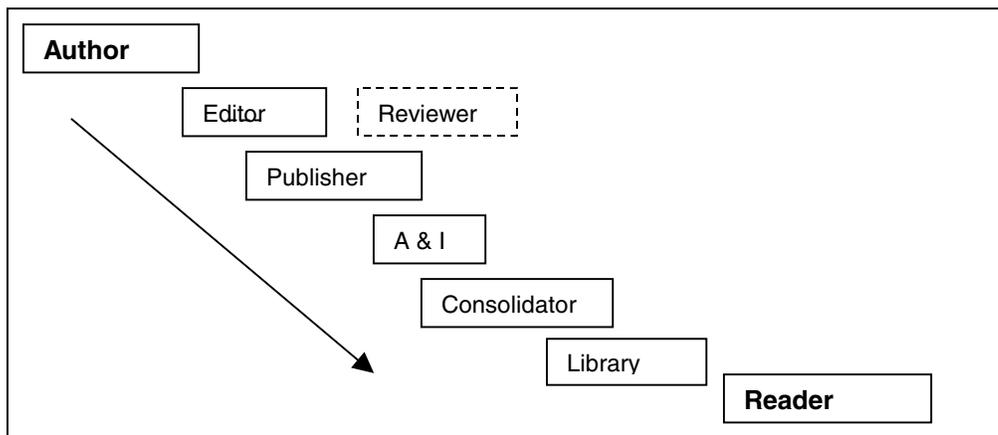
Figure 2: Sequential Information Publishing Model

A different model (see Figure 3) may result when all communication occurs in the same cyberspace (e.g., Internet), or, equivalently, in the same (federated/distributed) digital library. Participants in the process, regardless of their role, may simply be thought of as "users", who play different roles at different times. This "users direct" approach allows submissions to become available at point/time of creation, perhaps with improved/approved versions resulting later. The current revolution in electronic publishing also allows us to aggregate users/roles differently. Using Internet terminology we have:

authors/creators, data providers, and service providers. In this model the data provider is responsible for managing collections/archives that follow content creation.
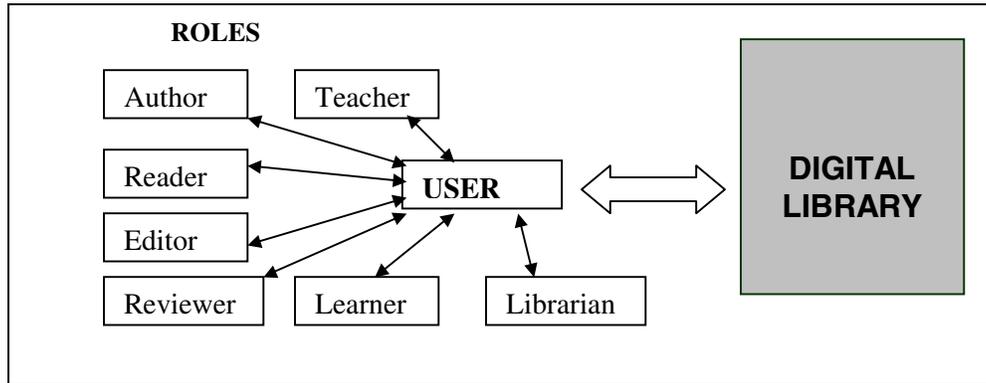
Figure 3: Internet Enabled Publishing Model

In the Open Archives model,[19] data providers need only support a simple harvesting protocol and provide extracts of metadata in a common minimal-level format in response to requests from service providers. The Open Archives Initiative is currently formulating an interoperability framework that would support both e-prints and a wide variety of other types of (scholarly) data archives. Service providers use extracted metadata to build higher level, user-oriented services, such as catalogs and portals to materials distributed across multiple content-bearing sites. Figure 4 illustrates service provision and data provision as the two main aspects of the digital library. Thus from a sequential model, we may shift to an Internet enabled publishing model where the participants, their roles, and the distribution of responsibilities may differ.
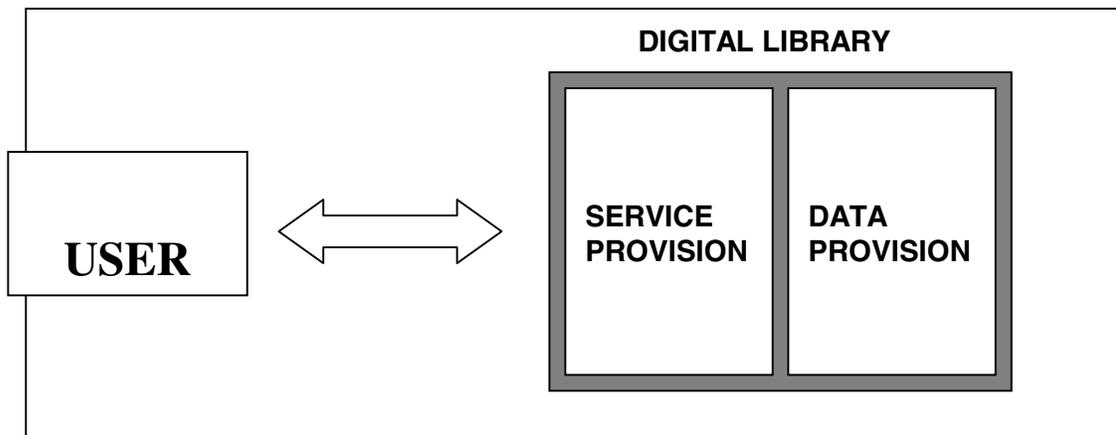
Figure 4: Service Provision Using Metadata

Figure 4 illustrates that users create, interact, and use data through a layer of services. These services may enable the user to create/modify information artifacts as described in Figure 3.

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[19] The Open Archives Initiative, OAI, was launched Oct. 1999 and aims to support interoperability of archives. The current emphasis relates to a harvesting protocol and architecture of very simple data collections ("archives") that have digital objects, metadata objects, and support the protocol. It focuses on a middle, or harvesting, layer, assuming a lower document model layer, and services in layers above. Open Archives Initiative, web site, http://www.openarchives.org/.

Metadata Repositories

The move from a sequential information model to an Internet enabled publishing model may shift more of the responsibility for metadata and index creation to the creators of information artifacts and their agents. Metadata may be stored in repositories that can be used when searching for information present in libraries. The creation of metadata is extremely important for digital objects like datasets, music, speeches, video, maps, and pictures (though improving content-based multimedia information retrieval may play an important new role). The scholarly community also may exploit metadata repositories to mine information, e.g., for discovering trends. Government or commercial (public and private) firms may develop and apply different retrieval routines. These may extend search capabilities beyond keyword-based models to support retrieval by describing the semantics or context of the information. Superior indexing techniques will also play an important role. Research focusing on techniques to automatically index multimedia information, plus semantics and context, with minimum manual intervention, should be encouraged.

Document Formats

Changes in information publishing may necessitate interoperable formats and standardization. In the new model the author/creator may be responsible for submission of information artifacts in standard forms to the digital library. Today there are standards like HTML and PDF. Other formats will evolve and prove better. For example the emerging XML standard can be used to represent, interchange, and manipulate a wide variety of data and information artifacts. Digital libraries also may use such schemes when migrating existing documents, which now exist in a variety of formats. This problem primarily exists due to the lack of consensus about document publication formats.

Apart from the migration and conversion problem, the material produced for government by the research community also needs to be distributed effectively so that everyone can easily find desired information. Many of the document formats require special readers that people may or may not have access to easily. These tools may be available free of cost but the existing infrastructure may not be sufficient to grant access to everyone. Users should be able to view the files without any special requirements. Therefore the software (like readers) must be made publicly available and steps should be taken to ensure that every computer has necessary software installed. This can help eliminate the problem of users with disparate backgrounds having different access capabilities.

INFORMATION SEARCH

This section discusses the creation of digital libraries on the scale of national libraries. The possibility of using services of non-government agencies to build effective retrieval mechanisms and the issues of registering information are then explored.

Digital Libraries

People have traditionally viewed libraries as repositories of information that are easily identifiable and accessible. The creation of very large (e.g., coordinated national) digital libraries necessitates the need to provide the same or greater volume of information, along with ease of access. To make the digital libraries well known or truly identifiable it is necessary first to at least promote them as alternatives to and extensions of the various conventional libraries. This may involve physical creation of multiple locations of digital libraries that are interconnected. Distributed or federated digital libraries are now popular for this and other social/economic/political reasons. Creation of multiple sites with

mirroring/replication balances the load and results in better performance. Focused promotion activities can help publicize such digital libraries.

However, digital libraries will attract tremendous use, probably several orders of magnitude more than conventional libraries, simply because they can be superior to current systems and services. They can seamlessly handle all media types. They should seamlessly handle integration of wide varieties of data and information, with powerful and tailorable services. Not only should there be highly effective searching, but also browsing, linking, navigation, summarization, visualization, routing, filtering, and support for new types of artifact-supported collaboration and communication. They should improve with changes in the emerging networked world, yet provide continuity with the past, building on traditional values.

Thinking of a library as institution, there may be value in the concept of a US National Digital Library, supporting search and other services. NSF is developing NSDL, the National Science (Mathematics, Engineering, and Technology Education) Digital Library,[20] to open Fall 2002, and this has caught the imagination of educators and will have a profound impact on education in the nation. The California Digital Library may have some of the same effect in that state. If the scope of the Library of Congress and National Archives will stay roughly the same, it seems that there is incomplete coverage in the US in our current situation, though we do have Library of Congress, National Library of Medicine, National Agricultural Library, NSDL, etc. There is no digital library covering all fields (with respect to what is generated by the government, deposited according to its laws, or collected by it), even virtually.

Registration

In the United States, information about various topics is collected by different agencies. Often, the agencies that collect these data work independently of each other. This leads to difficulties regarding "registration". The registration problem arises when there is no way to align data for proper organization and integration. Ideally, different types of information can be aligned to produce multiple different views or perspectives that may not be evident from a single document. For example the percentages of different illness affecting children who are 5-9 years old may be collected by one government agency. Reports about the levels of various metals in the soil may be produced by another agency. There may be a possible link between the presence of various metals in the soil and the weakened immunity of children of a particular age group in that area. To illustrate further, a government agency may supply maps and other cartographic information about a particular locality. There might be another agency that produces information about the layout of utility lines, water pipes, drainage system, and the like for a given area. Before undertaking some repair work for the drainage system there may be information that could be derived from aerial photographs of the locality. This might lead to shorter decision times for servicing and repairing drainage systems. The absence of any form of registration makes the extraction of these types of conclusions almost impossible. Digital libraries may benefit from frameworks, using metadata, standards, and conventions, which allow registration of information artifacts.

Retrieval Mechanisms

Once the information is stored in a distributed manner across the country and once registration issues are resolved, the next step would be to create mechanisms that retrieve relevant information for users. These mechanisms require the creation of suitable user interfaces for all segments of the population. For example a scientist searching for recent speeches by Nobel Prize winners in physics might also

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[20] The NSDL site is http://www.smete.org/.

wish to look at related publications. In other scenarios users may try to find information on topics for which they have little background. Further, interfaces should not only try to present the information retrieved but also provide mechanisms that allow users to restrict the context of the information artifact. Otherwise, if a person searches for stars, the digital library might retrieve documents related to entertainment stars, astronomy, songs that contains stars in their lyrics (like the Star Spangled Banner)—all very different contexts.

Retrieval mechanisms also need to be supported for the next generation of mobile computing devices since they increase the accessibility of information relative to the various facets of daily life. Such approaches, along with improved kiosks and programs to improve access in schools and public libraries, may complement ongoing efforts to eliminate the digital divide.

INFORMATION UTILIZATION

This section looks at the issues related to preservation of information artifacts. This is extremely important in the information lifecycle because information artifacts generated in the future need to refer to information produced in the past.

Preservation

Documents need to be preserved such that the context and the history behind the creation of the document are stored in ways that make it easy to retrieve and comprehend. This would allow people in the future to effectively evaluate reports that were produced in the past, with the correct perspective. Also, digital libraries have to cope with the migration of the documents stored in older formats to newer formats.

There continues to be a rapid change in technology that makes digital media obsolete very quickly. For example, as new storage formats evolve, storage capacity increases but at the same time the playback devices for older media become obsolete.
Digital storage media are usually fragile compared to paper. Therefore to maintain a collection in digital media regular checks of the information artifacts become necessary. Also it becomes important that the data is mirrored at certain remote locations. This gives rise to legal and copyright issues, as the information artifacts need to be periodically copied. For example, the Internet Archive (www.internetarchive.org) today plays a valuable role in archiving the Internet. But it may not actually follow the letter of the law since it is a business drawing upon copyright materials, without authorization from copyright holders.

Some extremely pertinent points are raised by the report on *Digital Strategy for the Library of Congress*[21] in this regard. The preservation responsibilities can be classified into loosely defined categories like:

1. a creator, active collector, and primary custodian for digital information artifacts;
2. a partner in preserving distributed digital collections.

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[21] 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.

Initiatives in the direction of assigning stable, long-term responsibilities to organizations like the Library of Congress would help in preservation activities for digital libraries.

CONCLUSION

This paper looks at the information lifecycle in the context of modern technology. It discusses aspects of Internet enabled publishing and other changes facilitated by digital libraries. It recommends further support of research to improve retrieval, as well as of mechanisms to reduce the digital divide. Further, it highlights key requirements, e.g., that government information artifacts must have their content and context preserved.

APPENDIX 21. CREATING THE MAGIC OF INFORMATION

CREATING THE MAGIC OF INFORMATION:
A private sector information industry comment

Written by Paul G. Zurkowski
Founding President of the Information Industry Association and
Member of the NCLIS Group of Experts for This Assessment

INTRODUCTION[22]

The United States National Commission on Libraries and Information Science (NCLIS) draft report, "A Comprehensive Assessment of Public Information Dissemination," is a masterful and cogent job of mustering the facts and good arguments relative to government and government perceptions of what must be done to make its information available to the public in the Internet age.

Unfortunately, it is but half the job facing the decision-makers in trying to decide on the future of these activities.

As the founding president of the Information Industry Association, beginning in January 1969, I had the benefit of working with senior executives of this industry for more than 20 years in helping shape its evolution as a major component of the American economy. It was the leaders of the on-line information industry, Roger Summit with Lockheed Information Services and Carlos Cuadra with System Development Corporation On-line Services (the distribution part of the information industry), their data base suppliers (the production part of the information industry) and the retail part of the information industry made up of information retailers, people skilled in utilizing existing information services to meet the needs of their customers, which together popularized on-line access to value-priced information services worldwide and were the forerunners of the internet age.

Unfortunately, the business lessons learned from that period forward have largely been lost on the Internet generation, which, ironically, itself grew out of the information industry's work and experience. For purposes of this discussion, the information industry's particular experience in dealing with government information marketing efforts is essential to crafting elements of the solution to the problems. This report seeks to identify and mobilize those elements.

However, the Commission's draft report avoids even a discussion of the lessons learned by the information and publishing industry. We need to combine government experience reflected so effectively in this draft report, and the information industry's experiences and resources, in order to achieve the results this report seeks.

Some of these issues are high lighted in the following "Ten Commandments for the Internet Age."

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[22] Available at http://www.nclis.gov/govt/assess/assess.appen21.pdf. This appendix was last revised on December 5, 2000.

TEN COMMANDMENTS FOR THE INTERNET AGE

1. Thou shall be more sensitive to information as a wealth-generating vehicle.

If there is no prospect of economic gain involved with making information content available, there will be fewer jobs and less wealth generation. Information capabilities are one of this nation's most potent exports. Content is to wealth generation in the Internet age, as raw materials were to wealth generation in the industrial age.

2. Thou shall recognize that information has value in direct proportion to what is at stake in a decision

My most favorite quote is from one of my most favorite information guru Chris Burns: "Information content is not homogeneous or all of it of equal value, and it must be target-marketed."

Three examples of pricing methods used in targeting a market are:

a.   Value pricing.

For content that has a specialized and time-sensitive value to a niche market.

The services of the Bureau of National Affairs in Washington is but one example of a company successfully specializing in acquiring government information in a timely fashion utilizing all manner of media to make it available to not only its specialized markets but the public at large on an exacting time basis (The regular reporting of Bureau of Labor Statistics figures so critical to the national economy, is one example of BNA's offerings). Value pricing allows the information company to determine what the value of its services is to its customers. Can the information be garnered elsewhere in the time required? What time and resources are saved by the delivery of its information? A lot of things get factored in to setting a value price, little or none of which is cost of production.

b.   Commodity pricing.

For content that serves broad sectors of the general public.

In the book publishing industry there is a pricing system tied to cost of production called the theory of thirds: one third for the cost of producing the information product, one third for marketing and distributing the information product and one third for return on investment, taxes and profits. A premium may be added for popular authors whose followings may permit a slight bump in the bookstore price. Library purchases often guarantee the financial and distribution success of the product. The pricing of a commodity leaves little flexibility for the publisher.

c.   Marginal pricing.

For content being distributed to achieve social goals, assisting the handicapped, educating the have-nots, etc.

In this case, only marginal costs of providing information to a user are included in the price. It is important, therefore, that government understand what government information relates to what market, for if it tries to treat all information as appropriate for marginal pricing or even in some cases

commodity pricing, Gresham's law will apply. The marginal price will tend to drive goods priced otherwise out of the market, with the result that major segments of the economy are poorly served and wealth-generation based on innovation, timeliness and effective marketing will be voided.

3. Thou shall recognize the benefit to the public of publishing rather than "privishing" an information service.

Jim Adler's Congressional Information Service was innovative and incredibly working with the staffs of more than 250 congressional committees and subcommittees in order to gather the daily output of the Congress (hearings, reports and all the output of Congressional Committees other than the Congressional Record) organize it coherently and make it available to the world in microfilm with on-line search tools. In addition, at a time when the Library of Congress was considering discontinuing its microfilm publication of all congressional bills and resolutions the Congressional Information Service took over their publication at a cost to consumers less than a third of the price offered by the Library of Congress. This was possible by virtue of CIS's marketing effort, which more than quintupled the market for the product. Mr. Adler tells the story of his marketing of a book while employed by a publishing house. His boss said he hadn't published it but had "privished" it. There is a significant difference.

4. Thou shall look to the private sector for significant innovation.

When the Congress first passed the income tax laws, two New York University law professors set out to publish the tax laws and regulations. They found that by the time the books had been printed there already were numerous amendments. What to do? They severed the bindings, punched holes in the pages, added pages to incorporate the amendments, new regulations and changes in the law and produced the first loose leaf tax service under the name Prentice Hall (the maiden name of each of their mothers) a service that faces a lot of competition today.

The on-line revolution was led by two pioneers, Roger Summit of Lockheed and Carlos Cuadra of SDC, who sweated through the software, marketing, storage and retrieval problems for a vast array of databases, including, incidentally, NTIS, for distribution on-line through the application of ARPAnet's packet switching capabilities. Their biggest contribution was to wrench users out of their trained Incapacity to use online tools. They are excellent examples of the innovation required. Without their 20-year efforts at this unprecedented undertaking, the Internet would have been much slower in its rise to dominance.

Examples of private sector innovation abound. Find-SVP is but one of a very large group of companies providing "retail" access to the information resources accessible in print and on-line which rely on skilled librarians to sharpen the customer's focus on the exact question for which the customer seeks an answer and to expertly search the relevant knowledge base.

Software designers developed the software by which many information producers arrayed their information content to be accessible online as well as in print. Where do you think HTML came from?

The Information Industry Association, which organized this plethora of exciting and innovating companies, helped industry, the public and government recognize and deal with this group of highly creative and independent companies as a new industry. IIA's efforts helped facilitate the sharing of experience and the growth and expansion of the industry.

5. Thou shall not assume a monopoly position in the distribution of government information.

Access to government information is maximized by assuring competition in its distribution. No single entity can imagine all the appropriate means and formats and marketing approaches needed to make information available to all with a need for it in our complex economy.

The first full-text collection of legal case opinions was created by Mead Data Central in the form of a service called Lexis. They later added a full-text service called Nexis for news information. Lexis has had a far-reaching impact on legal education and the practice of law. In education Mead focused on training law students in the use of their system, which paid off as these young lawyers started asking their new employer law firms to subscribe to the service. West Publishing was several years behind in introducing its Westlaw service, because of a casebook mind-set. West's home office in Minnesota even carried the words "Law Books." West did not immediately see or react to the market Mead developed because Mead's product did not significantly affect the market for law books. Now the legal market is the beneficiary of a high level of on-line competition. If the government had created and marketed this product at marginal cost levels, neither of these premiere information publishers would have been able to enter the market or to apply value pricing to its services—to the severe disadvantage of the legal profession.

6. Thou shall seek to learn the marketplace lessons of other-than-government information undertakings.

In the financial markets area important information is being spun off of transactions in the market. (This information is necessary to the making of very important decisions and is priced accordingly.) Each of the stock exchanges is served by a wide variety of information services packaging and distributing information vital to the operation of our national economy and published by private corporations. The stock exchanges, which themselves have obvious information skills and capabilities, have found it in their own best interest to facilitate the financial information services offered by such companies as Dow Jones & Company, several McGraw Hill companies and many, many others.

In the case of McGraw-Hill, its bond information service developed a major innovation when it provided the information in ink-print and on-line because they found that that is what their clients wanted and would pay for. The conventional wisdom at the time was that on-line information would kill the market for ink-print products. Reaching that profitable decision involved a significant investment in market research.

7. Thou shall encourage private sector firms to develop information search tools.

In the legal field, a good example is Shepard's Citation Service. A turn of the 19th century capability serving lawyers and courts is a service, which relates every case to every case cited in a decision, whether it was affirmed, distinguished or overruled. Shepard's Citation service is a classic example of a private sector firm getting control over a large collection of information in order to serve a specific niche market with a less than full text information tool essential to the operation of that market segment.

In the scientific field, Dr. Eugene Garfield, at the Institute for Scientific Information, applied the citation concept developed by Shepard to the complex field of science research and publishing. It proved to be a significantly less expensive way of identifying relevant research in the literature since it did not involve abstracting each article but tagged important information by typists typing the journal article title in a citation mode. Garfield also was able to diagram an area of research by identifying

what research cited what articles ultimately identifying the lead piece of research by the number of articles citing the lead article. This diagramming capability also identified all the participants in a particular area of research—to the ultimate gain of our scientific apparatus and the general public.

To get a new and unprecedented product off the ground took clever deep-pocket marketing strategies. Such a service won't evolve for E-government subjects unless incentives and legal protections are provided.

A contrary experience was that of a company that sought to index the Congressional Record on a daily basis for early morning same day delivery. Experts who regularly read the Record in their jobs were sought across government and the private sector each to abstract a segment down to every discrete entry in the Record in early pre-dawn hours daily. This level of abstracting eventually became too costly to maintain.

8. Thou shall honor Article I, Section 8 of the U.S. Constitution.

Our founding fathers placed a high value on copyright. It grew out of their revolutionary era experience with England's Crown Copyright. The PIRA[23] of that era (please pardon a private sector concern about the power of government in this critical area) was the Stationers Company, which was authorized by the King to grant Crown Copyrights to publishers. A Crown Copyright was necessary for a publisher to publish. The first newspaper in the colonies was the Boston Newsletter (Readex Corporation memorialized this historic event by providing me a copy of their microfilm collection of early American newspapers which leads off with the Boston Newsletter). When the Boston Newsletter supported the Boston tea party, the Stationers Company labeled it a seditious newspaper and revoked its Crown Copyright and its right to publish. This was such a piercing fact of revolutionary life that the founding fathers took care of the problem in Article I. Since the freedom of speech and press provisions waited for the Bill of Rights, you can appreciate the significance they attached to their copyright solution to the Crown Copyright problem.

The copyright provisions of the Constitution were considered key benefits of the revolution because they took copyright away from the government and gave ordinary citizens ownership of the products of their minds. This concept seems right for our time as well.

An equity argument can be made as the basis for providing protection to private sector companies, which develop search tools, which may not rise to the level of copyrightability. Some attention should be given to a national unfair competition statute which would encourage innovation in these areas by protecting the innovator against someone standing on his shoulders and stealing his work product (reaping where he or she hasn't sown).

9. Thou shall forget the Public/Private Partnership idea.

Information content is a unique, but real, economic good. The public/private partnership idea has outlived its usefulness in efforts to sort out a government/industry relationship to deal with this unique economic good. A first step would be the creation of a business relationship based on mutual respect for each other. Secondly, it must be recognized that incentives are needed in order to mobilize the totality of resources available in this country. Just reading this NCLIS report makes clear the country faces a huge challenge and all parts of the economy need to be melded together to meet the challenge.

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[23] The Public Information Resources Administration (PIRA), proposed by the Commission.

If the national goal is to provide information directly to affected communities of citizens, one way to do so is to seek out and rely on companies which have created a market for information and are currently serving a specific targeted community. It's being done in the library community where the community served by specific libraries benefit from access to government information. Devise, or call on private sector firms to devise, incentivised ways to funnel the government information to populations in the markets they serve. These efforts can be redundant if the right incentives can be worked out. Government must recognize that these functions cost real money and that incentives to invest the money needed to do the job are necessary. Putting government capital at risk behind a government marketing scheme should not be considered. For most market segments there are a multiplicity of information services capable of implementing workable dissemination schemes. These are not public-private partnerships but simply good, day-to-day business relations. Make them a fact of life, rather than an idealized public-private "partnership." Few business experts recommend a partnership as the best vehicle for economic activity.

Does the government label computer manufacturers or other hardware and software or communications companies "public/private partners" when the government purchases computers, software or communications services to enter, organize and use the Internet to disseminate information?

10. Thou shall not directly engage in government marketing of information.

The use of tax money by government personnel undisciplined in market-place factors and experience to do what the private sector has experience doing and is engaged in doing is inappropriate and unconscionable from a taxpaying information company viewpoint. Nor is it appropriate for a government-funded entity to be proprietary about its tax-supported information content to the extent of excluding or limiting private sector marketing and distribution efforts. The partnership idea seems to grow out of a kind of dog-in-the-manger attitude: "This is our information and we must control it." It isn't a question of the rights of government ownership, but one of accomplishing the most effective dissemination.

The role of government should be to ensure the operation of a fair, open and competitive information marketplace so as to ensure that all citizens participate and benefit from its expansion and the wealth the activities generate. In fact, this concept of a fair, open and competitive marketplace, including the Internet experience, is a concomitant element of the ascendancy of democracy worldwide.

How best can government and industry profitably reach out to the growing worldwide market for information, both privately and publicly generated and disseminated?

Certainly these are some of the considerations, which should not just appear in, but also be a driving force of the NCLIS report.

CONCLUSION: INFORMATION IS MAGIC!

Businesses like the Lockheed, SDC, Institute of Scientific Information, Shepard's, Bureau of National Affairs, Congressional Information Service, Dow Jones, McGraw Hill, Mead Data Central, West Publishing (some of which have changed ownership over the years) and the whole information industry deserve the confidence of the government and the American people based on their awesome wealth-generating capabilities, all in the service of specific niche markets across the United States and the world. Each of these companies has demonstrated that the right information at the right time is

magic for the person or business who can find it, recognize it and capitalize on it. They are experienced in creating this magic from all manner and means of information. That is the basis of wealth generation in information. Incorporation of their capabilities in support of the mission of this report is imperative if it is to be successful.

The information business is an ever-expanding universe. Government should fully tap into its capabilities to accomplish its creative and distribution objectives, but a better meeting of the minds in this field is required to create the climate within which that can happen.

It is imperative that private information services become an integral part of the government and Internet paradigm.

Toward that end, a major private sector conference focusing on content as an economic good should be held to assist in completing the second half of this report.

Thank you for allowing me to share these thoughts with everyone who is persevering in efforts to identify and achieve the best of all possible results in this area. Thank you for your continued diligence.

In this connection, I recommend that a major conference be held focusing on ways to harness private sector capabilities in disseminating government information content. Many, many information and Internet companies have things at stake in this arena and need to be encouraged to focus on how they can use their entrée and good will in their targeted markets to help facilitate the government's important dissemination mission. I personally organized such a conference from which was born the Publisher Copyright Clearinghouse, in that case the private sector publishers and information companies There clearly is a need for as comprehensive a statement of these capabilities to match up with the current statement of government information functions already present in the report. A conference is one tool to get those capabilities to surface in support of this mission.

There is both energy and expertise in the private section without which you will not do as good a job of getting information out to people in a form that is useable, as you would like. It would be foolish to try to do the job without that energy and expertise and it would be inappropriate to try to duplicate it in the public sector. That's called reinventing the wheel.

Thank you for allowing me to share these thoughts with everyone who is persevering in efforts to identify and achieve the best of all possible results in this area. Thank you for your diligence.

APPENDIX 22. STUDY PANELS AND GROUP OF EXPERTS MEMBERSHIPS

> Note: This is a final list of members for each of the four panels, and for the Group of Experts, as of October 23, 2000. These are special groups that NCLIS established to assist the Commission in formulating findings, conclusions, and recommendations, and/or reviewing and critiquing those findings and recommendations, for the Comprehensive Assessment of Public Information Dissemination.

**FINAL PANEL AND GROUP OF EXPERTS MEMBERSHIPS
FOR THE NCLIS COMPREHENSIVE ASSESSMENT
OF PUBLIC INFORMATION DISSEMINATION[24]**

PANEL ONE—NTIS BUSINESS MODEL

Chair: **Peter Urbach**, Retired, former Deputy Director, National Technical Information Service (NTIS), former publishing industry executive

Members:
Kenneth Allen, Executive Vice President & CEO National Newspaper Association, formerly OMB/OIRA Staff

Steve Arnold, President, Arnold Information Technology

Ernest G. Baldwin, Director, Library Program Service, Superintendent of Documents, U.S. Government Printing Office (GPO)

Mel Day, Retired, former Director, National Technical Information Service (NTIS), former Deputy Director, National Library of Medicine (NLM)

Mike Majcher, Retired, former Manager, Technical Information Center, Xerox Corporation

Steve Needle, Assistant to Director, National Technical Information Service (NTIS)

Kent Smith, Deputy Director, NLM

Tim Sprehe, Sprehe Information Management Associates, formerly OMB/OIRA

Kenneth Wiggin, State Librarian, Connecticut State Library

Jay Young, Retired, former Director, Sales Service and Director, Library Programs, Superintendent of Documents/GPO

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[24] Available at http://www.nclis.gov/govt/assess/assess.appen22.pdf and at http://www.nclis.gov/govt/assess/panelmem.html.

PANEL TWO—INTERNAL GOVERNMENT USERS

Chair: **Kurt Molholm**, Administrator, Defense Technical Information Center, and Chair, CENDI

Members:
Owen Ambur, Systems Analyst, Division of Information Resources Management, U.S. Fish and Wildlife Service, Department of the Interior

Lawrence Brandt, Program Director for Digital Government, National Science Foundation (NSF)

Jonda Byrd, National Library Network Program Manager, Environmental Protection Agency (EPA)

Bonnie Carroll, Executive Director, CENDI, and President, Information International Associates

Blane Dessy, Director, Library Staff, Department of Justice, and Vice Chair, Federal Library and Information Center Committee (FLICC)

T. C. Evans, Assistant Director, Office of Electronic Information Dissemination Services, U.S. Government Printing Office (GPO)

Walter Finch, Associate Director for Business Development, National Technical Information Service (NTIS)

Patrice McDermott, Co-Director, Agenda for Access, OMB Watch

Ray Mosley, Director, Office of the Federal Register (OFR), National Archives and Records Administration (NARA)

Al Pesachowitz, Director, IT Consulting, Grant Thornton LLP, formerly CIO, Environmental Protection Agency (EPA) and Vice Chairman, CIO Council

George J. Roncaglia, Head, Scientific and Technical Information Program Office, National Aeronautics and Space Administration (NASA)

John A. Shuler, Richard J. Daily Library, University of Illinois at Chicago

Kent Smith, Deputy Director, National Library of Medicine (NLM)

J. Timothy Sprehe, Sprehe Information Management Associates, Inc.

Susan Tarr, Executive Director, Federal Library and Information Center Committee (FLICC), Library of Congress

Walter Warnick, Director, Office of Scientific and Technical Information, Department of Energy

Observers: **Ann Miller**, Duke University and President, Government Documents Roundtable (GODORT) of the American Library Association (ALA), and **Lynne Bradley**, Washington Office, American Library Association (ALA)

PANEL THREE—EXTERNAL (TO GOVERNMENT) USERS

Chair: **Miriam Drake**, Dean and Director of Libraries, Georgia Institute of Technology

Members:
Prudence Adler, Association of Research Libraries

Lewis Bellardo, Deputy Archivist of the United States, National Archives and Records Administration

Kevin Donovan, Environmental Protection Agency

Sharon Hogan, University of Illinois, Chicago

Barbie Keiser, Information Resources Management Consultant

Diane Nester Kresh, Library of Congress

Bernie Margolis, Boston Public Library

Jim McGinty, Cambridge Information Group

Barbara Peterson, 3M Library and Information Services

Barbara Quint, Searcher Magazine

Dale Stanley, Pfizer, Inc.

Rick Weingarten, American Library Association

Freida Weise, University of Maryland

Gladys Ann Wells, Director and State Librarian, Arizona State Library, Archives and Public Records

PANEL FOUR—PUBLIC-PRIVATE SECTOR PARTNERSHIPS

Chair: **Wayne Kelley**, Retired, former Superintendent of Documents, GPO, former industry executive

Members: **Mary Alice Baish**, American Association of Law Libraries

Francis Buckley, Superintendent of Documents, U.S. government Printing Office

Anne Caputo, Special Libraries Association

Blane Dessy, Director, Library Staff, Department of Justice

Dan Duncan, Consultant, former Vice President for Public Relations, Software and Information Industry Association, and previously Information Industry Association

Wally Finch, Associate Director for Business Development, National Technical Information Service

Neal Gregory, Consultant

Donald Hagen, Bernan Associates

Richard Kaser, Executive Director, National Federation of Abstracting and Information Services (NFAIS)

Nancy Kranich, President, American Library Association

David LeDuc, Software and Information Industry Association

Edwin Levine, Chief Information Officer, Environmental Protection Agency

Eric Massant, Reed Elsevier, Inc.

Peyton Neal, Consultant, PRN Associates

James Nelson, State Librarian and Commissioner for Libraries and Archives, Kentucky

Roxanne Williams, formerly U.S. Department of Agriculture

Observers: **Lynne Bradley**, American Library Association; **Steve Buckley**, Radian, Inc.

GROUP OF EXPERTS

Christopher Burns, President, Christopher Burns Inc.

Edward A. Fox, Director, Networked Digital Library of Theses and Dissertations, NDLTD, and Professor, Department of Computer Science, Virginia Tech

Robert M. Hayes, Professor Emeritus, Graduate School of Education and Information Studies, UCLA

Don Langenberg, Chancellor, University System of Maryland

M. Stuart Lynn, Retired, and formerly Associate Vice President, Information Resources & Communications, Office of the President, University of California

Deanna Marcum, President, Council on Library and Information Resources (CLIR)

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Ron Plesser, Piper Marbury Rudnick & Wolfe LLP

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Carol A. Risher, Senior Vice President, Business Development, Savantech, Inc.

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Paul Uhlir, National Academy of Sciences

Paul Zurkowski, Newspaper Editor, and former President, Information Industry Association

APPENDIX 23. PANEL ONE: FINAL REPORT ON A REFORMED NTIS BUSINESS MODEL FOR THE INTERNET AGE

> 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 ONE: REFORMING THE NTIS BUSINESS MODEL FOR THE INFORMATION AGE

CONTENTS[25]

INTRODUCTION

The assignment of Panel One was to focus on the business model of NTIS and recommend a new business model for NTIS for the Internet age. The work done in the first phase of the NCLIS study of NTIS suggested that the current business model—full cost recovery—was a major contributor to the current fiscal instability of the organization. The Panel concluded that proposing a new business model for NTIS in itself would not be sufficient but that a broader look at NTIS, its mission, its relationship to other Government information organizations and its role in the Internet age was needed. This report sets forth the Panel's views and conclusions.

The Panel—consisting of eleven members, a diverse mix of representatives of industry, Federal and state government, consultants, and trade associations—conducted its work exclusively by e-mail exchanges with no face-to-face meetings. The Panel conducted e-mail correspondence over a two-month period from late July to late September 2000. The members of the Panel are listed in Appendix A.

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[25] Available at http://www.nclis.gov/govt/assess/assess.appen23.pdf. This report was last revised on October 15, 2000.

The preliminary report from the first phase of the NCLIS NTIS study contains many of the same conclusions and recommendation reached by this Panel.[26] The Panel reviewed this preliminary work and sought to expand those conclusions with which the Panel was in agreement.

THE NTIS BUSINESS MODEL—WHAT WENT WRONG?

NTIS is a federal agency, not a hot Internet startup. Thus, when we speak of the NTIS business model we refer to the way in which NTIS obtains its funding (appropriations, sales income, or reimbursements from other agencies) not whether it obtains its revenue from banner ads, charging for links or auction services.

In the 1970's and earlier, NTIS and its predecessor organizations received a mix of funding from appropriations, sales income and reimbursements from other agencies. The basic business model, however, was sales based with report sales and subscription income generating the lion's share of revenue. Appropriations in the earlier years were used primarily for the costs associated with acquiring publications and for processing the publications into the NTIS collection—the costs of indexing abstracting, creating master microfiche and archiving master copies. Sales income was recovered from the purchasers of publications and subscription services, essentially for the incremental costs of providing these services, although in later years excess sales income was also used for input processing to offset declining appropriations. Reimbursements from other agencies were received to cover the costs of the services provided to these agencies.

Over the years there was an ongoing pressure to reduce appropriations and increase sales income and in good times—with many new publications coming in and with substantial sales—this was feasible. Increasing prices and new products combined with growing sales volume contributed to growing sales income. In fact, all appropriations for input processing were phased out by 1977 and sales income was used to pay all input costs from that point on.

In 1992, as part of the American Technology Preeminence Act (15 USC 3074b-1), Congress added the requirement that "operating costs…associated with the acquisition, processing, storage, bibliographic control, and archiving of information and documents shall be recovered primarily through the collection of fees." This had the effect of locking in the practice of shifting the costs for the central collection and initial processing of the NTIS publications for public availability from the general taxpayer to the purchaser of NTIS products and services. The Government was essentially abandoning responsibility for paying for the management and organization of its information, the very library-like functions that have always been taxpayer-financed. The report buyer—whose tax dollars had already paid for the agency research and the preparation of the research report itself and who was being charged the incremental cost of distribution of the report—was now also being asked to pay the costs of making the reports accessible to the public through a central repository.

This had the effect of making NTIS more entrepreneurial and aggressive in its business dealings to raise the operating funds lost in the appropriation. Competition with the Superintendent of Documents for popular titles increased with NTIS seeking to offer the publication-originating agency a more attractive arrangement to secure the publication for its list. Deals were struck with private vendors a development that had the Commerce Department Inspector General "…concerned that in order to replace lost sales, NTIS is seeking business opportunities on the perimeter of its statutory mission,

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[26] US 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: Government Printing Office, March 2000; http://www.nclis.gov/govt/ntis/presiden.pdf.

where it risks competing against private businesses." (Department of Commerce, Inspector General's Semiannual Report to the Congress of March 31 1999, page 14)

Concurrently, in the late 1980's and 1990's, because of the strong economy there was a shift from publicly funded research to private research and as a consequence the number of Government research reports provided to NTIS declined. At the same time, with the growth of the Internet, agencies began to make their research reports available on agency Web sites for free, competing with NTIS report sales. The combination of lower new report input (a 35% drop in items added to the collection from 1993 to 1998) and competing free sources for the information NTIS sold, resulted in declining sales (a 43% drop in publications sold from 1993 to 1998). This in turn led to the financial difficulties of NTIS. In August 1999, based on these financial difficulties and political considerations beyond NTIS' control—possibly relating to the Govsearch and World News Connection controversies,—the Department of Commerce recommended the closing of NTIS and the transfer of its archive to the Library of Congress.

It cannot be a surprise that the combination of events—lower report input, competition with free agency Web sites, loss of appropriated funds, aggressive entrepreneurial zeal with perhaps inappropriate business arrangements—led to financial and other difficulties for NTIS. However, it does not follow that the Government should therefore abandon the notion of a central source for Government technical information charged with making this information accessible to the Public.

If the Department of Commerce proposal to close NTIS is adopted, there is no need for a new NTIS business model for the Internet age. Therefore, before we explore a new business model we must first determine whether there is a need for an NTIS in the Internet age.

IS THERE A NEED FOR NTIS IN THE INTERNET AGE?

If the picture painted in the Department of Commerce Fact Sheet and Press Release (Department of Commerce August 12, 1999) is correct, all agencies will mount all of their publications and reports on their own Web sites, which are then kept there as long as the public has a need to access the information. Powerful search engines search the full text of all the reports across all agency sites to identify the specific information the public user requires. The identified full text of the publication is then available for free downloading from the agency Web site. Thus, the public has free access to all Government information all of the time and anything required can be located with ease and there is no need for a central NTIS, a central Superintendent of Documents or any central document locating service or information accessing tools. This picture, however, is not anywhere near accurate.

Unfortunately, not all of each agency's public information is available on the agency's Web site and perhaps much of it never will be. What is there today may not be there tomorrow. Not all of the information on the Web can be searched and found with the search engines. Can the United States afford to rely upon the simplistic and utopian picture painted by the Department of Commerce and close down its central information repositories?

Certainly, specific Commerce publications, as cited in the Commerce Fact Sheet in August of 1999 are available on the Commerce Web site. (The Commerce Fact Sheet cites two high profile policy studies as examples). But how long will they be maintained on the Department's Web site and how about the many less prominent Department studies not on the Web site? How about those studies paid for with taxpayer funds whose results do not support the Department's policy positions? Will they be featured on the Department's Web site? Will even the most sophisticated search engines locate them?

The two Commerce publications cited in the example above were published in late 1998 and 1999 and Commerce has them on their Web site for public access. How about older publications, say those pre-dating 1996 and the use of the Web for public access of Government documents? Most of these are not available in electronic form for Web mounting. Does Commerce intend to invest millions of dollars in converting these older documents to Web-ready form? Does Commerce expect other agencies to do so? At whose expense and with what funds? Note that 36% of NTIS' report titles sold in 1998 were over 10 years old. Agency based Web servers cannot meet this demand unless substantial investment in backfile conversion is made. Or should we simply assume that anything not in Web-ready form that was previously published is of no value to the public and no longer requires public access?

Agency Web sites are intended to provide agency information (and perhaps external information related to the agency mission) to the agency's constituency in support of the agency's mission. That may not be consistent with providing Government information to those members of the general public not specifically associated with the agency mission. For example, the Defense Department is responsible for providing access to its extensive collection of research reports to its internal scientists and engineers and its large contractor community. How much effort should DOD expend to insure that non-defense related users have adequate access to this information and how concerned should the Defense Appropriation Committees be with this? Will a Web site designed to meet the needs of the Defense community always meet the needs of a non-defense related university researcher or small businessman? Should it? The fundamental mission of providing access to Government information to avoid duplication of research effort and to promote economic growth—a mission that might at one time have been thought to be a part of the Department of Commerce—gets lost in the specific missions of the various agencies and their Web sites.

Having Defense (as well as other mission agencies) make its (their) technical information available to the general public as a near-free by-product of meeting its mission needs is worthwhile and should be encouraged. It is not, however, sufficient to fulfill the Government's responsibility to make Government information available to the public. There needs to be a clear focus on public information dissemination, which is not likely to be present (all the time) in the mission agencies. That is the role for NTIS.

There also needs to be a back-up mechanism, a safety net, to insure that what the mission agency does not disseminate or does not mount on its Web site, or takes down or does not properly process for public access is still accessible to the public. That is the role for NTIS. Clearly a central information service needs to take advantage of each mission agency's efforts to distribute the agency's information to minimize duplicative costs but it also must be prepared to step in and provide access when the mission agency does not. That is the role for NTIS.

As mentioned above, there is the rather significant matter of providing access to the tens of thousands of valuable reports and publications that are not in Web-ready form. These require either expensive conversion to Web-ready form or old-technology reproduction and represent at least one half of the total current NTIS demand. Clearly, there is a role here for NTIS.

In addition to mounting the full text of some of their reports on their Web sites and thereby providing some public access, the mission agencies may also provide some finding tools to identify reports sought by users. These tools might include some indexing, abstracting and cataloging of the reports and publications. Or they might not, as is the case with the two Commerce Department examples. The tools might include a search engine on the Web site to locate reports or the site might rely upon users accessing commercial Web search engines to locate reports on the site. The search engines will work for some reports but not for others. Where reports and publications are stored in PDF image form without a full text search capability neither the search engine on the site or the commercial search

engine will find the document. Where the agency chooses—for more efficient searching of its material—to store its reports and publications in a separate searchable database on its Web site, an external search engine will not be able to search the contents of the database and the reports will not be found.

Some of these shortcomings can and probably will be overcome in time. Once standards are set and adhered to some of these access problems will disappear. As the technology improves more of these problems will disappear. But today, with the current state of the Internet, standards and technology, public access to agency publications via agency Web sites is very much a hit or miss proposition. Once again, there is a need for a back-up mechanism, a safety net, to insure that the public has access to the mission agency reports and publications. That is the role for NTIS.

The Government Information Locator System (GILS) established under the Paperwork Reduction Act of 1995 might have been expected to solve some of these problems and perhaps to a very limited extent it has. However, GILS has not been widely implemented throughout the Government. The GILS record structure was publicized and agencies were required to use GILS but were permitted wide latitude in how GILS was to be applied. The result, to the extent that agencies participate, is a lack of consistency and predictability in search results. Similarly, the brand new FirstGov.gov Web site might solve some of these problems in time, but the initial implementation of the Web site suggests that much work remains to be done, particularly with respect to search precision, which is critical to the NTIS application. Even if GILS or FirstGov improve dramatically, some issues—such as detailed searching within a very large database, e.g. NTIS reports—will not be solved by these very large Government-wide systems. Thus, there will continue to be a role for NTIS.

As the result of the National Technical Information Act of 1988, NTIS has unique statutory authority for joint ventures with private sector information vendors (see 15 U.S.C. 3704b(a)(1)(A)). NTIS will typically use this authority to find a private sector partner who is willing to underwrite the cost of producing an information product that an agency can no longer produce either because it lacks the funds for printing or the staff resources to develop it. It will then share the resulting revenue with the partner and provide copies to the depository libraries. A good example is the Commerce Department's own "U.S. Industry and Trade Outlook," the successor to the "U.S. Industrial Outlook" which had been produced for more than thirty years but had been discontinued. It was reintroduced in 1998 with a new focus on trade pursuant to a partnership between NTIS and the McGraw Hill Companies and was reissued in 1999 and again in 2000.

In addition to joint ventures, NTIS makes its own Bibliographic Database available to vendors who add value to it, redistribute it, and pay NTIS a portion of the revenue they derive from it. Although this royalty may not be appropriate under the new business model to be suggested by this Panel, the role of NTIS in providing a central gateway to Government information for potential private sector vendors is a valuable role that would continue in the Internet age.

The relationship between NTIS and the Superintendent of Documents/Depository Libraries, discussed later in this paper, warrants mention here. There is clearly some conflict, overlap, and duplication between these organizations and there is a need to rationalize their roles. This problem, however, is beyond the scope of this Panel's effort. Nevertheless, the unique functions that NTIS performs for the scientific, technical and engineering information of the Government must be continued and thus there is an ongoing role for NTIS.

There appears to be—especially at this stage of Internet development—a clear need for an NTIS-like organization to provide overall management of the system that provides public access to agency

reports and publications. Sometimes this organization would directly provide public access to reports and publications, sometimes it would simply point to where the material is available on agency Web sites and it would insure that all content is available and accessible. It would also provide access to private vendors seeking to redistribute government information. Closing NTIS before such alternative systems are in place and operating would deprive the public of the access to Government information that was available in pre-Internet days.

SCOPE OF NTIS COLLECTION

NTIS' predecessor organizations began operations with a scope limited primarily to scientific, technical and engineering information, the so called STEI gray report literature. Over the years the scope of the NTIS collection expanded to include social science and business information to meet the needs of Government agencies for the distribution of their content.

These changes in scope were approved in a 1954 Controller General opinion later codified in the *Code of Federal Regulations* (15 CFR 1180). Scientific, Technical and Engineering Information (STEI) is defined as "information that bears on business and industry generally, such as economic information, market information and related information" that "can embrace matters beyond the restricted field of applied science and the mechanical arts" so long as it is "limited to information which has a direct relationship to business, industry or technology" (15 CFR 1180.2).

The Panel does not believe NTIS' scope should be restricted to science and technology narrowly defined. However, the scope should not include general public information that does not have a direct relationship with business, industry or technology.

NTIS OPERATIONS IN THE INTERNET AGE

The roles for NTIS in the Internet age—at least until such time as improvements in standards and technology solve some of the current problems—would be to provide:

1. Searchable access to the reports and publications published by the mission agencies, particularly to those users outside the agency's constituency,

2. Pointers to where the report may be obtained on an agency (or other) Web site,

3. Backup distribution of the report or publication content itself when it is no longer available from the originating agency or where the user requires a paper or microfiche copies and the agency only provides electronic access, and

4.   Permanent Accessibility.

SEARCHABLE ACCESS

Providing searchable access to agency reports has been the basic business of NTIS and its predecessors since its inception over half a century ago. NTIS performs this function by cataloging, indexing and abstracting the reports of the smaller agencies and other sources who do not perform these tasks for their own audiences and creates the searchable NTIS database. For the larger agencies that do this work themselves (DOD, DOE, NASA, etc.), NTIS obtains their cataloging, indexing and abstracting information in machine readable form, reformats it, if necessary, and adds it to the searchable NTIS database. NTIS now augments this with similar data obtained by NTIS' web capture

of agency documents not forwarded to NTIS. The resulting NTIS database provides consistent searchable access to the NTIS collection across all of the participating agencies.

This database should be made available on an NTIS Web site for free public search, thus providing free (publicly funded) access to a searching capability of the information collected by NTIS. This same capability would provide depository libraries and their patrons with convenient, free searchable access to the NTIS database. Note that this is not access to the content of NTIS reports but only to the database of information about the reports.

POINTING TO DOCUMENTS ON THE WEB

Providing access to information about the document is only the first step. NTIS must also provide the user with a means of obtaining the documents identified. In the past, NTIS sold the documents from its warehouse or produced copy on demand when requested or distributed microfiche. In the future, in addition to these established methods of distribution, NTIS will also <u>point</u> the user to the document on the agency's Web site where the full text of the document is available for free. Whenever there is a Web version of the document available, NTIS (the NTIS database) would point the user to the agency's Web location where the document can be obtained. In some instances a document, not available on an agency's site, might be available on a depository library site under the Federal Depository Library Program Electronic Collection. NTIS would then point to the depository library site.

NTIS would develop and operate, in conjunction with the originating agencies, a **P**ersistent **U**niform **R**esource **L**ocator (PURL) system for all of the agency documents included in the NTIS database. This would provide a means of maintaining the pubic accessibility of documents on agency Web sites as the agencies move the documents from site to site and from location to location. The NTIS database would provide the PURL address of the document so that users of the database would always be able to access the complete text of the document available for free on the Web. NTIS would operate a PURL server that keeps track of actual document locations on the Web updated with new location information provided by the agencies or by NTIS' monitoring of existing links to documents in the database.

BACKUP DISTRIBUTION

The user would normally only come to NTIS and pay for a document when it is <u>not</u> available for free on a Web site or when the user desires paper or microfiche. Some users would no doubt find paper or microfiche preferable to Web access and would choose to pay NTIS for the copy, paying the full incremental cost of distribution even though free Web access is available.

In addition to pointing to documents on agency Web sites, an NTIS Web site would provide free access to the full text of selected NTIS documents in reasonable demand (recent important documents), which are not available on agency Web sites. To do this economically, NTIS will have to change the way in which it scans reports for the Web. NTIS currently scans documents in image-only format, which does not provide for searchable full text, limits the utility of the product offered on the Web and increases the costs of storage and electronic distribution. By moving to fully electronic documents with encoded text, NTIS can lower storage and bandwidth costs and improve product utility. This will however increase NTIS' scanning costs.

There will continue to be a substantial number of image-only scanned documents in the NTIS system for some time (representing at least the three-year backfile that has already been scanned). Over time we would expect more and more of the publications available from NTIS to be available in full electronic format, either forwarded to NTIS from other agencies or scanned in full electronic form (OCR) by NTIS itself.

All of these documents in Web-ready form, whether in image-only form or in full electronic form, would be made available to the public without charge from an NTIS Web site if they are not available on the originating agency's Web site or some other publicly accessible Web site, e.g. depository library site.

As a result of this approach—substantial free access to documents on agency and NTIS Web sites— NTIS document sales income will continue to decline dramatically as more and more content is made available on the Web without charge. This expected decline in sales income would have to be considered in the new business model. Specifically, the notion of free public access to NTIS reports on an NTIS Web site requires the appropriation of funds for the so called public good operations of NTIS (see following section on "A New Business Model for NTIS").

PERMANENT ACCESSIBILITY

Permanent Accessibility is a confusing term in the context of Government information. Permanent access to Federal Records is provided for under the Federal Records Act but agency publications and other important documents are not permanent Federal records (and hence not permanently accessible) unless individual agencies take action to make them so. Many agencies do not schedule all of their publications and important documents as permanent records.

Depository libraries provide a form of permanent access but NTIS reports are not generally distributed to depository libraries and to the extent that depository libraries acquire them outside of the Federal Depository Library Program, they are not required to maintain them permanently. Whatever the problems with permanent accessibility may have been in pre-Internet days—and there were many— they have been compounded with the extensive Government use of the Internet to disseminate information.

Government information to which the public should have access, particularly the results of research work that are likely to have long term value beyond the purpose of the original research, should be permanently accessible to the public. Public access should not end when the agency sponsoring the research decides—possibly for budgetary reasons—that the report will no longer be made available on the agency's Web site. For example, the research reports on energy conservation and alternative energy sources from the early '70's are suddenly very relevant again today. Are they still up on DOE and Transportation Web servers? NTIS should be the fallback source to make this information available when it is no longer available from the generating agency. In the Internet age, where agencies mount some of their information on their own servers and make it available to the public free of charge, NTIS processing should provide pointers to the information on the agency's Web site. When the information is removed from the original agency's Web site NTIS should provide access to the full text of the information on its own Web site or by some other means. In the case of older less frequently accessed information, when it is no longer economically feasible to maintain it on a free Web site, the public requester may have to purchase a print or microfiche copy of the report made by NTIS from an archive copy or from a backup –non-publicly accessible—paid Web site.

NTIS MISSION

The NTIS mission, which began (in the days when it was known as the Publications Board) with a focus on the cataloging, announcement and sale of copies of captured World War II technical documents, has changed and expanded over the years. There was some sense among the Panel members that in recent years the mission and scope had expanded in part to increase revenues to offset declining sales income and decreasing appropriations. The scope of NTIS information has expanded from scientific and technical reports to almost all manner of reports and publications of interest to business, industry and technology.

The NTIS mission in the Internet age should have four primary components:

- The collection and processing of Government scientific, technical, and engineering information so that it can be made accessible to the public including facilitating access to the information on Government Web sites,

- The sale of this information to the public in print, microfiche and electronic form,

- Related services to other Government agencies on a cost reimbursable basis,

- Value-added information services provided by NTIS itself or by NTIS in conjunction with private sector information vendors.

The first three points are consistent with the Operations Section above and relatively straightforward.

The last point, although also consistent with the Operation Section, is potentially the most controversial because it is here that the potential lies for conflict and competition with the private sector. Value-added services would seem to be appropriate when the service is directly related to the dissemination of information, or a natural outgrowth of, activities that NTIS would normally perform in furtherance of its own mission, such as disseminating an agency's database or delivering specific information products to an agency's customers. However, the focus of this Panel has not been on the NTIS—private sector interface. This is the charge of Panel Four and has not been pursued here beyond these few words and the Panel cautioning that this mission point is potentially troublesome even though joint ventures between NTIS and private vendors are explicitly authorized by law (15 USC 3704b(a)(1)(A).

A "NEW" BUSINESS MODEL FOR NTIS

The "new" business model for NTIS recommended by the Panel is a return to the earlier model with a mix of appropriated funds for input processing, sales income from report and publication and subscription sales and reimbursable funds for services provided to other agencies.

Some of the functions performed by NTIS benefit the people of the United States and Government agencies as a whole. These are the functions that make the results of Government funded research and other NTIS publications accessible to the public. They include the functions of processing information into the NTIS collection and maintaining a searchable archive of Government information for public access. These functions, which benefit the public at large and permit public access to Government information, are properly supported with public funds, i.e. appropriations.

When the DOD processes a research report of Defense funded research into its system and mounts it on its Web server for Defense community and public access all of the costs are taxpayer funded. The Department of Transportation recently received a $250,000 appropriation expressly for the purpose of

mounting Transportation Department reports on a Web server for public access.[27] Even the Department of Commerce, when it mounted its two policy reports mentioned in its "Fact Sheet" referred to in the earlier section of this paper, used taxpayer funds to pay for the preparation, processing, mounting and public availability of the reports. Why should providing public access to reports at DOD, Transportation and Commerce be a taxpayer-funded public good while providing the same access to the same reports via NTIS require user charges? At present, unlike GPO, LC, DOD, Transportation or Commerce, NTIS is required to fund these same "public good" operations from sales receipts and, surprise, prices are high and there is not enough money to fund the entire operation when sales turn down. The consequence of this approach to funding is the inevitable development of shortsighted recommendations to close down the money losing operation when the real problem is with the business model.

The Government has the responsibility to insure that the public has adequate access to the Government reports and publications collected by NTIS from originating agencies. This responsibility cannot be met by shifting it to mission agencies that do not have public information distribution or economic growth missions. Nor can it be met—and the funding saved—by transferring the responsibility to other central information repositories, which would require essentially the same level of funding to perform the same tasks. The Government's continuing responsibility to provide public access to Government information carries with it a responsibility to properly fund the dissemination operation.

That is not to say that specific users should not pay the incremental cost of specific access that is not normally provided and that incurs extraordinary costs. They should. But in today's Internet world, normally free access is likely to mean Web access, which can be provided by the Government at negligible incremental cost for each additional user.

The specific operations, which benefit the general public and should be funded with appropriated funds, are those of:

- Collection or acquisition of reports,

- The indexing, abstracting and cataloging of these reports,

- The further processing of reports into the NTIS collection by scanning, microfiching and archiving,

- The creation and maintenance of the NTIS database which provides searching and locating information for this report collection including the maintenance of a PURL system to maintain accessibility to reports on agency Web sites,

- The mounting and maintaining of the searchable NTIS database on a Web site for free public access,

- The mounting of the full text of the reports—to the extent they are not available on agency servers—on NTIS servers for free public access, and

- The maintenance of archive files to insure permanent, but not necessarily free, public access to material not otherwise available.

These functions would cost an estimated $5 million per year in ongoing operating costs and would permit NTIS to operate effectively independently of the vagaries of future report input or demand. There will also be some one-time startup costs to establish the new system. These costs are on the order of $1.7 million. NTIS estimates for performing these tasks are shown in Appendix B. Note that

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[27] "DOT Gives Users Free Ride to Online Research", *Government Computer News*, April 3, 2000, page 13, and at http://www.gcn.com/vol19no7/news/1630-1.html.

periodic updating and replacement of IT hardware, possibly every five years, is not included in the recurring cost estimate in Appendix B.

Note also that if the functions of NTIS were transferred to the Library of Congress as proposed by the Department of Commerce or to the Superintendent of Documents essentially the same "public good" costs would be incurred and the same appropriation for these functions would be required.

The other functions of NTIS—the distribution of print or microfiche copies of reports or the distribution of subscription services—benefit only the specific individuals who make use of these NTIS services and incur specific, measurable, costs for each additional user. These services should be paid for directly by the user who benefits through a user charge that recovers the incremental cost of the product or service distributed. The work performed by NTIS for other agencies would be reimbursed on the basis of costs actually incurred.

Under the proposed system, NTIS document sales income could be expected to fall dramatically as more and more content is made available on the Web. However, since document sales income would only be used to pay the actual costs of document distribution and not the cost of processing documents or maintaining the PURL system, it should be relatively simple to manage the operation without the kinds of deficiency problems faced in the past. Without those financial pressures, the financial instability would disappear, much of the aggressive entrepreneurial zeal that led to aggressive competition with the GPO and possible questionable partnerships would be reduced. The result would be a stable NTIS cooperating with the publication-originating agencies and the other centralized information distribution centers to provide ongoing public access to Government information on the most economical basis.

DEPOSITORY LIBRARIES

The Federal Depository Library Program (FDLP) has long played an important role in providing public access to Government information. The system, based initially on low cost override printing by the Superintendent of Documents, later augmented by microfiche distribution and now moving rapidly to the Internet, provides broad public access at no cost to the public user. Most NTIS reports do not make it into the Depository Library System since they are not printed at the Government Printing Office (no opportunity for SOD to override the printing requisition) and there are no funds provided for depository copies of these materials. This has been a longstanding source of disagreement between SOD, NTIS and the report originating agencies. There is some limited purchasing of NTIS microfiche by a handful of depository libraries and a new pilot program between NTIS and GPO to provide some libraries with access to NTIS material on the Web in image form. However, generally the depository libraries do not have ready access to NTIS reports. The future availability of NTIS reports on the Web should solve this problem since depository libraries provide their users with Web access. Depository library access is one more reason for making sure that as many NTIS reports as possible are available without charge on the Web. Although there would be no explicit statutory authority requiring depository libraries to provide their patrons with Web access to the NTIS content, it seems reasonable to suppose that if it is available most will do so.

In the long run, the importance of depository libraries might be expected to decline. As more and more Government content becomes available on the Web and as the Web becomes more accessible to more people, the need to go to a central depository to access Government documents is likely to decline. This, however, is a long way off and Congress should not take the growth of the Web and the increasing amount of Government content available on the Web as a signal to cut appropriations to the

Depository Library Program. For years to come substantial numbers of important Government documents will not be available on the Web and many citizens will not have ready access to the Web.

REORGANIZATION OF GOVERNMENT INFORMATION ACTIVITIES

The Superintendent of Documents was established within the Government Printing Office at a time when all Government publishing was done in print form and the Congress did nearly all printing for the entire Government. Times have changed. As Executive Branch publishing and information dissemination has increased dramatically the issue of separation of powers has intensified with the Congress doing much printing and distribution to enable Executive Branch agencies to carry out their missions. The advent of information technology and the Internet/Web have further exacerbated this issue and made it virtually impossible and impractical to effectively manage Executive Branch information activities from a Legislative Branch office.

There has always been a tension between NTIS and SOD. In recent years this tension has gotten more intense as NTIS has sought to achieve or retain profitability in difficult financial circumstances. Both agencies have similar problems with congressional appropriations committees that seek to cut appropriations for their "public good" functions, mistakenly believing either that the costs can be recovered entirely from sales or that, with the Internet, there are no costs. Both agencies will have to streamline their operations for the Internet and make the case to Congress that their "public good" functions should be properly funded with appropriated funds.

Other issues between the two agencies include differences in bibliographic control and the fact that most NTIS documents do not make it into the depository libraries. As long as the two agencies exist as separate entities the elusive goal of "one stop shopping" for government information will continue to be that much harder to achieve.

Combining NTIS and SOD into a single organization is an appealing notion. It would provide the means to eliminate the tension and competition between the two organizations, make it easier to standardize cataloging and bibliographic processes, consolidate databases and searching tools, and begin a serious move to simpler, unified public access to Government information. There will also be significant opportunities for cost savings by elimination of duplication of effort. Particularly with both agencies moving rapidly toward Web based distribution of much of their information; the notion of a consolidation is attractive. However, the Panel did not have the time or resources to conduct a thorough study of the detailed pros and cons of a merger or of the many changes in organization, culture, standards and systems that would be required to make a merger successful.

The Panel is also not in agreement on formally proposing a merger of the two organizations. The disadvantages are seen as primarily political. Can such a merger be made to happen when either the Executive or the Legislative Branch would lose a major central information distribution component to the other? Strong arguments can be made for having the combined agency in the Executive Branch because of the increasing interaction with the Executive agencies, the decreasing involvement with print product, and the fact that information dissemination is inherently an executive rather than a legislative function. However, the likelihood of the Congress approving a shift of the Superintendent of Documents to the Executive Branch seems so remote that a number of Panel members do not even want to propose it. Unfortunately this seems to be a case of good government falling to expected turf battles and political expediency. "Our task is to make recommendations on the NTIS business model and not proposals to improve overall Government information operations that have no chance of acceptance".

Although the Panel could not agree on proposing a merger of NTIS and [the Superintendent of Documents (SOD), Government Printing Office (GPO)] it did discuss an even broader reorganization proposal that consolidates more of the existing Government information activities from various agencies. Such a consolidation involving not only NTIS and SOD but also related functions from [the National Archives and Records Administration (NARA), the Library of Congress (LC), the Office of Management and Budget (OMB) and the General Services Administration (GSA)] would be far more difficult politically then just a merger of NTIS and SOD. Several of the Panel members felt it should not be considered, not because it lacks merit but because of the colossal hurdles it would face to gain acceptance and concern that its proposal would detract from the other recommendations of the Panel. Again, the Panel did not have the time or resources to conduct a thorough study of the detailed pros and cons of such a merger of many organizations. However, NCLIS itself in its further review of this matter may want to pursue this further.

RECOMMENDATIONS

1. The proposal of the Department of Commerce to close NTIS and transfer its archive to the Library of Congress should be rejected.

2. NTIS performs a necessary function of providing ongoing public access to government information—even in the Internet age—and should continue to operate as an agency of the Department of Commerce.

3. The NTIS business model should include a mix of appropriated funds, sales income and reimbursements from other agencies for services provided.

4. NTIS should receive appropriated funds to cover its "public good" operations and should not be required to recover these costs from sales income. These "public good" operations include the functions that make NTIS reports accessible to the public.

5. The scope of the NTIS collection should continue to be guided by 15 CFR 1180 to include information that bears on business and industry.

6. NTIS should not charge royalties for products or services provided. Charges should be based solely on the incremental cost of providing the product or service.

7. NTIS should consider changing its method of scanning of report input from image-only scanning which has high storage and bandwidth requirements and limited utility on the Internet to full electronic scanning which permits full text searching across documents and has lower storage and bandwidth requirements.

8. NTIS should obtain full text electronic files of reports from other agencies whenever possible to avoid scanning costs.

9. NTIS should provide its users with access to reports made available by other agencies on the other agency's Web sites by pointing from the NTIS database to the appropriate location on the other agency's site.

10. NTIS should develop a Persistent Uniform Resources Locator (PURL) system and track NTIS reports available on other agency Web sites so that NTIS users can find reports on other agency sites when they are moved from site to site.

11. Reports not available for free on agency sites should be made available without charge on an NTIS Web site whenever it is economically feasible to do so. Older reports not in electronic form would not be made available in this manner and reports that require special high cost handling could also be excluded.

12. Permanent access to NTIS reports should be ensured by NTIS. The technology used to maintain accessibility of older less frequently used reports should be selected so as to minimize storage and handling costs. NTIS should be able to charge for access to these older reports based on the incremental costs of providing copies or access.

13. NTIS should continue to sell report copies in paper, microfiche and electronic media formats as long as the demand for the format justifies continuing its use. Charges should be based on the incremental cost of providing the copies.

14. The Department of Commerce should lift the hiring freeze currently on NTIS to permit the hiring of the information technology experts needed to implement these recommendations and provide NTIS the flexibility to reduce staff as necessary as, over time, the implementation of these recommendations results in lower staff requirements.

15. Consideration should be given by NCLIS and the Congress to the possibility of combining the Superintendent of Documents with NTIS—and possibly with other information activities of the Federal Government—to create a more effective central information service that reduces duplication of effort and simplifies public access to Government information. In addition, NTIS should be encouraged to explore new ways of joining with SOD in cooperative programs that will render public access to Government information less duplicative and more seamless.

PANEL 1, APPENDIX A: MEMBERS OF PANEL 1

Peter F. Urbach, Panel 1 Chairman, Retired Publishing Industry Executive, Former Deputy Director, NTIS

Kenneth Allen, Exec. VP & CEO National Newspaper Association, Chair, NTIS Advisory Panel, Former President, Information Industry Association, Formerly with OMB

Stephen Arnold, President, Arnold Information Technology, Former Member, NTIS Advisory Panel

Ernest G. Baldwin, Director, Library Programs Service, [Superintendent of Documents (SOD), Government Printing Office (GPO)]

Mel Day, Retired, Former Director NTIS, Former Deputy Director [National Library of Medicine (NLM)]

Mike Majcher, Retired, Former Manager, Technical Information Center, Xerox Corporation

Steve Needle, Assistant to the Director, NTIS

Kent Smith, Deputy Director, [National Library of Medicine (NLM)]

Tim Sprehe, Sprehe Information Management Associates

Kenneth Wiggin, State Librarian, Connecticut State Library

Jay Young, Retired, Former Director, Documents Sales Service and Former Director, Library Programs Service [Superintendent of Documents (SOD), Government Printing Office (GPO)]

PANEL 1, APPENDIX B: NTIS ESTIMATES FOR APPROPRIATED FUNDS FOR "PUBLIC GOOD" FUNCTIONS[28]

Organization and Preservation

($ in thousands)
FY 2002

	Estimated Costs
Acquisitions	$540
Input Processing	2,790
Scanning & Storage	970
Physical Archive	200
Total Organization and Preservation	$4,500

Mounting Full Text Reports on NTIS Web Site for Free Public Access

($ in thousands)

	Year 1 Costs	Recurring Costs	
Nearline Storage	$80	$50	
Servers	500		
Telecomm. Hardware	50		
Telecomm. Access	50	60	*
Programming	240		
Hardware & Software Maintenance	100	120	*
Support Labor	200	200	
Software	500		
Total	$1,720	$430	

Assumptions:

1. Nearline storage includes average growth of 1 Terabyte per year

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[28] These amounts have not been reviewed or approved by the U.S. National Commission on Libraries and Information Science. The estimates were provided to the panel by NTIS.

This includes storage of: (1) all currently scanned documents, (2) all new documents scanned and (3) back file documents scanned as ordered.

2. Total equipment replacement every 4 or 5 years not included in recurring costs.

3. Equipment and Telecommunications. Startup costs are additions to current infrastructure

4. Programming calculated @ 4 FTE for 6 months (average $120k per year)

5. Maintenance calculated @ 2 FTE for 1 year (average $96k per year)

* Increases 20% each year with increasing file size and increasing usage

APPENDIX 24. PANEL TWO: FINAL REPORT ON FEDERAL AGENCY NEEDS FOR CENTRAL INFORMATION SERVICES AND INFORMATION MANAGEMENT

> 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 TWO: INTERNAL FEDERAL AGENCY INFORMATION NEEDS

CONTENTS[29]

EXECUTIVE SUMMARY

Panel 2 (Internal Government Needs) was asked to examine individual government agency needs for NTIS, GPO, NARA, national library, & other central service bureau types of information services. This included the analysis of key issues and concerns to determine both what is "wrong," deficient, not working as expected, or is out-of-date and also what is being done right.

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[29] Available at http://www.nclis.gov/govt/assess/assess.appen24.pdf.

The electronic milieu that the Internet offers cannot be viewed as merely an extension of the paper-oriented world. Interconnectivity among various communities has led to awareness that many previous concerns perceived to be local are really overarching concerns. Copyright, access control, and privacy concerns are policy considerations common to many communities. The functions of organizing, announcing, disseminating, and archiving information are basic information management functions and are not unique to any one community.

In the United States all government organizations—be they federal, state, or local—create and use information to fulfill their roles in serving citizens. A majority of government information is generated to accomplish the work of government agencies. Some is originally intended for public consumption, some is anticipated to be available for use by other communities and some is developed for strictly communication internal to the process. The purpose of much of the Federal Government information is primarily to accomplish the mission of the organization. It is also a major product—both intermediate and final—of that function. Concomitant with the issue of access to information are the issues of optimizing its usefulness, ensuring its integrity, and guaranteeing its retention and archiving.

There continues to be a need for NTIS, GPO, NARA, national library, & other central service bureau types of information services. The need, however, goes far beyond these organizations. There is a need to extend to all government information the information content management disciplines under which these organizations operate.

For the executive branch of the Federal government, OMB Circular No. A-130 (61 FR 6428, February 20, 1996) provides uniform government-wide information resources management policies. The circular does not adequately address information sharing among federal organizations. Provision should be made under the appropriate sections of the circular to promulgate the sharing of information among government organizations. A comprehensive look is needed at how to maximize access to government information—both paper and electronic, publication and record of government activity—and a plan for achieving meaningful access needs development. If the assessment starts by addressing the issue of information sharing among federal organizations it follows that it will also address the issue of greater public access.

Access to government information is only one aspect of the challenge of exploiting the information content resource. Two critically important digital challenges must also be addressed: continuous, long-term access to this digital government information accessible agency web sites, and its preservation.

<u>**Recommendations**</u>

1. Institutionalize interagency cooperative efforts for information sharing.

2. Clarify "life-cycle planning" in OMB Circular A- 130.

3. In providing the public the opportunity to submit information by electronic means, as required by the Government Paperwork Elimination Act (GPEA), agencies should be expected to render the required data elements in XML format on the Internet in order to facilitate interoperability and ease of use.

4. An interagency committee should be established to develop an information taxonomy to be established federal government-wide.

5. Agencies should be required, when seeking NARA's approval to dispose of records, to specify the metadata by which each of their records series will be classified.

6. A comprehensive analysis should be conducted regarding what currently non-digital government information should be converted to digital and the cost to do so.

7. A comprehensive analysis should be conducted regarding what need to be done to assure permanent public access to digital publications produced by Federal agencies.

8. An interagency committee should be established to identify and recommend how federal identifiers can be used to assist agencies and the public in obtaining information residing in different agencies.

9. A comprehensive analysis should be conducted and recommendations made on the most efficient ways to translate and coordinate the many state and local government—assigned unique identification numbers used to manage permitting, licensing, and compliance records with the federal unique identifiers.

10. An information technology research program should be established to address the Federal government's most critical requirements for long-term information content needs. These include: security (including information integrity and authenticity) and privacy; data integration; and scalable information infrastructure to improve the capability and reliability of the government's information infrastructure.

11. OSTP step forward to assume the role it has in statute to provide oversight in the effective management of STI—perhaps even form a COSATI like group which has membership from both the public and private sectors.

THE CHARGE

Panel 2 (Internal Government Needs) was asked to examine individual government agency needs for NTIS, GPO, NARA, national library, & other central service bureau types of information services. This included the analysis of key issues and concerns to determine both what is "wrong," deficient, not working as expected, or is out-of-date and also what is being done right.

INTRODUCTION

As far as we know the Sumerians invented writing 5000 years ago. Sumerian temple bureaucrats recorded economic transactions into clay tablets. Thus began the first "information explosion." It's not known if writing was invented earlier by some other community because there is no record of it—a lesson learned regarding the importance of preservation. It is clear that the business of the Sumerian society was of such great importance that it required its recording on a transportable media. While some technological changes occurred over the next 4500 years, such as the invention of paper by the Chinese, the need to hand inscribe government, business, scientific and religious information did not change. Nor did the need to transport this information to other locales. Gutenberg's press changed all that. It not only made production easier leading to a second "information explosion" but, more importantly, it led to significant social change. Recorded information became part of the general public leading to monumental changes in governmental and religious institutions.

Today, 550 years after the introduction of Gutenberg's press, we are beginning a third "information explosion." This upheaval, however, includes a fundamental change in recorded communication. The electronic milieu that the Internet offers cannot be viewed as merely an extension of the paper-oriented world. The so-called "wired world" can eliminate narrow "stovepiped communities" whether these communities are defined by policy considerations, organizational alignment, or business functions. Interconnectivity among various communities has led to awareness that many previous concerns perceived to be local are really overarching concerns. Copyright, access control, and privacy concerns

are policy considerations common to many communities. The functions of organizing, announcing, disseminating, and archiving information are basic information management functions and are not unique to any one community. The unique challenge, however, is the need to address the challenge of information content management of both digital and non-digital information. While many believe that "everything is on the Web" the fact is that most information is not on the web. What is on the web typically references information yet to be digitized, or information that has been digitized in the past few years. In most cases large documents do not exist "on the Web" nor do a significant number of digitized documents that were originally placed there but then, because of some local reason, were removed and thus became unavailable.

In the United States all government organizations—be they federal, state, or local—create and use information to fulfill their roles in serving citizens. In the European Green Paper on Public Sector Information in the Information Society the issue is stated the "Public sector information plays a fundamental role in the proper functioning of the internal market and the free circulation of goods, services and people. Without user-friendly and readily available administrative, legislative, financial or other public information, economic actors cannot make fully informed decisions."[30]

The Group of Eight Okinawa Charter on Global Information Society and Global Service Trust Fund Project states "The essence of the IT-driven economic and social transformation is its power to help individuals and societies to use knowledge and ideas. Our vision of an information society is one that better enables people to fulfill their potential and realize their aspirations."[31] But much government information, while publicly available, is created and used by government organizations themselves. Just as informed citizens and commercial businesses rely on access to information to increase their knowledge and improve their performance so do government organizations. Democratic governments moderate this need with the requirement to be open to the people and accountable to them, as well as to protect the privacy of individuals, to provide for the economic and defense security of the state, and to assure fairness and equity.

Federal Information Management Policies. 44 USC 3510 generically addresses the topic of "Cooperation of agencies in making information available." It is, however, only one of many laws, policies, and procedures impacting the use and distribution of federal information. For example, 15 USC 3701, the Stevenson-Wydler Technology Innovation Act of 1980, requires the dissemination of "… information on federally owned or originated products. Processes, and services having potential application to State and local governments and to private industry." The statute directs the use of the National Technical Information Service (NTIS) as a central clearinghouse. The American Technology Preeminence Act of 1991, Public Law 102-245, February 14, 1992, 106 Stat. 20, section 304, requires federal agencies to provide their scientific, technical and engineering technical reports to NTIS. Chapters 17 and 19 of Title 44 reference the cooperative nature of the Federal Depository Library Program (FDLP), Cataloging and Indexing, Sales, and reimbursable services programs shepherded by GPO. Each represents a prime example of Federal policies that facilitate the dissemination of Government information through agency cooperation. The FDLP allows for the dissemination of agency information products to libraries around the country through the cooperation of GPO and the publishing agencies. The records are made available for use by others either through agency notification of their publishing activities to GPO which allows for the creation of authoritative catalog records, or through cooperative cataloging agreements by the agencies and GPO, a Catalog of U.S.

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[30] European Commission, *Public Sector Information: A Key Resource For Europe*, *Green Paper On Public Sector Information In The Information Society* (Com(98)585final, Adopted on 20 January 1999); http://europa.eu.int/ispo/docs/policy/docs/com(98)585/gp-intro.html.
[31] Group of Eight, Okinawa Charter on Global Information Society, Asahi Shimbun, July 22, 2000.

Government Publications. Not included, however, are many documents that may not enter normal channels or systems of publication.

For the executive branch of the Federal government, OMB Circular No. A-130 (61 FR 6428, February 20, 1996) provides uniform government-wide information resources management policies as required by the Paperwork Reduction Act of 1980, as amended by the Paperwork Reduction Act of 1995.[32] The circular recognizes as a basic consideration and assumption that "Government information is a valuable national resource. It provides the public with knowledge of the government, society, and economy—past, present, and future. It is a means to ensure the accountability of government, to manage the government's operations, to maintain the healthy performance of the economy, and is itself a commodity in the marketplace."[33] Additionally, in many Federal agencies there are specific statutes governing the dissemination of information that take precedence over the generalized language found in the PRA Act or in OMB Circulars. This is certainly the case with respect to the management of scientific and technical information.

DEFINING THE FEDERAL INFORMATION ENVIRONMENT.

What is Public Sector information? The definition of information itself is, at best, ambiguous. The purpose of much of the Federal Government information is primarily to accomplish the mission of the organization. It is also a major product—both intermediate and final—of that function. Moreover, demand for most types of government information is normally limited to narrowly defined communities. Information can be in many forms—such as bibliographic, textual, statistical data, factual and numeric data, and images.

Government information may be categorized in several ways. However categorized it is essential to recognize the reason for its creation and the audience for which it was initially intended. Categories may include:

- Consumer information. Information prepared with the individual citizen or specific group of citizens as the intended audience. Normally requires no further processing to be used by a member of the general public. Included in this type of information are publications addressing health, agricultural, education, and consumer safety issues and services such as government crop and weather bulletins and self-help programs.

- Citizen Information. Information that informs citizens about the operations of their government. Information of this type may have been specially prepared to meet the needs of the specific government organization but is available for all citizens (e.g., the Congressional Record, environmental assessment documents) or it may have been prepared specifically to inform citizens (e.g., press releases).

- Administrative (or Operating) Information. Information of this type is used to meet the needs of the specific government organization including that information required for informed decision making and meeting operational needs such as payroll. Also included are data, documents, indices and/or directories to data or documents that either result from research and data gathering conducted by or for the Federal Government or are collected or created by or for Federal agencies as part of the business and economics knowledge base for use in Federal policy making and

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[32] U.S. Office of Management and Budget, *Management of Federal Information Resources,* OMB Circular A-130, Transmittal Memorandum #3, dated February 8,1996 [The latest revision to OMB Circular A-130, Transmittal Memorandum #4, was issued November 30, 2000, after this report was submitted to the Commission. The revised circular is available at http://www.whitehouse.gov/omb/circulars/a130/a130trans4.html.]

[33] ibid., Paragraph 7.b

regulation and for business planning by commercial firms. With certain exceptions, information of this type is normally not prepared with release to the general public in mind

- Scientific and Technical Information (STI). Federal STI is data, documents, indices or directories to data or documents that either result from research and development conducted by or for the Federal Government or are collected or created by or for Federal agencies as part of the knowledge base for scientific disciplines, technical specialties, and science and technology policy making. Since a large majority of Federal Research and Development is done in the private sector Federal STI may be more readily available to federal contractors than it is to other government organizations.[34]

The Information Management Process. The functions of organizing, announcing, accessing, disseminating, and preserving information are basic information content management functions. Concomitant with the issue of access to information are the issues of optimizing its usefulness, ensuring its integrity, and guaranteeing its retention and archiving. At present there are no automated tools that perform these functions in a uniform, reliable, consistent manner. While the Internet, and its tools like the World Wide Web, search engines and categorization aides like those found in Yahoo, have brought new opportunities—and challenges—the basic information management functions still require human physical and intellectual efforts.

Organizing. Information has only potential power. Quantity is not quality, stuff is not information, and information is not power, it's only potential power. The power of information exists only when it can be put into the mind of a person (or a machine) so that it can be used. Given the rapidly expanding amount of information that is on the Internet, finding information online is as difficult as finding a book in the British Library without a card catalog.

Organizing information so those requiring it can find it and utilize it has been a work in progress for centuries. With the beginning of the University movement in the 13th century librarians began to organize information in ways meaningful to a diverse group of individuals. But most of their work was directed to their local community and also suffered in the conflicts between religion, monarchies, and science. In the 18th century the value of knowledge diffusion again became important to those in power. Since then effective standards for bibliographic information have progressively been adopted and improved. Cataloging standards, abstracting and indexing elements, terminology and thesauri, records management, and archiving have been adopted.
Work to develop similar methods and techniques for digital information are in their seminal stages.

Communities that have "grown up" with digital data rather than textual information are more advanced. For example, the international community versed in Geographic Information Systems has developed only in the past few decades. This community gained an early and abiding interest in metadata, so that the sharing of metadata among geospatial projects and software vendors is now well standardized.

The digital data communities, while more advanced in managing digital content than the digital text and multi-media communities, still share a major challenge—information overload. Information overload is counterproductive and may lead to less effectiveness and efficiency.

Announcing. Regardless of how well organized content is if those who may need it don't know of its existence it isn't information, it's just a potential resource. The need to provide tools for finding organized relevant information from multiple sources led to a significant sector of the information

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[34] Molholm, Kurt N., "The Issue of Access to Federal Information," Proceedings of the Federal Pre-White House Conference on Library and Information Services, November 26-7, 1990," Federal Library and Information Center Committee, 1991.

industry called secondary publishing. Organizations, both public and private, in this sector create reference tools such as bibliographic publications with citations from journals, books, monographs, conference proceedings, databases or other sources containing full text or numeric data. These organizations normally support specific communities of interest by supplying a comprehensive collection of references of interest to the target community.

Accessing. While it is important to know about the existence of needed content it is normally more important to obtain the content itself. This, perhaps, is one of the biggest problems facing users and information managers alike. For example, the Defense Technical Information Center (DTIC) has online citations to the nearly two million technical reports in its collection. However, only full text documents brought into the collection since 1994 and those converted based on demand are in digital form. The cost to digitize the full collection is prohibitive. Thus, DTIC still annually supplies tens of thousands of printed documents to its customers. It is interesting to note that, even where documents are in electronic form, a significant demand still exists for them to be supplied as printed documents. The average size of a document in DTIC's collection is 110 pages. It takes no research to know that most people prefer NOT to read a large document online, nor do many people have the capability to download and print large documents locally. Other organizations, such as NTIS, experience is similar.

Another consideration in discussing access is how digital documents are stored and delivered. The way that users download and import documents from the web varies depending on the browser being used and the applications on the user(s) system. For example, Portable Document Format (PDF), is a file type created to allow formatted documents to be widely distributed regardless of whether specific fonts or postscript files are available to the viewer's system. PDF files can embed specialized fonts and images within the document as they are distributed. This ensures the document remains exactly as formatted by its authors.

The PDF format was originally created by Adobe Systems. This company freely distributes its Adobe Acrobat Reader software to anyone who wishes to view PDF files. These files are essentially images of the documents and thus, full text searching cannot be used. There are, of course, other approaches that will allow full-text searching of a document. These, however, may be considerably more expensive to produce, can more easily be altered, and do not ensure the document remains exactly as formatted (which may or may not be important).

Disseminating. The proposed revision to OMB Circular A- 130, (Transmittal Memorandum No. 4) states that the term "dissemination" means the government initiated distribution of information to the public. Not considered dissemination within the meaning of this Circular is distribution limited to government employees or agency contractors or grantees, intra- or inter-agency use or sharing of government information, and responses to requests for agency records under the Freedom of Information Act (5 U.S.C. 552) or Privacy Act. As currently defined in OMB Circular A- 130 access is an "on-demand" or "pull" function while disseminating is a "push" function; normally a subscription type of service based on individual customer needs. Both, however, involve sending information to others. The circular points out that access is a passive function for Federal agencies and differs from dissemination. Access is the government's responsibility, " ... when the public comes to the government and asks for information the government has and the public is entitled to..." Dissemination, however, is when, "... the government provides the public with information without the public having to come and ask for it." These definitions can apply just as well to government organizations. Using DTIC again as an example, DTIC provides its customers bibliographies based on individual user profiles. These can be in either paper or e-mail form. A similar service provides full text documents. What DTIC does is not unique. Most information management organizations provide similar services. The profile-driven dissemination approach addresses the challenge of "information

overload" to specific users or organizing by allowing users to tailor information services to meet their specific needs.

Distinguishing dissemination from access, however, begins to (if not entirely) break down with the Internet/Web. The ability of individuals to address some of their "information overload" through Portal technology is just beginning. Based on personal preferences portals allow individuals to tailor their own web page to establish such things as calendars, automatic access to favorite sites, and notification of updates to information sources, which meet their specific needs. Portals can also be established for the organization or enterprise as a whole. These allow organizations to combine internal business process information and appropriate content found on the Internet as a whole. They can also be used to help those both internal and external users find information located throughout the enterprise. The recently announced FirstGov portal is an example. This web site provides a single online information portal that connects people with U.S. Government information and. FirstGov allows users to search all 27 million Federal agency web pages at one time. The Web Site provides access to the home pages of major agencies and entities in all three branches of government, a section that provides topics of current interest to web users (e.g., a direct link to the a direct link to the Weather Service during hurricane season, to NASA during a shuttle launch, or to IRS during tax season), and key sites that access State and local government web pages.

Preserving. We advance knowledge by building upon what has gone before. Sir Isaac Newton attributed his discoveries to the work done by his predecessors, stating "If I have seen farther than others, it is because I was standing on the shoulders of giants." Indeed, on a grander scale, we call the period before recorded (and somewhat preserved) information artifacts Prehistoric. Information is critical to scientists and engineers, to historians, to decision makers, to students, in fact nearly to everyone. Accordingly, it must be preserved. The advent of the digital world, however, is bringing new challenges. In the past much of the challenge of preservation was left to specialists such as records managers and archivists to address long-term needs and clerical personnel to handle the short-term needs of the organization and implement the records management policies of the specialists. In the digital world quite often an original document may never get into a preservation system. It may be created to serve the purpose of the author(s), stored and transmitted by a system managed by an information technologist and completely bypass the critical content preservation function. Information that may be of critical importance to others may be irretrievably lost as well as the record of its existence. It is important to recognize, however, that preservation does not ensure access while access, on the other hand, does encompass preservation. So when we talk about archival policies and practices we should, in this electronic era, couch things in terms of permanent access to information

Government Information Flow. A majority of government information is generated to accomplish the work of government agencies. Some is originally intended for public consumption, some is anticipated to be available for use by other communities and some is developed for strictly communication internal to the process. This does not necessarily mean that it may not be made available to others. It means that sharing with others is generally not considered. Information such as scientific and technical information and statistical data are recognized as having value to others and are part of an organized information content process designed to inform others and then supply the content if requested. Participants in this process include central facilities such as the Department of Energy's Office of Scientific and Technical Information (OSTI) and the National Technical Information Service (NTIS). In this "system," for example, OSTI serves the mission of the Department of Energy with NTIS serving the general public.

In order for the information to flow it must be indexed to properly retrieve it. NTIS, DTIC and the DOE (formerly the Atomic Energy Commission) have been in the STI business for over 50 years. NTIS, for example, now has over 3.0M titles in their inventory of government technical reports. Over

2.0M of these reports are cataloged and indexed as part of the NTIS Database. NTIS has, over the years, been the primary access point and a clearinghouse for the government's STI. As the Internet has evolved, agencies have put their documents up on the web and in some cases bypassed NTIS. However, much of this information remains uncataloged and unindexed with the exception of such agencies as DTIC, DOE-OSTI, NASA and some others. NTIS maintains the master database for all these agencies and provides a one-stop-shop. They also crawl agency web sites, on a regular basis, and download reports that are not in their inventory. NTIS indexes and catalogs each report and adds it to their database. Annually, NTIS acquires between 40-50,000 new reports. Since 1997, NTIS has been scanning all reports received in paper format as well as receiving reports in digital form that have either been "born digital" or scanned by organizations such as DTIC and OSTI. NTIS currently has over 435,000 reports available in digital form. *NTIS clearly continues to demonstrate that the concept of a clearinghouse for federal scientific and technical information remains valid.*
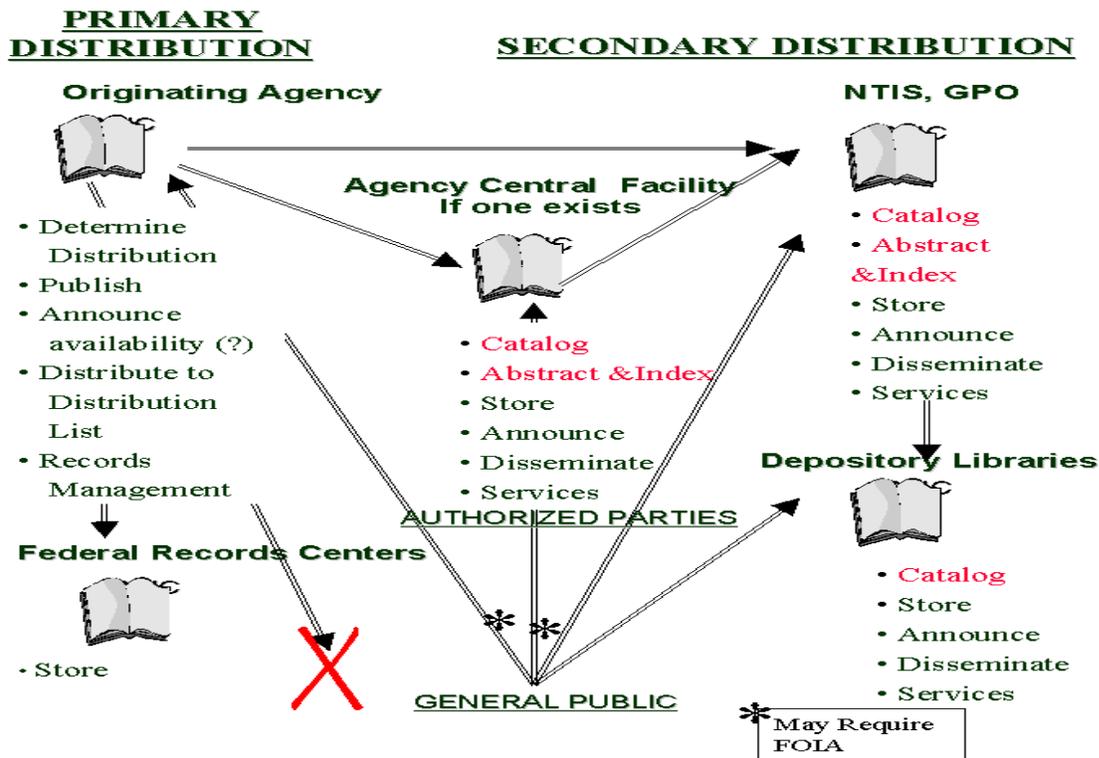
There are similar coordinating efforts, either through committees or through centralized, coordinated organizations that serve other communities of interest such as the statistical community. OMB Circular A-16[35] describes the responsibilities of Federal agencies with respect to coordination of those Federal surveying, mapping, and related spatial data activities. (Spatial data are geographically referenced features that are described by geographic positions and attributes in an analog and/or computer-readable (digital) form.

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[35] U.S. Office of Management and Budget, *Coordination of Surveying, Mapping, and Related Spacial Data Activities*, OMB Circular A-16, (Revised), October 19, 1990 (Replaced/Rescinded OMB Circular A-16 dated May 6, 1967).

A major objective of this Circular is the development of a national digital spatial information resource, with the involvement of Federal, State, and local governments, and the private sector. This national information resource, linked by criteria and standards, enables sharing and efficient transfer of spatial data between producers and users. In the absence of coordinated community interest other government information and data may either be handled in the records management program of the individual agencies—including the disposition to a Federal Records Center, to GPO's Federal Depository Library Program (or both)—or, as be the case for many electronic records, lost at some point in time. The following diagram shows that information, originated from many sources, may follow several paths.

ANALYSIS

1. **What are the legal and policy constraints, barriers, and obstacles to the active intergovernmental dissemination and sharing of government information content? For example, what federal policies exist that require sharing of government information, both publicly available and information not publicly available, with other government organizations?**

The main body of the OMB Circular A-130 is principally concerned with information management and "(t)he free flow of information between the government and the public…"[36] and not information technology (IT). It correctly recognizes that exploitation of the value of information is not an information technology issue—it's an information management issue. The circular points out that IT is not an end in itself.[37] It is one set of resources that can improve the effectiveness and efficiency of Federal program delivery. None of the Circular's Basic Considerations and Assumptions, however, discuss interagency sharing of information. In fact, as earlier stated, Intra-agency or interagency use of sharing of government information is specifically excluded from the definition of the term dissemination in the circular. Sharing of information systems, not information content, is a primary policy requirement. Information content sharing is not completely forgotten. Consideration and Assumption 7k does state "The open and efficient exchange of scientific and technical government information, subject to applicable national security controls and the proprietary rights of others, fosters excellence in scientific research and effective use of Federal research and development funds." [38] Also one of A-130's policies (8a(d)) is for agencies to "Seek to satisfy *new* information needs through interagency or intergovernmental sharing of information, or through commercial sources, where appropriate, before creating or collecting new information (*emphasis added*)."[39] By and large, however, there are few federal policies that establish direction, procedures, or enforcement of information sharing among agencies. There are provisions for records management and retention but not for access and dissemination to operating agencies.

OMB Circular A-130[40] calls for the integrated life-cycle planning for information and outlines the objectives for that planning process. The requirement, however, fails to do much to stress the importance of information management. Instead the circular continues to heighten the problem of dealing with an intangible resource such as "information" when management focus for at least four decades has thought of "information resources" as hardware and software. The Circular's policy framework emphasizes both content and technology under the information management heading;

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[36] OMB Circular A-130., Paragraph 7.c
[37] OMB Circular A-130., Paragraph 7.l
[38] OMB Circular A-130., Paragraph 7.k
[39] OMB Circular A-130., Paragraph 8.a.1(d)
[40] OMB Circular A-130., Paragraph 8.a.1

however, in the planning context, the bias is toward information systems, rather than use of the information prevails.

Safeguarding Sensitive, Proprietary and Nonpublic Information. Information sharing among federal agencies does not mean that all federal information is available to the general public. There are many statutes that restrict Federal employees from sharing information not released to the public. Among these are:

The Procurement Integrity Act (41 U.S.C. 423) restricts the release of source selection and contractor bid and proposal information.

The Trade Secrets Act (18 U.S.C. 1905) makes it a crime to improperly release contractor trade secrets and other confidential information outside the Government.

The Privacy Act (5 U.S.C. 552a) restricts release of personal information about individuals, such as for private marketing purposes.

Improper release of data could also result in claims from the owner for breach of contract or loss of business.

Additionally the Freedom of Information Act (FOIA) (5 U.S.C. 552) As Amended By Public Law No. 104-231, 110 Stat. 3048, includes several exemptions relating to release of federal information to the public (See Appendix B).

Most of the interagency efforts to share information among federal agencies have been the result of efforts within communities of interest and not because they have been directed as part of a federal information policy. Obviously, government interfaces with the general public, e.g. NTIS, GPO's Superintendent of Documents, are also available to federal agencies. These services, however, may not fulfill the information needs of specific communities. In many cases federal agencies have no central information content management organization and thus no mechanism to promote sharing.

In 1962 Dr. Jerome Wiesner, Science Advisor to the President appointed a special task force[41] to examine Federal STI programs. The task force made two major organizational recommendations to improve the flow of STI within the Federal Government. One was a central authority to define the objectives of government information programs; to plan, develop, and guide organization of government information activities; and to develop criteria (including financial) for effective operation of government-wide information system. The second recommendation was that each research and development agency of the Federal Government should set up an office exercising agency-wide direction and control of information activities."

The then Office of Science and Technology (now the Office of Science and Technology Policy (OSTP)), an agency by law designated to coordinate and provide oversight in the effective management and dissemination of STI, assigned a fulltime staff member to information systems and an interagency committee, the Committee on Scientific and Technical Information (COSATI) was established in 1963. The recommendation that each R&D agency establish an organization responsible for management of the Department's STI Program was largely implemented.

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[41] J. H. Crawford, G. Abdian, W. Fazar, S. Passman, R.B. Stegmaier, Jr. and J. Stern, *Scientific and Technical Communication in the Government.* Task Force Report to the President's Special Assistant for Science and Technology. AD-299-545, April 1962.

The COSATI was created to develop among the Executive Agencies a coordinated but decentralized STI system for scientists, engineers and other technical professions. Additionally, it sought to foster an improved national system for handling STI and it was made clear that if the blueprint didn't include the private sector there was little chance of an orderly growth of a national information system. COSATI became the national focal point for coordinating the development of a national network of independently operating but, at the same time, cooperating STI systems. The key factor responsible for the success of COSATI was its organizational placement in the Executive Office of the President—essentially above the level of the Federal agencies themselves.[42] The central authority was not intended to be a central operating activity. The intent was to establish a coordinated, consistent framework for obtaining STI. This included the establishment of a standard information categorization system known as the COSATI standard—the code for the cataloging of technical information. This "standard" is still used by DTIC, NTIS and some commercial organizations. However, the central authority has never been established.

Indeed a dramatic decline began from the high level interest in management and transfer of scientific and technical information that was the hallmark of the 1960's science policy. The result was, by the mid-1970s, the disestablishment of the COSATI and the virtual elimination of OSTP staff associated with STI systems. Beginning about this time and continuing through the mid-1980s leaders of the STI facilities in major R&D agencies met regularly but informally to discuss and, if possible, take action to address problems associated with the cooperative management and transfer of federal STI. These meetings led to the formal establishment of CENDI in 1985. CENDI was originally the **C**ommerce, **E**nergy, **N**ASA, **D**efense, **I**nformation group, a voluntary group comprised of the heads of Commerce's National Technical Information Service, Energy's Office of Scientific and Technical Information Program, NASA's Scientific and Technical Information (STI) Program, and Defense's Defense Technical Information Center.

The four founding organizations from some of the largest federal agencies involved in research and development were principally involved in managing STI recorded in technical reports. This type of report is not formally published but records results of federal R&D done either in house or through contracts or grants. Such reports may or may not be made publicly available since they may contain information falling within the exemptions of the Freedom of Information Act (FOIA). The Energy, NASA, and Defense organizations traditionally shared their collections with each other and provided publicly available information to NTIS for acquisition by the general public. In 1986 the National Library of Medicine (NLM) joined CENDI. NLM, while not handling technical reports, had many of the same information management challenges. Thus, with these five organizations meeting regularly and sponsoring working groups and standing committees, the federal agencies responsible for over 90% of federal R&D had established a voluntary interagency information and information management sharing effort to fill the void left with the disestablishment of COSATI. CENDI now has ten members from nine different departments or agencies. The CENDI Secretariat is paid through member contributions.

Conversely, the Federal Geographic Data Committee (FGDC) is an interagency committee, organized under OMB Circular A-16. Organized in 1990, the FGDC promotes the coordinated use, sharing, and dissemination of geospatial data on a national basis. The FGDC is composed of representatives from seventeen Cabinet level and independent federal agencies. The Steering Committee sets high-level strategic direction for the FGDC as a whole. The Coordination Group advises on the day-to day business of the FGDC. The FGDC Secretariat staff provides staff support for FGDC committees. For example, the Federal Geographic Data Committee coordinates the development of the National Spatial

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[42] Smith, Kent, *Federal Information Policy--Putting It All Together*, Miles Conrad Lecture, National Federation of Abstracting and Information Services, February 24, 1998.

Data Infrastructure (NSDI). The NSDI encompasses policies, standards, and procedures for organizations to cooperatively produce and share geographic data. The federal agencies that make up the FGDC are developing the NSDI in cooperation with organizations from state, local and tribal governments, the academic community, and the private sector.

The CENDI and FGDC efforts are examples of what can be done to share information among agencies. There are three keys to these efforts. One key is agency recognition that their information may have a wider value beyond its original use. A second key is the existence of either a central agency information management organization or an organization that acts as one. A third key is some level of funding.

An example of an attempt to instill some discipline in the federal government so that information, or information sources, can be discovered and accessed is GILS. The Paperwork Reduction Act of 1995 (44 U.S.C. 3511) directed the establishment of the Government Information Locator Service (GILS) to help the public and federal, state, and local government agencies locate and access information throughout the Federal Government. In concept GILS could also assist agencies in complying with aspects of the Federal Records Act (44 U.S.C. 3301) and the Freedom of Information Act as amended in 1996 (5 U.S.C. 552). GILS, however, has been less successful than anticipated. Federal components that had significant information management organizations or interest (e.g. GPO, EPA, NTIS, DoD) successfully implemented GILS. GPO, with its GPO Access and NTIS with its FedWorld, implemented a GILS system that can serve all federal agencies and the public at large. As well intentioned as these efforts are they are at the mercy of the various federal agencies implementing GILS. Many federal agencies, having higher spending priorities than GILS, did not implement GILS and OMB failed to enforce the requirement. OMB Bulletin 95-1, "Establishment of Government Information Locator Service," which guided the initial startup of GILS, expired. In lieu thereof OMB Bulletin No. 98-03, November 18, 1997 requires agencies to describe GILS progress in their annual reporting under the Paperwork Reduction Act of 1995. It is an irony that GILS has been far more successfully implemented by many states and internationally through the Global Information Locator Service—the international byproduct of the U.S. GILS—than in the U.S. Federal Government.

In addition to legal and policy constraints, barriers, and obstacles, there are significant technical, budgetary, and organizational challenges to the active intergovernmental dissemination and sharing of government information content. The President's Information Technology Advisory Committee (PITAC) reported in 1999 [*Information Technology Research: Investing in Our Future*] that such technical challenges developing significant improvements in systems and methods for accessing data—including high performance data storage and tools to locate and present information, and developing reliable, secure networks and software to deliver and protect critical data needed to be addressed. The PITAC charged its Panel on Transforming Government to identify key technical challenges and develop a long-range technology-based strategy to harness the power of advanced information systems to make government's stores of information and vital services easily accessible to and usable by all U.S. citizens.

While the Panel's findings, in its report, *Transforming Access to Government through Information Technology*,[43] address the issues from the perspective of public access, they are translatable into equivalent concerns for active intergovernmental dissemination and sharing of government

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[43] U.S. Executive Office of the President, National Coordination Office for Information Technology Research and Development, *Transforming Access to Government Information Through Information Technology*, report of the President's Information Technology Advisory Committee, Panel on Transforming Government, Washington, DC: National Coordination Office for Information Technology Research and Development, August 31, 2000; available at http://www.itrd.gov/ac/transform13x.pdf.

information content. In terms of finding, sharing, and using government information resident in an agency, other government agencies are often no better situated than the public.

The Panel found that:

> Major technological barriers prevent citizens from easily accessing government information resources... Today government information is often unavailable, inadequate, out of date, and needlessly complicated.

> The Federal CIO Council's...mandates require them to focus primarily on near-term operational issues and acquisitions. Budget planning processes make it difficult to carry out effective cross-agency coordination and execution and the long-term research efforts that many of the goals require. [44]

The Panel notes that, while "the CIO Council has established mechanisms for sharing results and lessons, the process of creating standardized processes and information representations, eventually leading to cross-agency transactions and information federation and integration, is much harder and requires cross-agency budget planning and execution. Creating cross-agency budgets requires substantial work and, therefore, is used only for large initiatives. Depending on cross-agency plans is very risky because of the uncertainty that all participants will receive adequate funding. …"

In addition, the Panel notes that:

> [S]tovepiping of both congressional and executive review processes causes stovepiping of plans and programs. The Government Performance Results Act (GPRA), for example, while valuable in requiring agencies to set goals against which they can be held accountable, tends to hinder agency interdependencies in plans and programs because no agency will create a GPRA objective that depends on budgeting and operational success in another agency.[45]

A Survey of Federal Agencies

A selected number of Federal Agencies were surveyed during the study to ascertain:[46]

- The level of information dissemination in electronic form; use of web sites and the management of information placed on the web;

- the policies that have been issued relative to information dissemination, particularly in electronic form;

- whether these policies resulted from statutory, Executive Office, or Departmental requirements; or Agency or Bureau level program initiatives;

- if a comprehensive listing of publicly available electronic information products existed; and

- whether there were suggestions/recommendations for NCLIS' consideration in preparing the report.

A total of 38 agencies were contacted. Of these, only 11 responded. Each of the selected agencies were asked to respond to six questions, as follows:

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[44] Ibid.

[45] Ibid.

[46] The results of the agency survey are available in Appendix 27 and at http://www.nclis.gov/govt/assess/assess.appen27.pdf.

1. Does your department/agency have published policies on government information dissemination to the public, and/or programs which implement those policies, especially for information products being made available on agency web sites in electronic formats and mediums? Short of a formal policy, is there a letter or other communication from a senior official that mandates the discontinuance of publishing an information product in paper form, in favor of utilizing electronic mediums and formats?

2. Have your individual bureau-level units established their own policies and/or implementing programs? If so what are they?

3. Does your department/agency have guidelines for adding new, changing existing, or deleting "old" information available to the public from its web sites? Does this guidance include instructions on when to take information down, make a backup copy for permanent retention and availability, and archive an official record copy?

4. Is there a reasonably comprehensive and authoritative listing of the department/agency's electronic public information products that is periodically updated?

5. Which of your major information products/resources and/or most important information dissemination policies, are mandated by Congress or federal statute? Which ones were put in place by the President, your department/agency head, or a senior program official?

6. Do you have any recommendations for strengthening existing laws, policies, programs, and practices relevant to the dissemination of, and access to, your agency's publicly available information? If so, what are they?

Analysis of survey responses. Summaries of each of the individual agency responses are included in Appendix 27. Although the survey specifically addressed public access increased agency use of the Internet also helps in the potential for interagency information sharing. For example, OMB circulars are available on OMB's website. At the DoD website, DefenseLink, someone from NASA can read DoD acquisition related memoranda and guidance documents in the DoD Acquisition Deskbook. From the EPA site someone from the Department of Agriculture can find out more about agricultural chemicals and related pollutants/toxics topics.

The 11 respondents confirmed the interests of their departments, agencies and bureaus in:

- keeping the public informed;

- complying with statutory requirements and executive directives; and

- undertaking specific steps to provide information electronically.

Within the last five years, significant strides have been made in the dissemination of government information in electronic format. Agencies are convinced of the advantages in both accessibility and availability and the resultant economic (or cost effectiveness) and programmatic gains. Information provided to the public is more timely when in electronic format, and the posting of rules and regulations requiring public comment provide a quick and easy means of transmitting comments within the review period. Filing of information required for permits, licenses and the like can often be done electronically and, in fact, will be required under current electronic government initiatives. Those wishing to acquire information on a specific subject can search the electronic catalogs of publications posted on the web sites, be told where to obtain the information, and in many instances request the information through e-mail to the site. Despite all this, most departments and agencies recognize that,

for the foreseeable future, much of their information will continue to be printed in order to serve all their users' needs.

All Executive Branch survey respondents reported having web sites at the departmental and lower organizational levels. The Administrative Office of the U.S. Courts' Office of Public Affairs manages the AOUSC web site. The department/agency web sites include policies and procedures, press releases, fact sheets, listings and indexes of publications and in some instances the full text of a publication, statistical and other data. Respondents for the Departments of Labor and Treasury and the Environmental Protection Agency and U.S. Geological Survey specifically mentioned the requirement for appropriate review and clearance of information being placed on the web. Most respondents indicated the existence of policies and procedures for the web, though only the Indian Health Services, the Departments of Defense and Treasury, the Environmental Protection Agency, and the Administrative Office of the U.S. Courts indicated coverage for adding, changing and deleting information.

The Electronic Freedom of Information Act (E-FOIA) appears to have impacted agencies heavily, in that several reported indexes and search capabilities for use by the public in Freedom of Information Reading Rooms. The Indian Health Services and the Department of Veterans Affairs refer to their Electronic Freedom of Information Reading Rooms, though they don't specifically refer to the Electronic Freedom of Information Act.

Only the Department of Defense, the National Institutes of Health and the Smithsonian Institution report a comprehensive listing of electronically published information; in Defense, information is included in the DOD Resource Locator, the Department's implementation of GILS. In other Departments, the divisions, bureaus and smaller organizational units maintain listings of their publications (printed and electronic) on the web. The Environmental Protection Agency remains active in maintaining its Government Information Locator Systems (GILS), and a number of its Program Offices maintain listings of their information products. The Federal Communications Commission's web site had the Agency's documents back to 1994.

Governing laws, regulations, etc. The federal statutes and implementing regulations, as well as departmental, agency and bureau policies guiding respondents' information dissemination practices are also listed in Appendix 26.

As might have been expected, most Departments have issued policies to implement federal statutes, while policy development below the department level varies considerably. The Departments of Defense, Health and Human Services (Indian Health Services), Labor, Treasury and Veterans Affairs all cite the Freedom of Information Act (FOIA), while only the Departments of Defense and Treasury cite the Electronic Freedom of Information Act as guiding specific information dissemination policies. The Paperwork Reduction Act was cited by the Departments of Health and Human Services (Indian Health Services), Labor and Treasury; only the Department of Health and Human Services cited the Paperwork Reduction Reauthorization Act. Though privacy concerns were eliminated from this study due to the complexity of the issue and NCLIS' ability to handle that within the framework of the broader issues, the Departments of Health and Human Services (Indian Health Services), Treasury and Veterans Affairs cited this as a guidance in their information dissemination programs. One Department cited five other laws only:

- Administrative Procedure Act, by the Department of Labor

- American Technology Preeminence Act, by the Department of Interior, Geological Survey

- Federal Records Act, by the Department of Health and Human Services, Indian Health Services

- Government Paperwork Elimination Act of 1998, by the Environmental Protection Agency

- The Rehabilitation Act, Section 508, by the Environmental Protection Agency

In addition, a number of department and agency specific laws were cited as containing information dissemination requirements. The National Geologic Mapping Act governs map distribution within the U.S. Geological Survey; 38 U.S.C. paragraphs 5701, 5705, and 7332 govern the Department of Veterans Affairs handling of confidential medical records. The Environmental Protection Agency, indicating that several others existed, listed several specific laws governing its program areas: the Clean Water Act, the Comprehensive Environmental Response, Compensation & Liability Act, the Emergency Planning and Community Right-to-Know Act and the Safe Drinking Water Act. The Administrative Office of the U.S. Courts within the Judicial Branch follows the Rules Enabling Act in making specific information available and receiving comments on proposed new rules. The Smithsonian Institution is not a government organization and as such is not bound by federal laws and regulations relating to information dissemination. However, its mission to increase and diffuse knowledge is incorporated in its charter in 20 U.S.C. paragraph 57.

Only two Executive Orders (by the Department of Veterans Affairs, number 12600, and the U.S. Geological Survey, number 12906) were cited as governing information dissemination programs. Though archiving of electronic information appears to be a major concern of most of the responding Departments/Agencies, only one—the Department of Health and Human Services, Indian Health Services referred to NARA's Records Management and Disposition Regulations. The Department of Defense, the U.S. Geological Survey and the Department of Labor cited OMB Circular A-130. Two Attorney General issuances were referenced:

- Manual on the Administrative Procedure Act, by the Department of Labor

- FOIA Policy Memorandum, by the Department of Veterans Affairs

All departments and agencies, with the exception of the National Institutes of Health, reported having internal directives at the senior levels and often at sub-organizational levels covering information dissemination. These are listed in Part B in Appendix 26—the Laws, Regulations and Directives Identified in Agency Surveys.

Permanent access to government information. An area of major concern for the general public, researchers and others who make heavy use of government information in their professional or personal lives, is the need for permanent availability and access. Responses to a question about archiving of official record copies vary widely. Defense is the only Department indicating that outdated and superseded information is removed and appropriately archived. The Geologic Division of U.S. Geological Survey 's policies provide that information on the web be archived for long-term preservation. Again within the U.S. Geological Survey, the Earth Science Information Centers require a disposition schedule be created for all publications, The Indian Health Services makes backup copies of all content and documents on the web and archives them monthly, though no official record copies are maintained. All records created or received in electronic media must be printed and incorporated in the official file system. The Financial Management Service (FMS) within Treasury creates a CD of its web site on a monthly basis for archival purposes. The Federal Communications Commission creates a paper original of its documents for transfer to NARA under its records retention program but hopes to transfer records electronically in the future.

Agency suggestions/recommendations. Each of the Agencies surveyed recognized the value of the web in making their information publicly available; they also felt strongly that information paid for by the taxpayers must be accessible within the context of legal restrictions on its release. An aggressive

program management to ensure the public receives effective and complete dissemination of, or access to, agency information may be needed. One even suggested that a requirement should be for a comprehensive listing of all available information in each agency's web site. At the same time, many felt that any new requirements imposed should carefully evaluate the impact of workload and staff capacity to meet the workloads or burdensome and unreasonable expectations or deadlines.

Several agencies suggested that additional guidance on implementation of the E-FOIA from the Department of Justice is needed; from the Office of Management and Budget on the Privacy Act; and from government oversight agencies on web posting and content management.

At least one agency sees the need to review existing requirements with the objective of strengthening the government's ability to address security and privacy concerns associated with the aggregation of unclassified information made possible and increasingly easy by electronic means such as the World Wide Web. Current mandates were initiated for a paper-based world.

Another agency suggested that federal libraries should be mandated to disseminate agency information; that copies o everything printed (or issued electronically) should be forwarded to the library for cataloging for later retrieval. In some instances, issues/restrictions imposed on delivery of information on the web—security considerations, in particular, are overriding issues of access and the free flow of information, e.g., dot.com links are not endorsements of a particular set of information, but selected to meet agency needs. Libraries need to be able to apply their criteria for collection building to commercial and other sources. Technology should enhance libraries in their ability to disseminate information, not be an end to itself or place undue restrictions on what libraries do and do well in delivering content, selectivity and quality.

NARA should establish policies and standards for archiving. It should be forced to receive CD-ROM, electronically transmitted to them, or they should designate the PDF or other file format acceptable to them. Requiring 6,250 bpi tape, no extraneous characters, and 7-digit block factor is not acceptable in today's environment.

An information clearinghouse approach for all government information may be the best approach, if consistent and long-term funding is assured. When a myriad of statutes govern an agency, a major challenge is integrating the data and information from the affected programs.

2.   **What are the impacts of these constraints and barriers on the ability of other government users to obtain the information they need? How are impacts demonstrated? What kinds of information should be available that is not available? What are the consequences of the lack of this information?**

Paper. It's common for many to call this the "Information Age" It's true that the transfer of information is an inseparable part of the business process. But this was true 5000 years ago. What is new is the flexibility we now have in our ability to find, access, retrieve, and use information. A robust information infrastructure improves the productivity and effectiveness of the business process. Organizations have always recognized that information is part of their basic operation. They have not, however, always viewed it as a corporate asset to be made available throughout the organization. With the recognition that the easy-to-use capabilities of Internet Web browsers could be adapted to be used for non-public use (e.g. Intranets), organizations are increasingly making information services available to all employees—not just selected ones. Additionally, electronic collaboration and coordination improve effectiveness as well as efficiency. Current information technologies can also help assure that participants are authorized and authenticated at one or more levels of a process. When we began to use information technology to automate processes three or four decades ago its use was

cost justified by direct cost reductions. It's no longer quite so easy because the user—not the provider, determines the value of information**.**

The networked world has added a new dimension. Users now have much more flexibility in finding useful information, formatting it in a manner they desire and, through serendipity, finding other valuable information. As we have seen with GILS there is both a perceived and a real need for a universal method for consistently finding information.

That said, physical paper, not digital bits, still comprises the bulk of the Federal knowledge base. Funding has not been provided to convert the paper store into digital stores. This conversion will require millions of dollars that may be better spent elsewhere. In fact, adequate technology may not exist to allow the conversion. The point to be remembered is that the majority of government documents are not in digital form. These documents, however, may still contain valuable information content. There also has not been a will among government leaders to insist on standards that allow compatibility among digital information generating systems (e.g. word processors, presentation software), digital formats, storage media, or display technology. A continued use of paper as the primary, if not exclusive means of disseminating information violates not only the intent but also express provisions of the Paperwork Reduction Act, including the following:

44 USC 3506(d)(4), which prohibits agencies from establishing any "... exclusive, restricted, or other distribution arrangement that interferes with the timely and equitable availability of public information..."

44 USC 3506(d)(1)(B), which requires "... in cases in which the agency provides public information maintained in electronic format, [it shall provide] timely and equitable access to the underlying data..." [Note: If a file remains on a hard drive after it has been printed, wouldn't you agree that it has been "maintained in electronic format"?]

44 USC 3506(f), which says, "With respect to records management, each agency shall implement ... procedures ... for archiving information maintained in electronic format..." [Note: Under the Federal Records Act, it is unlawful to destroy any record except under a schedule approved by NARA.]

5 USC 552 (a)(2) (The Electronic Freedom of Information Act) requires that records created after November 1, 1996 be made available to the public by computer telecommunications or other electronic means.

Unique Identifiers. The point-and-click idiom of World Wide Web access has made Internet browsing easy, but one soon learns that, too often, finding a site leads to no result. The Uniform Resource Locator, or URL, may change at the whim of hardware reconfiguration, file system reorganization, or changes in organizational structure, leaving users with a code 404 ... Document Not Found.

This unpredictable mobility of Internet resources is an inconvenience at best. For librarians, it is a serious problem that compromises their service to patrons and imposes an unacceptably large burden on information catalog maintenance.

Additionally, current organization identifier systems are not adequate. The most widely used unique corporate identifier, developed by Dun & Bradstreet, is a voluntary, commercial system. While obtaining a D & B number is free, using the system to identify relationships between business entities involves the user paying a fee. Many companies choose not to register for a D & B number. Further, it

would be inappropriate for government to mandate the use of a commercial system that users would have to pay for to access.

The Commercial and Government Entity (CAGE) Code system is a five (5) position code that identifies companies doing or wishing to do business with the Federal Government. Codes are assigned and maintained by the Defense Logistics Information Service, Battle Creek, Michigan. The code is used to support a variety of mechanized systems throughout the government. The code provides for a standardized method of identifying a given facility at a specific location. The code may be used for a Facility Clearance, a Pre-Award survey, automated Bidders Lists, pay processes, source of supply, etc. In some cases, prime contractors may require their sub-contractors to have a CAGE Code also.

Alternatively, a business's employer identification number, assigned by the Internal Revenue Service for tax purposes, is not linked to a system that shows relationships (full or partial ownership, merges and acquisitions) between business entities. For example, when one business merges with or acquires another business, both businesses often will continue to file taxes separately, thereby continuing to use a separate EIN. Finally, many state, federal and local governments assign unique identification numbers to manage permitting, licensing, and compliance records, however there is no single ID number that cuts across all federal, state and local governments. Just at the federal level, there is no unique ID number that cuts across all agencies.

Further, even single federal agencies like the IRS, Securities and Exchange Commission, and the Environmental Protection Agency, have been unable to create a key identifier system that effectively allows the public to integrate information. The SEC requires companies to disclose a wealth of information, going far beyond their annual statements, however SEC's identification system only covers publicly traded companies. Facilities must disclose information to EPA under a variety of programs, however it is extremely difficult to get information that accurately and reliably cuts across all of EPA's programs, and it is next to impossible to accurately and reliably identify who owns those facilities.

3. **What information produced or collected by the government cannot be made available to other government organizations or made publicly available (e.g., received under foreign exchange agreements)? How can safeguards be built in to protect privacy and national security while making appropriate information available? What is the impact of government not being able to release this information?**

Agencies are continually confronted with the challenge of balancing the public's right to know against the government's obligations to protect proprietary, privacy, and national security information. Agencies must also be sensitive to the need to preserve the integrity of the content of their information. One must realize that the government is not a monolithic entity. It is comprised by many organizations with a wide range of interests and relationships. Most government policies address either the control of information or making it available to the public. There is little or no guidance regarding limitations on sharing information with other government organizations. The result quite often is that the same rules used to determine public availability are applied to other government agencies.

Some agencies use their information as a commodity. Some may use information as barter to trade with other nations. This provides the agency access to a broader collection of information than would otherwise be possible. Sometimes this information comes with restrictions, other times not. Over the years there has been debate whether or not government agencies should allow access to information obtained from foreign governments through some exchange agreement. In many cases a Memorandum of Agreement will specify the distribution limitations. A pragmatic consideration must be recognized.

Even if there is no legally binding relationship if the entity providing the information does not believe their desire for restricted distribution will be honored they simply won't provide the information. Thus, in this case, the impact on the government entity releasing information would be greater than the impact on those providing it.

The Department of Defense is an example of a government department that has an extensive process for the release of technical information. The process provides for interagency sharing of government technical information as well as sharing with government contractors. It also provides for providing information to the public at large. It requires information-originating organizations to process their documents through a security clearance procedure and, if unclassified, a procedure for determining if the information may be made publicly available. Documents are then marked with a distribution statement. For documents not made publicly available the statement includes the reason why. The distribution marking system (A through F and X) provides for several release conditions.

The following distribution statements and notices are authorized for use on DoD technical documents[47]:

- DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited. Technical documents with this statement may be made available or sold to the public and foreign nationals, companies, and governments, including adversary governments, and may be exported.

- DISTRIBUTION STATEMENT B. Distribution authorized to U.S. Government Agencies only.

- DISTRIBUTION STATEMENT C. Distribution authorized to U.S. Government Agencies and their contractors.

- DISTRIBUTION STATEMENT D. Distribution authorized to the Department of Defense and U.S. DoD contractors only.

- DISTRIBUTION STATEMENT E. Distribution authorized to DoD Component.

- DISTRIBUTION STATEMENT F. Further dissemination only as directed. This statement F is normally used only on classified technical documents.

- DISTRIBUTION STATEMENT X. Distribution authorized to U.S. Government Agencies and private individuals or enterprises eligible to obtain export-controlled technical information.

Statements must include the reason, the date of determination and the controlling DoD office to which requests for this document shall be referred if they fall outside the distribution limitation. Reasons for assigning distribution statements B through F include: Foreign Government Information, Proprietary Information, Critical Technology, Test and Evaluation, Contractor Performance Evaluation, Premature Dissemination, Administrative or Operational Use (To protect technical or operational data or information from automatic dissemination under the International Exchange Program or by other means), and Software Documentation.

The process is supported by a registration system run by DTIC that allows users to register for access to the distribution categories for which they have been approved. The system applies both to online digital and physical media (e.g. paper, CD-ROM, video).

The Department of Energy and NASA have a similar process. All require a support infrastructure to check for authorization to release requested information.

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[47] Department of Defense Directive Number 5230.24, Distribution Statements on Technical Documents, March 18, 1987.

4.   **What are the successes in the dissemination of government information? What has been the impact on public and private programs, projects, and innovation?**

General. A few years ago Congressman Doug Walgren stated "Unless the Federal Government, with its leading role in the creation of scientific and technical knowledge, can overcome the hurdles we insist on putting in our own way, we already know what the future will look like." Information is a key component in not only science and technology but in other areas of endeavor.

- Economy—Jobs and Income Programs; Taxation and the Budget. Increased productivity relies on improved methods and technology. Informed decision-making requires outstanding analysis. These require government information either generated or acquired by government organizations in addition to information obtained from academic and commercial efforts.

- Health Care. It's been estimated that the management of information consumes 40% of the cost of health care. Effective use of medical databases reduces physician cost and time. The World Wide Web has helped many people help their physicians through health information facilities. The National Library of Medicine, a federal organization, is without question, the premier provider of health information in the world and is an integral part of the biomedical research process.

- Environmental and Energy. Environmental problems are interdisciplinary and global in nature; energy is closely linked to the environment. Weather data, water and air monitoring data are critical inputs to many communities of interest.

- Research and Development. R&D is the driving force in industrial competitiveness; scientific advancement and technological innovation are built on the cumulative knowledge base of the scientific and technical disciplines. Government information aids in technology transfer and support of the innovation resulting from the efforts of small businesses make America more competitive.

Some examples of federal collaborative efforts:

- The National Biological Information Infrastructure is a broad, collaborative program to provide increased access to data and information on the nation's biological resources. The NBII links diverse, high-quality biological databases, information products, and analytical tools maintained by NBII partners and other contributors in government agencies, academic institutions, non-government organizations, and private industry. Resource managers, scientists, educators, and the general public use the NBII to answer a wide range of questions related to the management, use, or conservation of this nation's biological resources.

- Gray literature is foreign or domestic open source material that usually is available through specialized channels and may not enter normal channels or systems of publication, distribution, bibliographic control, or acquisition by booksellers or subscription agents. The GrayLIT Network makes the gray literature of U.S. Federal Agencies easily accessible over the Internet. It taps into the search engines of distributed gray literature collections, enabling the user to find information without first having to know the sponsoring agency. The GrayLIT Network is a comprehensive portal to Federal gray literature. By offering a mode of communication for this hard-to-find class of literature, the GrayLIT Network enables convenient access by the American public to government information. The Department of Energy (DOE) provides public access to this research tool through GPO Access in partnership with the Government Printing Office. Federal Agencies participating in this project are DOD/DTIC, DOE, EPA, and NASA. Participation will be expanding as the site develops.

- CBDNet. A new program area at Commerce assumed responsibility for bringing the Commerce Business Daily (CBD) into the 21st century. They solicited proposals from organizations to fulfill

their vision of a new, electronic CBD that would serve the needs of the Government procurement community and American business in the information age.

After performing a business case analysis of all of the 16 proposals received from commercial firms and Government organizations GPO and Commerce signed a strategic alliance for the creation of CBDNet. GPO began an agency-wide initiative to create an easy to use, real-time, and comprehensive CBD system that is flexible enough to allow for the expansion of CBD beyond Federal acquisition opportunities and takes advantage of new developments in information dissemination technology.

In order to support all users, a system was developed that allows agency contracting offices to electronically submit their notices directly through the World Wide Web and e-mail as well in the traditional manuscript form. Immediate feedback is provided for electronic submissions and notices are immediately available online for search and retrieval by the public free of charge.

This successful project has made it easier and more timely for agencies to electronically submit notices for inclusion in CBD, significantly reduced the cost per notice for these submissions (from $18.00 to $5.00), allowed for the continuation of a billing and reporting process, provided support to all users of CBD, reduced the time necessary for typesetting, and enhanced the delivery of the final copy to the printing contractor.

CBD*Net* has been well received by participating agencies and the user community. Approximately 10,000 notices per month have been submitted by agencies for inclusion in CBD. Over 400,000 downloads of these notices have occurred during CBDNet's first three months of operation.

- FirstGov. The announcement of the FirstGov.gov effort may be a first step in a standardization direction to make government information available to a wider effort. Announced September 22 FirstGov provides the public with easy, one-stop access to federal government online information and services. The web site—located at http://www.firstgov.gov—provides a single online information portal that connects Americans with federal information. FirstGov allows users to search all 27 million Federal agency web pages at one time. It can search half a billion documents in less than one-quarter of a second and handle millions of searches a day. The Web Site also provides access to the home pages of major agencies and entities in all three branches of government, a section that provides topics of current interest to web users (e.g., a direct link to the Weather Service during hurricane season, to NASA during a shuttle launch, or to IRS during tax season), and key sites that access State and local government web pages. To increase efficiency, allows citizens to find information intuitively—by subject or by keyword[48]. The search engine used by FirstGov is a significant contribution and a great user tool. It is fast and impressive. However, "… the search engine needs major improvements in ensuring that information retrieved is relevant to the user request. One key element is to develop an underlying thesaurus and taxonomy to insure that the user is getting closer to the information he or she wishes. Such tools should be linked to applications that help make searches context sensitive, such as through natural language or other applications."[49]

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[48] Katzen, The Honorable Salley, Deputy Director for Management Office of Management and Budget, Testimony before a hearing of the Subcommittee on Government Management, Information, and Technology, U.S. House of Representatives, October 2, 2000.

[49] McDermott, Dr. Patrice, Information Policy Analyst, OMB Watch, Testimony before a hearing of the Subcommittee on Government Management, Information, and Technology, U.S. House of Representatives, October 2, 2000.

Although FirstGov states that it provides access to all government online information it does not. It covers only publicly available government information available on the Internet. FirstGov.gov, can not address documents that either never were or have been removed from government servers. FirstGov also does not include enough granularity in its groupings to permit the sophisticated information retrieval capability need by many government users. Information users come from many and diverse communities. There is a difference between categorization of information and indexing of information. Information is often categorized into general groups such as travel, medical, or chemistry. These may then be broken down into subcategories (e.g. travel in the U.S., in Europe, in Africa). An example of categorization is a table of contents. It leads a reader to a chapter or chapters that may contain the desired information. Indexing is more specific. Indexing permits specific bits of information to be found. The index of a book indexes specific words or phases to the pages where they may be located. Indexing may also used controlled vocabularies to aid in the finding of information. Helicopters and rotary winged vehicles are the same thing. Controlled vocabularies allow information searching to be performed using a specific word controlled word that brings together several words with the same or similar meaning. Using these two concepts together can permit a government-wide categorization of information while still permitting the more specific identification needed by the organization originally creating the information. Thus there is a need for taxonomies at some—or several—level(s). Provision should be made under the appropriate sections of OMB Circular A-130 to promote the sharing of information among government organizations as well as with the general public.

Statistical Indicators of Intergovernmental Information Sharing. There are indicators that there is demand for government information both from inside government as well as outside. Namely, there is a demand by other federal organizations for information generated by other government organizations. For example,

- <u>NTIS</u>—Access Point for Federal STI. Annually NTIS disseminates (note: NTIS does not separate government and non-government use. It is reasonable to assume that some percentage of NTIS use is by government organizations):

Paper Reports	75,000
Microfiche/SRIM	750,000
Subscriptions	175,000
Best Selling Books	75,000
Computer Products	20,000
Audiovisuals	7,000
Online/Distributions	Millions

- <u>DTIC</u>—In FY 1999 DTIC provided nearly 53,000 unclassified non-digital documents to 30 federal government organizations in the Executive and Legislative branches. While 45% of these documents went to NTIS and the Library of Congress for their collections serving both the Public and Private sectors, 55% went to federal agencies to meet local needs. In addition to these "physical" documents 2,410 digital documents were provided to other federal agencies. Delivery of digital documents will continue to grow as more documents are made available electronically.

- <u>GPO</u>—During a recent 11-day period, GPO extracted the number of .gov and .mil addresses (excluding state and municipal .gov sites) referring users to GPO Access and the number of referrals and compared them to overall addresses referring and the total number of referrals. Some 635 distinct URLs referred users to the resources of GPO Access. This was 12 percent of the total. In all 32,185 referrals were received from these federal government addresses, or a little more than 23 percent.

These examples of central information management organizations, are strong indicators of a need for government agencies to share information content resources.

The other side of the coin. This response from one the Departmental libraries queried for this effort is typical of the responses from others. "The Main Departmental Library does not have a formal or informal arrangement with another government agency. We use the Library of Congress and GPO extensively and are pleased with the responses. We are a selective depository library, which adequately meets the needs of our Department. We receive minimal requests from other government agencies to share depository items. I would estimate that 50% of our clients' needs are satisfied via free Web sites. We rely on private sector products for about 30% of the needs of our Departmental clientele. Standardization could improve the environment of interagency sharing of information."

5.   **What are the likely developments in hardware and software that will enable optimal models of content description and dissemination? How can preservation and archiving be assured? What systems are needed to insure that information is archived and preserved? What is the impact of not having such a system? How much history will we lose?**

Knowledge Management. Knowledge management is one of the current "in" subjects. However, it is a concept looking for a definition. However defined, knowledge management is part of the centuries long continuum of information management advances. One way of looking at it is that knowledge management is a process of building a shared understanding of both tacit as well as recorded knowledge, not transplanting a knowledge object from one mind to the next. Information Technology continues to advance at an increasingly accelerating rates leaving Information Content Management falling behind. One of the problems is that while it's relatively easy to convert digital objects from one technology to another it is far more difficult—and expensive—to reconfigure content either to use another digital technique or to convert non-digital information to digital. Knowledge management, however, is at least driving managers and technicians to consider the wide range of management needs throughout its information life cycle. Like the World Wide Web—in fact, the Internet—we are in the early years and thus, whatever is done, can and will be done better—tomorrow.. Some companies are beginning to produce product ranges that include integrated software tools for managing information through a significant portion of its life cycle. For example, tools for:

- Internet servers for monitoring information sources across networks to automatically acquire personalized information to individuals and groups, based on their content and delivery preferences. But this brings with it both privacy and security concerns.

- Facilities to index, search and retrieve information on Web and file servers distributed across the enterprise and stored in many formats.

- Automated categorizing and indexing and knowledge organizing tools.

- Display and portal development tools.

Standards. Forced use of standards is normally resisted. Agencies and individuals often feel standards impede progress and cost more than they are worth. These beliefs are true if applied to a limited vision of the community. When the community expands and other communities join in problems *may* arise. In a digital environment they *will* arise and, like it or not, standards become the norm after a significant period of upheaval. It's interesting to note, that despite the historical perception that standards inhibit innovation, the Internet is based upon a set of voluntary standards developed within the Internet technical community.

- GILS. As discussed earlier GILS was an attempt to install a standard Government Information Locator Service. Included in this effort was a requirement for certain data elements and an implied

requirement to use the Z39.50 standard for information retrieval. Z39.50 is an international standard for communication between computer systems, primarily library and information related systems. When GILS was announced few information retrieval offerings included a Z39.50 implementation. That, plus a requirement for some level of file redesign and management meant few federal agencies implemented a Z39.50 facility for GILS.

- Structured exchange. Another change is on the horizon. The Extensible Markup Language (XML) is a method for putting structured data in a text file. The Hypertext Mark Up Language (HTML) used to create many web pages, while a good tool for creating Web pages, is static. HTML presents a fixed snapshot of data. XML structures data, allowing much more fluidity. With XML, Web sites can exchange data much more easily, a process that greatly facilitates information exchange. While HTML specifies what each tag & attribute means (and often how the text between them will look in a browser) XML leaves the interpretation of the data completely to the application that reads it. This makes it flexible and adaptable.

- Digital Archiving. A reference model is a framework for identifying concepts and relationships. It is possible to "hang" standards on such a framework, because it provides an abstraction of a small number of key, unifying concepts that can be used to explain to others what the "business" is all about. When the Consultative Committee on Space Data Systems (CCSDS) was asked by International Standards Organization (ISO) to develop standards for digital archiving of spatial data, it became apparent that there was no consensus on what digital archiving meant. There was no clear definition of an archiving service. It became apparent that preserving digital information is not the same as preserving bits. Therefore, the CCSDS decided that what is needed before development of actual standards is a reference model for archiving. From the beginning, the emphasis has been on digital archiving, but the group decided early not to ignore physical archives. In both digital and physical archives, the system is made up of hardware, software, and people.

  In 1995, the CCSDS began the development of the Open Archival Information System (OAIS) Reference Model. The model is called "open" because it has been a very public process. The process has involved a number of information gathering activities that resulted in review and input from an ever-growing number of stakeholder groups. The first international workshop was held in October 1995. International workshops have been held twice a year since that time. A small group, which actually develops the reference model, meets four times a year.

  To begin the small group selected several key documents on digital archiving, including a seminal work from the Commission on Preservation and Access authored by Don Waters. They also looked at other reference models. A formal specification technique called OMT (Object Modeling Technique) was selected to model the information in an archive.

  A key component of the reference model is the glossary of reference terms. Care was taken to identify primitive concepts, but also to select terms and definitions that attempt to bridge the terms currently in use by different stakeholder groups. Generally, the groups have found that they are able to map their community-specific terms to the reference model terms. In February 2000, under the sponsorship of CENDI and the International Committee for Scientific and Technical Information (ICSTI) a workshop was held in Paris, France. The purpose was to discuss the challenge of archiving digital information. A follow-up session at ICSTI's Annual General Assembly included discussion on how the OAIS Reference model can be adapted for textual information in addition to digital data.

- Persistent Identifiers. The Internet Engineering Task Force (IETF) is a large open international community of network designers, operators, vendors, and researchers concerned with the

evolution of the Internet architecture and the smooth operation of the Internet. It is open to any interested individual. One of the IETF's working groups is to define both a Uniform Resource Name (URN) framework and an initial set of components that fit this framework.

URNs are persistent identifiers for information resources. The framework will define the mechanics for enabling global scope, persistence, and legacy support requirements of URNs; requirements for namespaces to support this structure will also be defined. Although the framework will allow URNs to be defined that vary in terms of degree of scalability and persistence, ensuring "user friendliness" of all resultant identifiers is beyond the scope of this group.

Standardization, however, is necessarily slow and deliberate. Putting all the pieces in place requires consensus in the IETF, developments in the community of Web browser implementers, and deployment of new code by the community of network system managers who administer the Domain Name System (DNS) for the Internet. Accordingly, there are several efforts to implement approaches addressing the persistence problem during the period of URN development. Two examples follow:

The Online Computer Library Center, Inc. (OCLC) has deployed a naming system and resolution service for cataloged Internet resources that will assure systematic and reliable access to named resources. The naming scheme is using the accepted and stable syntax of URLs. The names, which can be thought of as Persistent URLs (PURLS), can be used both in documents and in cataloging systems, thereby increasing the probability of correct resolution and reducing the burden and expense of catalog maintenance.[50]

The Corporation for National Research Initiatives (CNRI) has developed the Handle System®, a comprehensive system for assigning, managing, and resolving persistent identifiers, known as "handles," for digital objects and other resources on the Internet. Handles can be used as Uniform Resource Names (URNs). The Handle System® includes an open set of protocols, a namespace, and an implementation of the protocols. The protocols enable a distributed computer system to store handles of digital resources and resolve those handles into the information necessary to locate and access the resources. This associated information can be changed as needed to reflect the current state of the identified resource without changing the handle, thus allowing the name of the item to persist over changes of location and other state information. Combined with a centrally administered naming authority registration service, the Handle System® provides a general purpose, distributed global naming service for the reliable management of information on networks over long periods of time.[51]

The goal of global uniqueness is easily met through the central administration of names or Handles. The issue of location independence is met through the consolidation of naming under a stable resolution host with reliable service levels.

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[50] Taken from the 1995 November/December issue of the *OCLC Newsletter* http://purl.oclc.org/docs/purl_summary.html.

[51] See Corporation for National Research Initiatives Handle System® at http://www.handle.net/introduction.html. For a more complete discussion of the Handle system and its use in the Digital Object Identifier (DOI) application see the *Quarterly Newsletter of the International Council for Scientific and Technical Information*, No. 30, April 1999, http://www.icsti.org/icsti/forum/fo9904.html.

CONCLUSIONS AND RECOMMENDATIONS

There continues to be a need for NTIS, GPO, NARA, national libraries, and other central service bureau types of information services. The need, however, goes far beyond these organizations. There is a need to extend to all government information the information content management disciplines under which these organizations operate.

OMB Circular A-130 does not adequately address information sharing among federal organizations. Provision should be made under the appropriate sections of the circular to promulgate the sharing of information among government organizations. A comprehensive look is needed at how to maximize access to government information—both paper and electronic, publication and record of government activity—and a plan for achieving meaningful access needs development. If the assessment starts by addressing the issue of information sharing among federal organizations it follows that it will also address the issue of greater public access.

Except in certain specific communities such as the scientific and technical information communities there is no consistent organizational (metadata, indexing, etc) discipline in agency information. Hence, there are no facilities for government agencies to discover and access much of the information that may be of use to them. Many government policies try to assure the availability of government information to the public so that it can be used to assure openness in government, allow technology transfer, and provide a valuable information source for the public to use. Circular A-130 addresses information sharing among government agencies primarily from the standpoint of paperwork reduction, urging agencies to look at satisfying new information needs through interagency or intergovernmental sharing. In fact, Intra-agency or interagency use of sharing of government information is specifically excluded from the A-130 definition of the term dissemination. Sharing of information systems, not information content, is a policy requirement.

Interagency information content sharing efforts are largely done in an ad hoc manner and done within a specific community of interest. Policy does not exist to bring the collective experience of agencies to formulate some general policies nor does it appear that there is any great Congressional or Presidential interest in allocating money to bring "order to the information chaos." The announcement of the FirstGov.gov effort may be a first step in a standardization direction to make government information available to a wider effort. FirstGov.gov, however, cannot address documents that either never were on or have been removed from government servers. FirstGov also does not include enough granularity in its groupings to permit the sophisticated information retrieval capability need by many government users. FirstGov does not address the fundamental issue that although the Internet is a public utility all information is not public information. Network security, personal privacy and protection of business information and intellectual property pose the same fundamental problem. With adequate access controls and network encryption, the same systems concepts used to provide a fully open Internet to the world population can be used to address internal business needs.

Information users come from many and diverse communities. There is a difference between categorization of information and indexing of information. Using these two concepts together can permit a government-wide categorization of information while still permitting the more specific identification needed by the organization originally creating the information. There is a need for taxonomies at some—or several—level(s).

Access to government information is only one aspect of the challenge of exploiting the information content resource. Two critically important digital challenges must also be addressed: continuous, long-term access to this digital government information accessible agency web sites, and its preservation.

OMB Circular A-130 inappropriately limits the inventory provisions of 44 USC 3506(b)(4) by applying them only to "major" systems, holdings, and dissemination products. All electronic information systems, regardless of size, create electronic records (E-records) and all E-records should be managed. At a minimum, agencies should obtain NARA's approval to dispose of any E-records received or generated in any system... and stakeholders should be given the opportunity to comment not only on the retention/disposition schedule but also the indexing/ classification scheme for each records series. (36 CFR 1234.10(d) requires agencies to address records management requirements before approving any new electronic information system or enhancements to existing systems.) Thus, the records disposition/ classification scheme should become the inventory required by 44 USC 3506(b)(4).

1. <u>Recommendation</u>: **Institutionalize interagency cooperative efforts for information sharing.**
   OMB Circular A-130 should include provisions for intergovernmental sharing of information. The term "life-cycle planning" used in A-130 should be better defined to address planning for the sharing and use of information content for research and development, for decision-making, and to ensure an adequate record of governmental activities. Analysis, recently begun by GAO, should be carried forward to determine what is needed to ensure privacy, confidentiality, security, and authenticity as information is shared and integrated across agencies, and policies established and implemented.

2. <u>Recommendation:</u> **Clarify "life-cycle planning" in OMB Circular A- 130.**
   Government Paperwork Elimination Act (GPEA), Title XVII of Public Law 105-277, promotes the use of digital signatures and the submission of reports to the Federal Government electronically**.** Attachment B, Element #4, Interagency Reporting Requirements of the OMB implementing guidance calls for "A short description of the interagency report or information dissemination product..." Generic descriptions of each report and "dissemination product" are better than nothing. (By law, any "dissemination product" deemed to be "major" already should be described in GILS. However, in order to share information efficiently and effectively across agencies (as well as with the public), each "data element' within each report or "dissemination product" will need to be identified and its characteristics should be specified. The logical time to do so is when designing the "forms" which will gather the data. The best way to avoid needless redundancies is provide for a registry of the data elements and require the Offices of Primary Responsibility (OPR) to consult it before establishing any new elements on any forms.

3. <u>Recommendation:</u> **In providing the public the opportunity to submit information by electronic means, as required by the Government Paperwork Elimination Act (GPEA), agencies should be expected to render the required data elements in XML format on the Internet in order to facilitate interoperability and ease of use.**

4. <u>Recommendation:</u> **An interagency committee should be established to develop an information taxonomy to be established federal government-wide.**

5. <u>Recommendation:</u> **Agencies should be required, when seeking NARA's approval to dispose of records, to specify the metadata by which each of their records series will be classified.**
   This will aid in the searching and acquisition of government information, preferably on the Internet. Agencies should also be required to consult with their stakeholders concerning needed information taxonomies within the context of their annual GPRA performance plans and reports.

6. <u>Recommendation:</u> **A comprehensive analysis should be conducted regarding what currently non-digital government information should be converted to digital and the cost to do so.**

7. <u>Recommendation:</u> **A comprehensive analysis should be conducted regarding what need to be done to assure permanent public access to digital publications produced by Federal agencies.**

8. <u>Recommendation:</u> **An interagency committee should be established to identify and recommend how federal identifiers can be used to assist agencies and the public in obtaining information residing in different agencies.**
Access should be designed to help agencies and the public determine compliance with the laws and regulations, and identify duplicative requirements. Such recommendations should be forwarded to the President's Management Council and GSA for use in FirstGov, the government's web portal.

9. <u>Recommendation:</u> **A comprehensive analysis should be conducted and recommendations made on the most efficient ways to translate and coordinate the many state and local government—assigned unique identification numbers used to manage permitting, licensing, and compliance records with the federal unique identifiers.**

10. <u>Recommendation:</u> **An information technology research program should be established to address the Federal government's most critical requirements for long-term information content needs. These include: security (including information integrity and authenticity) and privacy; data integration; and scalable information infrastructure to improve the capability and reliability of the government's information infrastructure.**

11. <u>Recommendation:</u> **OSTP step forward to assume the role it has in statute to provide oversight in the effective management of STI—perhaps even form a COSATI like group which has membership from both the public and private sectors.**
Although STI is better managed than most government information it is a critical national resource warrants a strong central leadership to maximize resource sharing, both among government agencies and with the general public.

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PANEL 2, APPENDIX B: FOIA EXEMPTIONS

Types of records that may be withheld.

Number 1. Those properly and currently classified in the interest of national defense or foreign policy.

Number 2. Those related solely to the internal personnel rules and practices.

Number 3. Those concerning matters that a statute specifically exempts from disclosure by terms that permit no discretion on the issue, or in accordance with criteria established by that statute for withholding or referring to particular types of matters to be withheld. Examples are:

- Patent Secrecy
- Restricted Data and Formerly Restricted Data
- Communications Intelligence
- Authority to withhold from Public Disclosure Certain Technical Data
- Protection of Intelligence Sources and Methods

Number 4. Those containing trade secrets or commercial or financial information that a DoD Component receives from a person or organization outside the Government with the understanding that the information or record will be retained on a privileged or confidential basis in accordance with the customary handling of such records.

Number 5. Internal advice, recommendations, and subjective evaluations, as contrasted with factual matters, that are reflected in records pertaining to the decision-making process. Examples:

- Nonfactual portions of staff papers, to include after-action reports and situation reports containing staff evaluations, advice, opinions, or suggestions.

- Advice, suggestions, or evaluations prepared on behalf the Department by individual consultants, or by boards, committees, councils, groups, panels, etc., that are formed for the purpose of giving advice and recommendations.

- The nonfactual portions of evaluations by Departmental personnel of contractors and their products.

- Information of a speculative, tentative, or evaluative nature or such matters as proposed plans to acquire and dispose of materials, real estate, facilities, or functions when disclosure would provide unfair competitive advantage or would impede legitimate government functions.

- Trade secrets or other confidential research development or commercial information owned by the government.

- Planning, programming, and budgetary information, which is involved in the planning and resource allocation process.

Number 6. Information in personnel and medical files, as well as similar personal information in other files, that, if disclosed, would result in a clearly unwarranted invasion of personal privacy.

Number 7. Records or information compiled for law enforcement purposes, i.e., civil, criminal, or military law.

Number 8. Records contained in or related to examination, operation, or condition reports prepared for, or in behalf of, or for the use of any agency responsible for the regulation or supervision of financial institutions.

Number 9. Records containing geological and geophysical information and data (including maps) concerning wells.

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

CONTENTS[52]

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;

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[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 often 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 depositary 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]

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[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;

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[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.

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[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

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[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 Initiative[61] 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

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[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

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[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.

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[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.

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[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

APPENDIX 26. PANEL FOUR: FINAL REPORT ON RENEWED AND STRENGTHENED PARTNERSHIPS BETWEEN THE PUBLIC AND PRIVATE SECTORS FOR PUBLIC INFORMATION DISSEMINATION

> 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 ADVISORY PANEL FOUR
PUBLIC-PRIVATE SECTOR PARTNERSHIPS

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[68] Available at http://www.nclis.gov/govt/assess/assess.appen26.pdf.

OVERVIEW OF STUDY BACKGROUND, PANEL'S PURPOSE AND ISSUES IDENTIFIED

Background

On June 12, 2000, Senator John McCain, Chairman of the Senate Committee on Commerce, Science and Transportation, requested that the United States Commission on Libraries and Information Science ("NCLIS"), " undertake a review of the reforms necessary for the federal government's information dissemination practices. The Senator requested specifically that:

> At a minimum, this review should include assessments of the need for:
> 1) proposing new or revised laws, rules, regulations, missions, and policies;
> 2) modernizing organization structures and functions so as to reflect greater emphasis on electronic information planning, management, and control capabilities, and the need to consolidate, streamline, and simplify missions and functions to avoid or minimize unnecessary overlap and duplication;
> 3) revoking NTIS self-sufficiency requirement;[69] and
> 4) strengthening other key components of the overall federal information dissemination infrastructure.

Following Senator McCain's request, NCLIS established four Advisory Panels, including Panel 4—Public-Private Sector Partnerships (Panel "4")—to study redefining public-private sector roles, partnerships, and initiatives vis-à-vis public access to, and dissemination of, government information, given the advent of the World Wide Web, the Internet, and associated technological changes that are driving the Information Age.

Panel's Purpose

During its first meeting, Panel 4 members established the general scope of the inquiry, taking special note of both the requests made by Senator McCain and the principles and recommendations from the 1982 NCLIS Report *Public Sector/Private Sector Interaction in Providing Information Services* ("1982 Report")[70] that would provide valuable background. As part of its charge, the Panel determined that it would review the principles and recommendations contained in that report. The specific focus of the Panel is how development of the World Wide Web ("WWW"), Internet, and associated technologies have affected, and will continue to affect, open access to Federal government information[71] and the roles of the public and private sectors[72] in providing and maintaining access. The Panel decided against limiting the scope of its deliberations solely to electronic information, recognizing that print formats are so often the basis for later electronic documents. Panel members also agreed to consider topics such as copyright or pricing of government documents, if they would be relevant to its deliberations as they relate to the critical issues identified.

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[69] The specific issue of the National Technical Information Service business model for the Information Age is to be addressed by Advisory Panel 1.

[70] U.S. National Commission on Libraries and Information Science, *Public Sector/Private Sector Interaction in Providing Information Services,* Washington, DC: Government Printing Office, 1982. The 2000 edition of *Public Sector/Private Sector Interaction in Providing Information Services* is available at http://www.nclis.gov/govt/assess/publpriv.html; principles: page 33 and following, recommendations: page 47 and following.

[71] As in the 1982 Report, Panel 4 considers government information to include information under the auspices of all three branches of government: executive, legislative and judicial. The panel agreed, however, that it would not address issues involving state or local government information policies.

[72] The 1982 Report defined private sector "…to include private enterprise, for-profit and not-for-profit, as well as organizations such as professional societies and trade associations, hybrids that are joint government/private enterprise, and organizations such as privately supported libraries and universities (even though they may be subsidized by public funds)."

Later in the Panel's deliberations, some Panel members felt that the report should note the existence of varying statutory and regulatory definitions of government information, particularly in relation to current problems regarding agencies' complying with dissemination and access requirements. Although there was disagreement among Panel members as to whether the Panel's report should recommend a new definition, it was agreed that a review and some analysis was warranted.

CRITICAL ISSUES AND WORKING PANEL REPORTS

Panel 4 defined "critical issues" to be those that, if left unresolved, could deny the American public open, timely and useful access to Federal government information. Five such issues were identified: (1) Preservation & Permanent Access; (2) Authentication; (3) Finding Information; (4) User Assistance and (5) Channels of Distribution. In each subject area, the Panel Chair established Working Groups tasked to identify issues and assess current government activities, including examples of current policies and practices that have either enhanced or inhibited the roles of the public and private sectors in meeting the American public's need and desire for access to Federal government information.

Working Group 1—Preservation & Permanent Access

General Discussion

The use of online systems for dissemination and access to Federal government information products and services has expanded access greatly, but at the same time has created new challenges, particularly in the areas of preservation and long-term access to information in a potentially transitory format. In the print world, the Federal government fulfilled its responsibility to assure permanent public access largely through the regional depository libraries. Those libraries have had a legislative mandate to "retain at least one copy of all government publications in printed or micro facsimile form, (except those authorized to be discarded by he Superintendent of Documents)...."[73] In the transition from a print to an electronic depository program, the responsibility for permanent public access shifts back to the government (GPO, agencies, and partners), since there is no equivalent responsibility for regional depository libraries to provide permanent public access to electronic government information. In fulfilling this mission, GPO relies heavily on the principles enunciated in its 1996 *Study to Identify Measures Necessary for a Successful Transition to a More Electronic Federal Depository Library Program*:[74]

- *Principle 1.* The public has the right of access to government information.

- *Principle 2.* The government has an obligation to disseminate and provide broad public access to its information.

- *Principle 3.* The government has an obligation to guarantee the authenticity and integrity of its information.

- *Principle 4.* The government has an obligation to preserve its information.

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[73] 44 U.S.C. 1912.

[74] U.S. Government Printing Office, *Study to Identify Measures Necessary for a Successful Transition to a More Electronic Federal Depository Library Program; Report to the Congress* (GPO Publication 500.11), Washington, DC: Government Printing Office, 1996; http://www.access.gpo.gov/su_docs/fdlp/pubs/study/studyhtm.html.

- *Principle 5.* Government information created or compiled by government employees or at government expense should remain in the public domain.[75]

The government currently has multiple programs and channels for dissemination and access to tangible and electronic government information products and services, but the systems are not coordinated to guarantee comprehensive coverage and ready access or retrieval for current electronic information products, much less long term/permanent public access. The National Archives and Records Administration ("NARA") has responsibility for the retention and preservation of the records of government, but not necessarily for all publications of the Federal government.[76] GPO distributes tangible publications to depository libraries for current and permanent access in decentralized locations around the country, and provides cataloging and locator services for tangible and online Federal government information products and services. In addition, GPO Access provides a number of electronic publications from all three branches of government to the public.[77] GPO also offers many high-interest federal government print and CD-ROM publications for sale on a cost recovery basis.

NTIS collects scientific and technical information ("STI") for their permanent collection and makes copies available for sale in multiple formats. The NTIS catalog and index are only available to the public on a fee basis and most of the STI reports included in the NTIS clearinghouse are not provided to the FDLP for no-fee public access.[78] In addition, a number of agencies also sponsor subject-oriented information clearinghouses for material in tangible and electronic formats in no-fee or cost recovery programs (DTIC, ERIC, MEDLINE, NCJRS, etc.). In addition, many agencies operate public information centers, public reading rooms, or specialized depository programs (such as the Census Bureau, PTO, etc.).

As a rule, however, agencies are focused on their missions, which may or may not emphasize provision of current or long-term broad public access to their information products or services. They are producing an increasing volume of their information products and services on a decentralized, local basis through the Internet. Public access to these web-based information products and services may be limited, since they are not consistently included in the various existing government programs that foster information dissemination or information access, such as GPO Access or NTIS. Moreover, there are no agreed-upon standards used by Federal agencies to produce tangible or online electronic products. The lack of standards causes problems for current access, as well as for preservation and permanent public access. Likewise, there are no coordinated programs or standards for permanent access to or preservation of tangible or online electronic media across all branches of government.

The private sector role in adding value to government information to create new products and services fulfills the needs of those citizens who are willing and financially able to pay for these enhancements or who wish to obtain access to government information from sources other than the government itself. Private sector organizations, both for-profit and non-profit, play an essential, complementary role in making optimum use of government information. They may repackage the information in value-added products, and provide value-added dissemination to reach wider audiences. By

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[75] In discussing agency information activities, Working Group 1 noted that "[T]he government information in such products and services is in the public domain, available for unrestricted use by the public or private and non-profit sectors, except to the extent that any proprietary, copyrighted material is included." *See*: "Report of Working Group on Preservation and Permanent Public Access Issues," p. 7.

[76] NARA is engaged currently in promising research to preserve and provide permanent public access to electronic records.

[77] GPO assumes responsibility for keeping these titles available for long-term public access. In addition, while GPO Access points to electronic publications on agency web sites, GPO has no control over how long the information will be maintained electronically by the agency. GPO has initiated a digital archive of copies of these items on a pilot basis and has entered into partnership agreements with some agencies to ensure permanent public access.

[78] In January 1999, NTIS initiated a pilot project with the Federal Depository Library Program was initiated to provide access for 22 FDLP libraries to new titles added to the NTIS collection in digital format from October 1997 to the present.

incorporating the information in supplemental catalogs and indexes, they expand use. In some cases, through public-private sector joint partnerships, they assist in the publication of information products that may otherwise not have been published. In the best models of such public-private sector partnership programs, the products are included in GPO'S cataloging services and the publications are provided to the FDLP for some limited no-fee public access to complement the sales access. Moreover, the private sector plays an important role in the development of new technology and new systems for information publication, access and retrieval—functions that enhance government programs. It is very likely that when there is market demand, value-added private-sector government information products and services will be maintained for permanent public access. Once the economic motive disappears, the future access to such products and services is less certain.

The American public's access needs have traditionally been best served through multiple, non-exclusive programs/channels of public and private sector information dissemination and information access to be available to the widest possible public audience. Government products and services have been, and should continue to be, equally and widely available and readily accessible to all members of the public. In the electronic world, it is equally important that government assure their availability on a timely current, contemporary basis, as well as on a permanent basis for reference and historical research.

Recommendations of Working Group 1

It is the Federal government's responsibility to assure permanent public access to government information. Given today's current situation, the Working Group on Permanent Public Access recommended the following specific actions:

- Federal government's assuming responsibility for funding programs to maintain online electronic information products and services for permanent public access.

- Developing a clear and simple system for Federal agencies to submit information products and services to the various government programs geared toward information dissemination and public access.

- Improving program regulation, guidance and standards for information producing agencies in the production of tangible electronic products and online resources, including necessary metadata, public access and preservation.

- Establishing better communication and cooperation among information dissemination and information access programs of the Federal government, as well as libraries and the private sector (non-profit and for-profit organizations), to reduce the confusion as to the location of needed information.

- Improved public education and outreach programs focusing on the various methods to identify and retrieve government information products and services.

- Creating sources for technical, expert advice for Federal agencies on data warehousing, data management, standards, etc.

- Conducting more research on preservation of forms, formats, and contents of electronic government information products and services.

Working Group 2—Authentication

General Discussion

Information in electronic formats differs from information in traditional formats in several ways. First, it may have no counterpart in print or recorded formats; having been created, stored, disseminated and archived electronically. Secondly, its own format may differ significantly from more traditional materials, and increasingly, multiple formats are being incorporated into one document. An electronic document does not automatically carry a seal or stamp that denotes its point of origination and validity, and an electronic document can be copied and disseminated endlessly with changes being made easily.

Works of the U.S. government are generally not protected by Federal copyright law.[79] Government information has always been accessible to the American public, including the private sector and libraries that further disseminate the information. Moreover, because of the First Amendment and other long-standing principles of our democratic society, government has not and should not control further use or dissemination of government information, including alteration of a document, product or service once distributed generally to the public. Nevertheless, when the public accesses government information directly from the government, it is crucial that users know the information is authentic.

To date, the most common means to guarantee such assurance has been reliance on source credibility. Increasing electronic dissemination of information by Federal government agencies, however, highlights the need for agencies to take added measures to assure the public that specific information—especially that contained on government websites—has not only been created, validated, and initially provided by the Federal government but to understand which information carries the imprimatur of an official agency promulgation. The growing decentralization of agency electronic information dissemination activities, coupled with the ease of tampering or misrepresenting digital records, are likely to increase the focus on authentication procedures in the near future.

Despite the lack of agencies' applying sophisticated digital watermarking or authentication technology, public concerns that information provided by government in electronic formats may not be authentic have been kept relatively minimal. The American public continues to rely on a trusted source for such information, e.g. an established agency web site.

The Federal government must assume the primary role of assuring authenticity. Several challenges must be overcome, however. First, agencies have no history of or experience in attempting to ensure authentication of electronic information. Second, government information is produced by so many agencies in all three branches of government that any attempt at consistent application of standards or new technologies to provide a digital watermark or other types of digital rights management controls is almost impossible—not to mention the threat that employing such technologies may likely interfere with unrestricted access to and re-dissemination of government information. Third, technology that would provide some sort of automatic electronic authentication is still in the developmental stages. Applying such technologies would be costly or technologically challenging—both for government and the public.

As we advance further into era of e-government, with its concomitant and significantly increased public need to obtain government information electronically, concerns about what constitutes authentic government information provided Federal agencies will also grow. If a technological solution is chosen, the greatest challenge will be to ensure that the public has the means by which to

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[79] 17 U.S.C. 105.

access the information with minimal encumbrance, so that there is no threat to the unfettered flow of government information.

Recommendations of Working Group 2

- The Federal government must assume the primary role of ensuring the authenticity of electronic Federal government information, particularly that offered through agency websites.

- Federal government agencies should initiate procedures to remain informed of developing technologies that will authenticate government information provided electronically by agencies.

- Should new laws or regulations mandating increased technological protections be promulgated, they must respect both the potential growth and limitations of technology. Additionally, it is important that new laws or regulation be technology neutral and market-driven.

- Agencies should establish procedures by which there is control over what is posted on websites and clear indication whether government information available electronically represents and official opinion or promulgation of any particular agency.

- The Federal government should increase security measures to assure that government sites do not fall prey to manipulation or alteration of electronic government information provided directly to the public.

- The legal and regulatory framework surrounding authentication of digital government information must continue to provide the public and private sectors, as well as not-for-profit information users and disseminators, the opportunity to maximize opportunities for further dissemination and broader access to electronic government information.

Working Group 3—Finding Information

General Discussion

The question of whether electronic information can be located without cataloging, indexing, or offering access at the document level is an important consideration, since it directly relates to the costs associated with providing public access to government information...

Federal agencies should not be expected to provide an equal level of access to every type of information—especially if providing this information without adequate summarizing, abstracting and indexing/metadata, created at considerable cost, means that it is only added to a mountain of digital objects that users will have to wade through. The private sector and libraries have traditionally filled an important role in adding value to government information by cataloging, abstracting and indexing, and there is little evidence to suggest that their ability to serve the public through such services has become obsolete. Government should be aware of the efforts and associated costs required to effectively abstract and index information. In some cases, government may find it more beneficial to the public to partner with the private sector and libraries to accomplish the task. Alternatively, government can determine when it is more appropriate to allow the private sector and libraries to assume primary responsibility for meeting public demands for increased search and retrieval functionality.

Problem areas include:

If the Federal government continues to adopt a distributed approach to government information—i.e., each agency develops a website for the distribution of its own information products and services—

then the public, especially those with scant knowledge of the structure of the Federal government, will face difficulties in finding government information at the source. The first challenge for government, then, is to assure that the public can identify which agency might hold the information desired. The second challenge becomes navigating the agency's website, which can vary widely in complexity and user friendliness. To navigate them often requires an intimate knowledge of not only the agency's structure but it's internal terminology. It can be very difficult to find a specific item, even if the user knows its name. It should be noted, however, that GPO Access's cataloging and locator services and FirstGov, under the authority of the General Services Administration ("GSA") do provide access to centralized search capabilities that allow users to retrieve information from a broad array of agencies and branches of government.

Although it was presumed in the early days of the WWW that full-text search engines and relevance ranking algorithms would provide adequate search results, the providers of commercial search engines on the Internet quickly realized that this was not true. Today's WWW searching is far superior to performance just a few years ago, but this is not entirely due to technological improvements, it is also very much related to human intervention (in the form of librarians visiting and evaluating websites before delivering them as answers to the searcher's question); the adoption of classification methodologies; and further development of controlled vocabularies (thesauruses or taxonomies) that have long been used in the construction of bibliographic databases.

There is currently much discussion about the need for developing and deploying "metadata" or indexing systems to aid in the retrieval of documents, data sets, and other digital objects.[80] If Federal government agencies do not go to the effort of adding metadata/indexing terms to the digital objects they are providing on the WWW, neither the Internet search engines nor agency/interagency search engines can retrieve them in a reliable or consistent way or rank them for the user. The result of skipping the indexing step is a bad experience for most users.

The more information that becomes available in electronic form, the more necessary it is to provide would-be users of the information with a summary of the contents to facilitate indexing and retrieval. Of the technologies available today, automatic summarization programs generally extract only the first few lines of text as the summary. This method works if the author of the document has summarized its findings in the first few lines. Too frequently, however, the first few lines tell the user nothing about the contents of the document. This exacerbates the ability of the public to effectively sort through an answer set—one that may include hundreds of possible "hits"—to find the information sought. In short, summarizing or abstracting information has classically been done by humans, and often at great expense. That situation is likely to continue into the foreseeable future.

The crucial question to address is whether the government can and should invest the resources required to add metadata/indexing functionalities to all Federal government information or whether priorities, primarily the need of the American public to gain access, should be established as to which information requires such detailed handling.

Recommendations of Working Group 3

- The Federal government should continuously review and distinguish among the types of information produced by Federal agencies and the uses for which these information types are employed, in order to prioritize which types of information made available receive which levels of

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[80] For example, the National Federation of Abstracting and Indexing Services (NFAIS) sponsored, under an agreement with the U.S. Geological Survey, a conference on this subject in 1997 and will sponsor another in 2001. In the process of organizing these conferences NFAIS discovered hundreds of government agencies working on metadata projects.

indexing/metadata.[81] Key factors should be the general usefulness of the information, the public demand for the information, and the national priority for its dissemination.

- The Federal government should develop strategies for investing in system improvements and encouraging cooperation among agencies in areas where the public need for detailed access is greatest. Among the considerations should be the degree to which that need is currently being addressed by the private sector and libraries.

- Congress should continue to authorize and fund specific central agencies to focus on information and information technologies that serve priority purposes of the Federal government.

- Federal agencies should be encouraged to follow the provisions of existing government information policy guidelines and laws. Congress should adopt enforcement provisions to assure that agencies are in compliance.

- Federal agencies should continue to form partnerships with private sector organizations so that the cost of the investment can be shared and the free-enterprise system can continue to bring innovation and expertise to the process, provided that federal government information remains free of copyright and there is unfettered public access.

Working Group 4—User Assistance

General Discussion

User assistance is of critical importance in facilitating use of electronic information. Technology continues to enhance the means of providing huge amounts of information in electronic formats— whether on disk, CD-ROM or directly through the WWW and the Internet. As the number of resources grows, users are in greater need of tools to help identify both sources of information and data sets— critical components of those information sources—in order to meet their specific needs.

There are several means by which users can gain assistance: (1) personal interface, e.g. in non-profit and corporate libraries or through Federal agency user support hotlines; (2) summary source information, provided most commonly in any number of formats as of indices and abstracts of information sources, summarizing both general information sources, as well as specific data sets within general sources; (3) search engines/locator services, used primarily to locate general information resources online effectively and quickly; and (4) search and retrieval technologies, normally specialized software delivered as part of the information product or service and used primarily to locate specific data or data sets once access to a digital information source is achieved.

Several other issues affect the provision of assistance to users. Among the most critical of these— regardless of whether assistance is provided by government, the private sector or libraries—are (1) cost to both the provider and members of the public; (2) quality, often tied directly to the cost of providing the assistance; and (3) innovation, i.e. developing, testing and providing new means of obtaining and using information sources or data sets to meet the public demand

Two major problem areas exist in user assistance issues related to government information, regardless of the branch of government involved. The first is a lack of widespread, public knowledge about what information sources are available, particularly online sources supplied directly by government. The second is the inability to search and retrieve specific data sets once an information source has been identified.

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[81] For example, there is a clear difference between the level of indexing required for online government information products and internal records of agencies, such as email and memorandums.

The private sector and the library community have traditionally provided the bulk of user assistance functionalities, particularly in the print environment and at the beginning of the transition to electronic data delivery. More recently, the advent of GPO Access, NTIS' FedWorld, and the GSA FirstGov website demonstrate that the Federal government is now entering this field of activity with enhanced indexing capabilities and support functions enabled by new technology.

Regardless of whether user assistance is provided by the public or the private sector, however, the public often experiences mixed results. In terms of private sector WWW and Internet locator and search engine services, many such providers rank websites based on special or exclusive—and sometimes economic—agreements with website purveyors or on how frequently websites are requested and successfully found by users. Government agencies are unlikely to enter—and under 44 U.S.C. 3506(d), executive branch agencies are statutorily prohibited from entering—into special agreements with the private sector. More importantly, if the public is not aware that an agency has placed a site on the web or added new information sources to the site, it is unlikely that it will be ranked highly on a private sector service due to a large number of hits.

Problems also exist in regard to government locator services. GPO Access, for example, contains a broad array of links to federal government information. Yet in many instances, GPO must on its own seek out these online resources in order to assure that the general public is aware of them. Similar problems plague the Library of Congress' Thomas system in its collection of congressional information, and NTIS' FedWorld in its efforts to collect federal scientific and technical information. The judicial branch has proven particularly problematic in terms of providing locator services of even the most basic nature. This is due primarily to the lack of a defined and implemented program for posting opinions and court decisions online.

Specialized government search and locator services run by private or non-profit sector entities have even greater difficulty in keeping up with new federal information sources provided online. Unlike the Government Printing Office or the Library of Congress, private sector enjoys no special relationship, nor has it been able to rely on a legal or regulatory mandates, to assure that they are kept informed of new government information services. Two areas of user assistance in which the private sector tends to excel for those who purchase the services are in providing personal interfaces and in maintaining quality search and retrieval mechanisms. They have likewise been more effective in developing and providing summary source information, including special indexing and abstracting services.

The Federal government has also been somewhat successful in the provision of search and retrieval capabilities to assist users once they have gained access to a website. However, depending on how the agency has organized the information provided through the website, the public can sometimes encounter difficulties in locating specific data—unless they are already well-versed in the technologies of the web or unless they have been able to identify specific parameters to help narrow their search (e.g., the date of a notice; the precise name or public law number of a statute or court decision; or the date or number of a regulation implementing a statute).

The inevitable limitations on availability of government resources, however, demand that the government should undertake only the most necessary user assistance activities and need not duplicate or adopt all types of services that private sector and library providers offer to their customers and patrons. Cost and unmet public needs will always be major factors in the evaluation by government agencies of what user assistance services to provide. In addition, although the government has a general mandate primary responsibility to make widely available the information it creates and maintains, it also has a responsibility to encourage the development of alternative sources for government information, including online sources—whether private or non-profit in origin. Therefore,

regardless of what services it develops, government must make them available to the public at large—including private and non-profit sector providers—at little or no cost.

Recommendations of Working Group 4

- The Federal government must take more positive steps to establish its own locator and search engine capabilities. Centralized authority for government dissemination activities should be established within each branch of government. Regardless of whether such central authorities are established, agencies across all three branches of government should cooperate to set standards for agencies, particularly in the areas of locator and search engine functionality and search and retrieval technologies.

- Guidelines for how Federal Government websites are organized, the search and retrieval mechanisms used by those sites, and links to other sources should be standardized, to the extent possible given issues involving constitutional separation of powers. Consistency in locator service and search and retrieval functionalities within each branch may best be achieved by establishing some sort of central coordinating or oversight body.

- In terms of specific statutory reforms, the Working Group recommends:

- Reforming Title 44 by strengthening or adding enforcement provisions to assure agency compliance with dissemination and access activities, including: (1) the Paperwork Reduction Act of 1995 ("PRA")—particularly those provisions contained in 44 U.S.C. 3506(d) and the legislative history accompanying them; and (2) provisions governing the indexing of government documents (44 U.S.C. 1710 & 1711) and the depository library program (44 U.S.C. 1902 & 1903). In addition, provisions of 44 U.S.C. 3506(d) should be extended to apply to the legislative and judicial branches of government as well.

Some issues that need to be addressed in regard to statutory reform include:

a. Any constitutional issues that must be considered.

b. Ability of the private sector and libraries to either gain or be able to maintain access to information from all branches of government to assist the American public in finding and using information sources.

Working Group 5—Channels of Distribution

General Discussion

Changes in technology have resulted in extraordinary changes in how information is created, stored, indexed, accessed, and thought about. The Federal government provides increasing amounts of information in electronic formats—particularly the WWW and the Internet. As with all government information activities, establishing distribution channels and maintaining access to them should have as its primary focus meeting the needs of the American public, including the private sector and libraries that act as further distribution channels.

Currently, the laws for the provision of electronic information to programs such as the FDLP or NTIS, or even NARA, are honored more in the breech than in fact. There are no standards governing the manner in which even Federal executive branch agencies select and maintain distribution channels for the information they provide electronically. The lack of uniform means of dissemination—and therefore easily recognizable and useable means of access for the public—is also applicable to legislative and judicial branch activities. Likewise, few if any mechanisms are in place to encourage

Federal government agencies to assess public needs and then adjust their policies and practices to meet those needs in the face of limited resources.

Many programs do exist that serve as portals for a wide variety of government information. GPO Access, NTIS FedWorld and the GSA FirstGov project are perhaps the most familiar examples of these types of portal activities undertaken by the Federal government. However, as has been noted by other Working Groups, none of these websites can be considered comprehensive. The public—including re-disseminators of government information—must often access several Federal government websites to find the information they seek.

Some fundamental issues to be considered are: (1) whether the Federal government should create and maintain one central point of access for all government information; (2) how a central access point would facilitate or hinder the ability of the American public to find and use government information more efficiently; and (3) whether the government should undertake development of new distribution channels independently, in partnership with the private sector and libraries, or leave such activity generally to the private sector and libraries.

Recommendations of Working Group 5

- Coordination among Federal agency distribution channels for government information is necessary. In order to encourage this development, it may be necessary for Congress to statutorily mandate it.

- It is unlikely that any one channel of distribution can meet the American public's need and desire to find and use government information efficiently and effectively. Therefore, agencies should work together, and cooperate across the three branches of government, to establish a number of central and specialized distribution channels or portals. Agencies should also work together to facilitate both centralized and inter-agency distribution channels.

- Federal agencies should cooperate with private sector and library providers to enhance access points for the American public, including consideration of non-exclusive partnerships with private sector and library providers to create and maintain distribution channels.

- Regardless of how many channels are established and what government information is provided through them, the government must continue to assure that access to those channels remains unrestricted, as well as assuring that further dissemination through the channels is available to the American public, including private sector and library organizations.

COMMON THEMES/CONCERNS OF THE WORKING GROUPS

Not all members of Panel 4 agree on specific recommendations of each Working Group. Nevertheless, there is some agreement on certain common themes, concerns and principles that arise from the reports and subsequent discussions of those reports among Panel members. Among the most prevalent of those are:

- The growing trend among Federal government agencies in all three branches of government to provide Federal government information in electronic formats should be encouraged.

- There does appear to be a lack of understanding among Federal government agencies of the impact of this development on the traditional means of disseminating and guaranteeing access to such information, including the roles played by libraries and the private sector.

- Other than Chapters 17 and 19 of Title 44, there is an absence of statutes or regulations providing guidance, particularly to legislative and judicial branch agencies, on policies governing dissemination of and access to government information.

- There is a lack of coordination or direction among agencies in all three branches of government regarding policies and procedures for disseminating and maintaining access to government information sources.

- There is a failure of federal executive branch agencies to adhere to existing laws and regulations governing their information dissemination activities.

DEFINITIONS OF GOVERNMENT/PUBLIC INFORMATION

Many members of Panel 4 expressed serious concerns about the lack of uniformity in the definition of government information to be disseminated or accessible under U.S. law and regulation. The difficulty of trying to define government information was evident already at the time of 1982 Report, prior to the advent of the WWW and the Internet:

> The term "information" was repeatedly used in the Task Force discussed [sic], but it was impossible to arrive at an agreed upon definition. It appeared and was generally understood to refer to the content or symbolic substance of a communication, as separate from the physical form in which the communication occurred. But despite the appearance of a general understanding of the term, it simply eluded specific definition.[82]

Nevertheless, any one statute's or regulation's definition of government information (also sometimes referred to as "public information") affects substantially the roles of both the public and private sectors in providing access to that information. Panel 4 therefore believes it worthwhile to review some of more commonly used definitions.

The two broadest definitions are to be found in the preamble to the *NCLIS Principles of Public Information* and in the provisions of Title 44 of the U.S. Code. The NCLIS preamble reads as follows:

> We define public information as information created, compiled and/or maintained by the Federal Government. We assert that public information is information owned by the people, held in trust by their government, and should be available to the people except where restricted by law.

Chapter 19 of Title 44, dealing with the GPO's Federal Depository Library Program, states simply that "'[g]overnment publication' as used in this chapter, means informational matter which is published as an individual document at Government expense, or as required by law,"[83] and that "[g]overnment publications, except those determined by their issuing components to be required for official use only or for strictly administrative or operational purposes which have no public interest or educational value and publications classified for reasons of national security shall be made available … for public information."[84] Chapter 34 of Title 44—the PRA—also supplies a very broad definition: "the term

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[82] *Public Sector/Private Sector Interaction in Providing Information Services*, 2000 edition, page 81.
[83] 44 U.S.C 1901.
[84] 44 U.S.C. 1902.

'public information' means any information, regardless of form or format, that an agency discloses, disseminates, or makes available to the public."85

In terms of existing Federal government regulations, Circular A-130, promulgated by the Office of Management and Budget, governing executive branch agency information dissemination practices, provides the following definition of government information:

a.   The term "government information" means information created, collected, processed, disseminated, or disposed of by or for the Federal Government.

b.   The term "government publication" means information which is published as an individual document at government expense, or as required by law. (44 U.S.C. 1901).

c.   The term "information" means any communication or representation of knowledge such as facts, data, or opinions in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual forms.

d.   The term "information dissemination product" means any book, paper, map, machine-readable material, audiovisual production, or other documentary material, regardless of physical form or characteristic, disseminated by an agency to the public.[86]

The focus of Panel 4's discussions was the tangible or electronic information products distributed or readily accessible to the public. Nevertheless, the Panel recognized that records of government accessible under the Freedom of Information Act ("FOIA") also can affect further dissemination and access, since once made available, this information can be redisseminated without restriction. Federal government executive branch information subject to disclosure under FOIA is defined as follows:

> Each agency, in accordance with published rules, shall make available for public inspection and copying
>> (A) final opinions, including concurring and dissenting opinions, as well as orders, made in the adjudication of cases;
>> (B) those statements of policy and interpretations which have been adopted by the agency and are not published in the Federal Register;
>> (C) administrative staff manuals and instructions to staff that affect a member of the public;
>> (D) copies of all records, regardless of form or format, which have been released to any person under paragraph (3) and which, because of the nature of their subject matter, the agency determines have become or are likely to become the subject of subsequent requests for substantially the same records; and
>> (E) a general index of the records referred to under subparagraph (D).[87]

Nevertheless, FOIA recognizes that agencies can withhold certain types of information in their possession. As explained in the House Report accompanying the *Electronic Freedom of Information Amendments of 1996*:

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[85] 44 U.S.C. 3502(12).

[86] OMB Circular A-130, Transmittal Memorandum 3 (February 8, 1996). OMB makes special note that even these general governing definitions are subject to modification by other existing law, including FOIA, the Privacy Act of 1974 and "appropriate national security directives." It is also important to note that the OMB Circular A-130 definitions are the most recently promulgated and were issued after broad dissemination of various drafts and receipt of public comments from the American public, including a wide variety of private sector and library providers of government information.

[87] 5 U.S.C. 552(a)(2).

The nine exemption categories are listed below:

- Information that is classified for national defense or foreign policy purposes;

- Information that relates solely to an agency's internal personnel rules and practices;

- Information that has been clearly exempted under other laws.

- Confidential business information, such as trade secrets;

- Internal government deliberative communications about a decision before an announcement;

- Information about an individual that, if disclosed, would cause a clearly unwarranted invasion of personal privacy;

- Law enforcement records, particularly of ongoing investigations;

- Information concerning bank supervision;

- Geological and geophysical information, such as maps.[88]

Time limitations have not provided Panel 4 an opportunity to fully review these statutory and regulatory definitions of government or public information, other than to note their existence and variances. It may not be possible to craft one definition for all government information dissemination and access issues. Indeed, the 1982 Report acknowledged as much.[89]

Nevertheless, it may be worth more study to determine whether it is necessary to establish a new, uniform definition to guide Federal government agencies in all branches of government, so that they can better determine priorities for disseminating the broad array of information under their control.

REVIEW OF NCLIS PRINCIPLES

Panel 4 remained cognizant of the 1982 Report, and some Panel members felt that this report should highlight those principles, as well as the summary of the roles played by the government, the private sector and the libraries in assuring broad public access to government information. Others felt that similar, subsequent statements by NCLIS and other organizations were deserving of note, as well. The limited time available to the Panel precluded thorough discussion and consideration of these principles, although there was general recognition that the government has a fundamental responsibility for dissemination of and access to government information in the first instance, supplemented by private sector value added dissemination and access.

The 1982 Report enunciated six fundamental principles:

- *Principle 1.* The Federal government should take a leadership role in creating a framework which would facilitate the development and foster the use of information products and services.

- Principle 2. *The Federal government should establish and enforce policies and procedures that encourage, and do not discourage, investment by the private sector in the development and use of information products and services.*

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[88] House Report 104-795, 2nd Session, 104th Congress, citing provisions of 5 U.S.C. §552(b).
[89] *Public Sector/Private Sector Interaction in Providing Information Services*, 2000 edition, page 33 and following.

- *Principle 3.* The Federal government should not provide information products and services in commerce except when there are compelling reasons to do so, and then only when it protects the private sector's every opportunity to assume the function(s) commercially.

- Principle 4. *The Federal government, when it uses, reproduces, or distributes information available from the private sector as part of an information resource, product, or service, must assure that the property rights of the private sector sources are adequately protected.*

- Principle 5. *The Federal government should make governmentally distributable information openly available in readily reproducible form, without any constraints on subsequent use.*

- Principle 6. *The Federal government should set pricing policies for distributing information products and services that reflect the true cost of access and/or reproduction, any specific prices to be subject to review by an independent authority.*

In terms of the roles of the three primary sectors involved in disseminating Federal government information, the 1982 Report stated the following:[90]

> Role of Private Enterprise.
>
> The kinds of things that the private sector can do most effectively are those which respond most directly and immediately to the needs of the marketplace and thus to the consumer:
> - Marketing and active distribution
> - Re-packaging to meet specific needs
> - Providing speed and flexibility of response
> - Reacting to new situations with minimal delay
> - Anticipating and assessing potential needs
> - Creating new information products and services
> - Injecting private investment funds to meet the opportunities for growth….
>
> Role of Libraries.
>
> The kinds of things that libraries can provide, because of their nature and the history of their development, are the following:
> - Assure the preservation of the record
> - Provide points of access to information resources, products, and services
> - Provide the "safety valve" for information access for society, especially so that "ability to pay" does not prevent persons from getting access to information they need
> - Provide means for distribution, on a less active basis than would be provided by the entrepreneur
> - Provide the staff for general information service, in contrast to the specialized information service provided by the entrepreneur….
>
> Role of Government.
>
> The kinds of things that government can provide are the following:
> - Assure that needs are met that are regarded as important by the society as a whole even though they may not be served by the entrepreneur.

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[90] *Public Sector/Private Sector Interaction in Providing Information Services*, 2000 edition, page 24 and following.

- Provide capital investment in information resources that are beyond the capacity of private investment.
- Provide for availability of information in areas, exemplified by the national census, for which it has specific responsibilities.[91]

NCLIS adopted a later iteration of basic principles for public access to Federal government information on June 29, 1990 and republished for comment in the June 9, 1995 *Federal Register:*[92]

- *Principle 1.* The public has the right of access to public information.

- *Principle 2.* The federal government should guarantee the integrity and preservation of pubic information, regardless of its format.

- *Principle 3.* The federal government should guarantee the dissemination, reproduction, and redistribution of public information.

- *Principle 4.* The federal government should safeguard the privacy of persons who use or request information, as well as persons about whom information exists in government records.

- *Principle 5.* The federal government should ensure a wide diversity of sources of access, private as well as governmental, to public information.

- *Principle 6.* The federal government should not allow cost to obstruct the people's access to public access.

- *Principle 7.* The federal government should ensure that information about government information is easily available and in a single index accessible in a variety of formats.

- *Principle 8.* The federal government should guarantee the public's access to public information, regardless of where they live and work, through national networks and programs like the [Federal] Depository Library Program.

Although they were not discussed in depth, many Panel members believe the principles enunciated in the 1982 Report remain generally viable. The later principles developed by NCLIS complement the 1982 principles. In addition, many Panel 4 members believe that the 1982 Report's summary of the traditional roles of private enterprise, libraries and government in disseminating and providing access to government information remain valid in the electronic information marketplace, while at the same time recognizing that those roles—particularly the dissemination and recognizing that those roles—particularly the dissemination and access activities of government and libraries—are evolving as electronic commerce increases and may need to be reviewed. Nevertheless, the Panel agreed that the Federal government should strive to encourage that a diversity of sources for government information are maintained, in order to assure that each sector can maximize its resources and capabilities to assure broad access by the American public to government information.

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[91] It should be noted that the 1982 Report also contained statements explaining the view of some members of the NCLIS Task Force on the need for a more active role of direct government intervention in the marketplace. The 1982 Report mentions specifically the following possible activities: (1) changing incentives so that the forces of the marketplace will fill the needs; (2) providing subsidies to producers or consumers; (3) directly intervening in the marketplace, and (4) providing products and/or services in commerce as a government activity. However, the 1982 Report seems clearly to reject that model. *See: 1982 Report Revised, pp. 56 ff.* Subsequently, Congress also determined – in enacting the PRA – that the government should take a more limited role in the commercial marketplace. *See: 44 U.S.C. §35065(d).*

[92] U.S. National Commission on Libraries and Information Science. *Principles of Public Information;* adopted June 29, 1990, http://www.nclis.gov/info/pripubin.html. They were published in the *Federal Register* on December 11, 1990, page 50899-50900, Volume 55, Number 238.

RECOMMENDATIONS

Panel 4 has considered a number of specific issues relating to public-private sector partnership relating to the dissemination of and access to government information in an era where the American public is increasingly demanding and using information in electronic formats. The Panel focused on not only current statutory and regulatory provisions government Federal agency activities, but also on the practices and policies of agencies that have developed in relation to—or outside of—current law and regulations.

As noted previously, the Panel's discussions of issues occurred against the backdrop of the 1982 Report—including the principles and sector roles discussed as part of that report—and in the context of current definitions of government/public information. Although the Panel did not have an opportunity to analyze in detail the 1982 Report or current statutory and regulatory definitions of government information, Panel 4 does believe that any consideration of statutory or regulatory changes affecting access to Federal government information must be undertaken with special attention to (1) such general principles; (2) the roles of the various sectors in disseminating and maintaining access to government information, (3) and a clearer enunciation of what constitutes Federal government information.

There remains tension between private sector and library providers of government information. Many private sector representatives on Panel 4 cautioned that government must restrain its activities, particularly if taxpayer funding is used to create products and services that already exist in the marketplace. Some library community representatives stressed that the government has an obligation to maintain no-fee public access to all government information made available to the public.

In terms of specific actions on the part of Congress and Federal government agencies, Panel 4 recommends:

- Assure that the Federal government continues to have primary responsibility for the entire life cycle of electronic government information, including the dissemination and permanent public access to government information, without restrictions, to the American public.

- Recognize that the private sector and libraries continue to play a crucial role in enhancing dissemination of and access to government information, and that government has an affirmative obligation to facilitate a diversity of sources for disseminating and gaining access to government information.

- Consider applying provisions—or provisions like those—contained in 44 U.S.C. 3506(d) to legislative and judicial branch agencies [see Appendix A].

- Create realistic, statutory enforcement provisions to assure that agencies abide by requirements to disseminate and provide access to government information. Such enforcement mechanisms are important regardless of whether the requirement is a more general one, e.g., to provide such information to all members of the public, or more specific, e.g., the provisions for cataloging, indexing and no-fee public access to Federal government information through the FDLP [see Appendix B]. Agencies that run afoul of the law should be subject to enforcement mechanisms with real consequences.

- Establish effective means for consultation and cooperation among the three branches of government to assure the greatest extent possible that all Federal government information is disseminated, and access to it maintained, in a manner most effective to meet the needs of the American public. Coordination of policies and procedures across the executive, legislative and judicial branches is crucial. A commitment by agency officials in each branch to share information

and ideas would be advantageous to all sectors involved in disseminating and providing access to government information.

One area where Panel 4 could not reach agreement is in regard to creating central government information policy authorities within each branch of government, or for the government as a whole. Clearly, Congress would have to mandate such authorities.

Some members favored creation of central policy authorities. The central authority would provide clear direction to agencies; assure sharing of procedures, technologies and new standards; and provide the American public—including private sector and libraries—to share their knowledge and concerns easily with government officials who establish and oversee Federal government information policies.

Other members expressed concerns about creating central authorities. For some, there was philosophical dislike for centralized government functions. Other members pointed out the practical problems with establishing such a central authority. Concerns included the extent to which agencies would resist coming under the authority of such a centralized power; whether a central authority could be flexible enough to review and alter regulations and standards in the rapidly evolving Internet environment; and generally whether any one governmental body could obtain the funding and resources necessary to adequately advise and oversee agency activities.

In the end, Panel members agree on the need for greater coordination and oversight of information policies undertaken by all three branches of government. However, Panel 4 cannot report a unanimous recommendation that Congress create one or more central authorities to oversee Federal government information policies.

PANEL 4, APPENDIX A: PROVISIONS FROM THE U.S. CODE, TITLE 44, SECTION 3506(D)

Statutory Provisions of 44 U.S.C. 3506(d), the *Paperwork Reduction Act of 1995*:

(d) With respect to information dissemination, each agency shall

(1) ensure that the public has timely and equitable access to the agency's public information, including ensuring such access through -
(A) encouraging a diversity of public and private sources for information based on government public information;
(B) in cases in which the agency provides public information maintained in electronic format, providing timely and equitable access to the underlying data (in whole or in part); and
(C) agency dissemination of public information in an efficient, effective, and economical manner;

(2) regularly solicit and consider public input on the agency's information dissemination activities;

(3) provide adequate notice when initiating, substantially modifying, or terminating significant information dissemination products; and

(4) not, except where specifically authorized by statute -
    (A) establish an exclusive, restricted, or other distribution arrangement that interferes with timely and equitable availability of public information to the public;
    (B) restrict or regulate the use, resale, or redissemination of public information by the public;
    (C) charge fees or royalties for resale or redissemination of public information; or
    (D) establish user fees for public information that exceed the cost of dissemination.

PANEL 4, APPENDIX B: SELECTED STATUTORY PROVISIONS FROM THE U.S. CODE, TITLE 44, CHAPTERS 17 AND 19

Selected Statutory Provisions from Title 44, Chapters 17 and 19 of the U.S. Code:

Section 1710. Index of documents: number and distribution

The Superintendent of Documents, at the close of each regular session of Congress, shall prepare and publish a comprehensive index of public documents, upon a plan approved by the Joint Committee on Printing. The Public Printer shall, immediately upon its publication, deliver to him a copy of every document printed by the Government Printing Office. The head of each executive department, independent agency and establishment of the Government shall deliver to him a copy of every document issued or published by the department, bureau, or office not confidential in character. He shall also prepare and print in one volume a consolidated index of Congressional documents, and shall index single volumes of documents as the Joint Committee on Printing directs. Two thousand copies each of the comprehensive index and of the consolidated index shall be printed and bound in addition to the usual number, two hundred for the Senate, eight hundred for the House of Representatives and one thousand for distribution by the Superintendent of Documents.

Section 1711. Catalog of Government publications

On the first day of each month the Superintendent of Documents shall prepare a catalog of Government publications which shall show the documents printed during the preceding month, where obtainable, and the price. Two thousand copies of the catalog shall be printed in pamphlet form for distribution.

Section 1901. Definition of Government publication

"Government publication" as used in this chapter, means informational matter which is published as an individual document at Government expense, or as required by law.

Section 1902. Availability of Government publications through Superintendent of Documents; lists of publications not ordered from Government Printing Office

Government publications, except those determined by their issuing components to be required for official use only or for strictly administrative or operational purposes which have no public interest or educational value and publications classified for reasons of national security, shall be made available to depository libraries through the facilities of the Superintendent of Documents for public

information. Each component of the Government shall furnish the Superintendent of Documents a list of such publications it issued during the previous month, that were obtained from sources other than the Government Printing Office.

Section 1903. Distribution of publications to depositories; notice to Government components; cost of printing and binding

Upon request of the Superintendent of Documents, components of the Government ordering the printing of publications shall either increase or decrease the number of copies of publications furnished for distribution to designated depository libraries and State libraries so that the number of copies delivered to the Superintendent of Documents is equal to the number of libraries on the list….

The Superintendent of Documents shall currently inform the components of the Government ordering printing of publications as to the number of copies of their publications required for distribution to depository libraries. The cost of printing and binding those publications distributed to depository libraries obtained elsewhere than from the Government Printing Office, shall be borne by components of the Government responsible for their issuance; those requisitioned from the Government Printing Office shall be charged to appropriations provided the Superintendent of Documents for that purpose.

Section 1911. Free use of Government publications in depositories; disposal of unwanted publications

Depository libraries shall make Government publications available for the free use of the general public, and may dispose of them after retention for five years under section 1912 of this title, if the depository library is served by a regional depository library. Depository libraries not served by a regional depository library, or that are regional depository libraries themselves, shall retain Government publications permanently in either printed form or in microfacsimile form, except superseded publications or those issued later in bound form which may be discarded as authorized by the Superintendent of Documents.

PANEL 4, APPENDIX C: MEMBERS OF PANEL 4

Wayne Kelley, Panel 4 Chairman, formerly Superintendent of Documents, U.S. Government Printing Office (GPO) and private sector publisher

Mary Alice Baish, American Association of Law Libraries (AALL)

Francis Buckley, U.S. Government Printing Office (GPO)

Anne Caputo, Special Libraries Association (SLA)

Blane Dessy, U.S. Department of Justice

Dan Duncan, consultant, formerly with the Information Industry Association (IIA) and the Software and Information Industry Association (SIIA)

Wally Finch, National Technical Information Service (NTIS)

Neal Gregory, consultant

Donald Hagen, Bernan Associates

Richard Kaser, National Federation of Abstracting and Information Services (NFAIS)

Nancy Kranich, American Library Association (ALA)

David LeDuc, Software and Information Industry Association (SIIA)

Edwin A. Levine, U.S. Environmental Protection Agency (EPA)

Eric Massant, Reed Elsevier Inc.

Peyton Neal, consultant, PRN Associates

James Nelson, State Librarian and Commissioner for Libraries and Archives, Kentucky

Roxanne Williams, formerly U.S. Department of Agriculture

Panel 4 Observers

Lynne Bradley, American Library Association (ALA)

Steve Buckley, Radian Inc.

APPENDIX 27. SURVEY OF SELECTED FEDERAL AGENCY POLICIES, PROGRAMS AND PRACTICES RELATING TO PUBLIC INFORMATION DISSEMINATION

> In early September 2000, NCLIS conducted an informal survey of 38 federal agencies to determine their policies, programs and practices relating to public information dissemination. The survey instrument and the survey results are provided below.

NCLIS SELECTED AGENCY SURVEY SAMPLING OF PUBLIC INFORMATION DISSEMINATION POLICIES AND PROGRAMS[93]

Conducted by F. Woody Horton and Sarah T. Kadec, NCLIS Consultants

SURVEY INSTRUMENT

As you may know, at the request of several committees of the Congress, NCLIS is engaged in a major study of the Federal Government's public information dissemination laws, policies, programs, and practices. Four panels have been at work for a month, and a board of experts is writing various invited papers. NCLIS will make recommendations to the President and the Congress by December 15th for reforms to strengthen this area. In case you are unfamiliar with the study's background, goals and objectives, structure, and other particulars, you may want to look at the NCLIS study web page at http://www.nclis.gov/govt/assess/assess.html.

In addition to the work of our four panels and board of experts, I believe our study's co-coordinator, Sarah T. Kadec, has already telephoned you to discuss one important additional component of that study, a sampling of selected agency public information dissemination policies and programs.

To that end, we have prepared a list of six questions. If you provide a "yes" answer to any of them, kindly furnish us with a hard copy of the material (or call our attention to the web site addresses containing the information in electronic form).

If you have any questions, please call me at (202) 606-9200, or Sarah at (757) 259-0358. Please accept our grateful appreciation in advance for your assistance!

1. Does your department/agency have published policies on government information dissemination to the public, and/or programs which implement those policies, especially for information products being made available on agency web sites in electronic formats and mediums? Short of a formal policy, is there a letter or other communication from a senior official that mandates the discontinuance of publishing an information product in paper form, in favor of utilizing electronic mediums and formats?

2. Have your individual bureau-level units established their own policies and/or implementing programs? If so, what are they?

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[93] Available at http://www.nclis.gov/govt/assess/assess.appen27.pdf.

3. Does your department/agency have guidelines for adding new, changing existing, or deleting "old" information available to the public from its websites? Does this guidance include instructions on when to take information down, make a backup copy for permanent retention and availability, and archive an official record copy?

4. Is there a reasonably comprehensive and authoritative listing of the department/agency's electronic public information products which is periodically updated?

5. Which of your major information products/resources and/or most important information dissemination policies, are mandated by Congress or federal statute? Which ones were put in place by the President, your department/agency head, or a senior program official?

6. Do you have any recommendations for strengthening existing laws, policies, programs, and practices relevant to the dissemination of, and access to, your agency's publicly available information? If so, what are they?

We would much appreciate receiving this information by September 25th, or even earlier if possible, because of our very short study deadlines.

F. Woody Horton
NCLIS Consultant
[via e-mail from whorton@nclis.gov]

SURVEY RESPONSES FROM AGENCIES

Introductory Note

Thirty-eight federal agencies were surveyed during the study to ascertain:

*   The level of information dissemination in electronic form.

*   Use of web sites and the management of information placed on the web.

*   The policies that have been issued relative to information dissemination, particularly in electronic form.

*   Whether these policies resulted from statutory, Executive Office, or Departmental requirements; or Agency or Bureau level program initiatives.

*   If a comprehensive listing of publicly available electronic information products existed.

*   Whether there were suggestions/recommendations for NCLIS' consideration in preparing the report.

Twelve agencies responded to the survey. The responding agencies are as follows:

1. Department of Commerce (DOC), Bureau of the Census

2. Department of Defense (DOD)

3. Department of Health and Human Services (HHS), National Institutes of Health (NIH)

4. Department of Health and Human Services (HHS), Indian Health Service (IHS)

5. Department of the Interior (DOI), Geological Survey (USGS)

6. Department of Labor (DOL)

7. Department of the Treasury

8. Department of Veterans Affairs (VA)

9. Environmental Protection Agency (EPA)

10. Federal Communications Commission (FCC)

11. Smithsonian Institution

12. Administrative Office of the United States Courts (AOUSC)

When providing the detailed responses from the agencies, the survey question number is identified, but the survey question is not repeated.

Summary of Responses

<u>Department of Commerce (DOC), Bureau of the Census</u>. Authorizing legislation requires collection and publication of statistics and protects the confidentiality of the Bureau's information. The Bureau also follows OMB Circular A-130 in the collection and dissemination of its information. It moved to electronic media as the principal means of dissemination in 1995 and has issued guidelines and standards for use of the Internet. These are updated as needed. Individual sub-organizational units do not issue their own guidelines.

General policy is to retain all information on the web though a survey is underway to determine if any superceded information should be replaced. Old information may be transferred to a GPO site under a program currently being discussed. Data products (CD-ROM and tapes) are sent to NARA.

The Bureau maintains a complete catalog of its products on the web, updated daily. The *Monthly Product Announcement* is issued in print, e-mail and on the web, though the printed version will cease in January 2001.

Census's major concern is ensuring that all data remains accessible, regardless of media. It is also concerned with the development of new technologies for the future.

<u>Department of Defense (DOD)</u>. The DOD has a number of information policies governing information dissemination, several of them related to information in electronic format; many related to national security concerns and clearance requirements; and several pertaining to the management and availability of records in printed or electronic form. The use of the World Wide Web is encouraged "to convey information quickly and efficiently on a broad range of topics relating to its activities, objectives, policies, and program". The individual Services and agencies have issued policies to meet their needs, consistent with DOD-wide guidance.

The "Web Site Administration Policies and Procedures" states that information posted on the web be timely and that outdated or superseded information is promptly removed or appropriately archived. All DOD organizations list their official, publicly accessible web sites, web publications, electronic reading room documents, and library resources in the DOD Resource Locator.

<u>Department of Health and Human Services (HHS), National Institutes of Health (NIH)</u>. Maintains an electronic listing of publications available online; no policies other than Department-wide exist or are used in this Division.

<u>Department of Health and Human Services (HHS), Indian Health Service (IHS)</u>. Follows the Department's information dissemination policies, procedures and preferences. Its Records Management Program follows federal statutes, with policy procedures and responsibilities spelled out

in the Agency's Manual, part 5, chapter 15. Records created or received in electronic media must be printed and incorporated in the official file system.

Best practices and guidelines on the Agency web site have been published by the Information Technology support Center Web Team, following HHS guidelines. Any document published electronically must have been first published in hard copy. Guidelines include instructions on adding, changing, and deleting information on the web, particularly on annual updates. Backup copies of all content and documents are archived monthly and maintained, though the Team does not maintain official record copies of electronic information.

Information on the web site is indexed and available in a searchable database; a web site map categorizes information by topic. The web includes news releases, fact sheets, health data information publications and reports, program specific announcements and guidance, and information about agency programs and leadership; additional documents may be electronic, especially since the issuance of the E-FOIA.

The Electronic Freedom of Information page (in reading room), Kids site, Privacy Policy Page, Disclaimer Page, Frequently Asked Questions, and points of contact are mandated by Congress in federal statutes.

Department of the Interior (DOI), Geological Survey (USGS). Policies follow the DOI and USGS manual guidance on disseminating information to the public. Authority is delegated to the lowest level possible, but policies related to electronic information are generally at the Division level. USGS has developed internal guidelines for web publication and for use of the Visual Identify on information products.

The Biological Resources, Geology, National Mapping, and Water Resources Divisions have outlined publication procedures in internal memoranda. One Division requires all new formal publications be on the web; some publications series are digital only. Others are putting earlier general interest publications on the web to increase their availability and reduce printing and distribution costs.

The Geologic Division guidelines and policies state that all information products will be technically sound and scientifically credible, effectively convey the intended message to target audience, have required authorization and sufficient funding, will be archived for long-term preservation, and will be produced in electronic form at a minimum (with printed products from these electronic materials optional).

The Biologic Resources Division's policies require inclusion of metadata in the National Biological Information Infrastructure, peer review, and publishing in the BRD series. Products are to be distributed to NTIS and DTIC to ensure broad availability.

The National Mapping Division (responsible for much of the reproduction and dissemination of USGS products) has policies regarding free distribution of maps and map indexes, implementation and maintenance of the Spatial Data Transfer Standard (format of geospatial data available for free downloading from the Internet), product delivery to government partners and geospatial metadata product information.

The Earth Science Information Centers operate the nationwide information and sales service for all maps and earth science publications.

A recent Bureau-wide policy requires a disposition schedule be created for all publications; but not how long it should be on the web, since that is determined by the author of the web page. Each Division and smaller unit maintains lists of electronic information products; efforts are underway to create a standard list incorporating all publishing units.

The USGS formal series publications (professional papers, bulletins, various map series, etc.) are authorized by Congress; dissemination complies with the American Technology Preeminence Act; printed products are distributed to the Federal Depository Libraries in compliance with Title 44; and the National Geographic Mapping Act mandates a database with a map catalog linking to maps published by USGS and its partner, the Association of American State Geologists. Executive Order 12906 requires metadata be included in the MBII or NDSF. OMB Circular A-130 provides guidance on information dissemination.

Department of Labor (DOL). The DOL follows government-wide information dissemination policies such as those included in the Attorney General's Manual on the Administrative Procedure Act, Section III, Public Information. The DOL's rules governing Internet services were published in the Federal Register (29 CFR, pt. 70 et seq.) in compliance with the Manual. The Department follows requirements in the FOIA, E-FOIA, Privacy Act and OMB Circular A-130. A number of Secretary's orders and internal memorandum and the Department of Labor Manual Series (DLMS) implement federal laws and departmental policy. A Department "Public Web Site Content Clearance Process" calls for the development of an "Internet Clearance and Operating Procedures" and this is underway.

The Department's Manual designates the Office of Public Affairs as the information dissemination policy maker, and all agencies and bureaus recognize this and incorporate it in any of their individual agency/bureau policies. The Bureau of Labor Statistics, Mine Safety and Health Administration, Office of the Assistant Secretary for Policy (ASP) and Office of the Chief Financial Officer (OCFO) have policies or they are in draft; most have web sites following Departmental Policy.

All information placed on the main DOL or individual agency web sites receives appropriate review and clearance prior to issuance, including timeliness and accuracy, need for coordination with other agencies and appropriate levels of clearance.

There is no Department-wide listing of publications issued electronically; these lists exist at the agency/bureau level.

Department of the Treasury. Treasury follows government-wide regulations on information dissemination such as the Paperwork Reduction Act (PRA) to implement the Government Information Locator System (GILS). The Chief Information Officer (CIO) has created an information management program office with responsibility for information dissemination policy. Policies will be developed, with assistance from the General Counsel, to carry out requirements of the PRA/GILS, the E-FOIA and the Treasury Internet policy site guidelines. Individual agencies do not have dissemination policies, though the Financial Management Service (FMS) has developed a style guide.

The Department and Bureaus have developed guidelines for managing information on the web sites. FMS has specific guidelines on keeping the FMS web site current. New items must be approved at the Director level, with a signed Memorandum of Understanding. All content providers must review and certify the accuracy of their data on a quarterly schedule. A CD of the FMS web site is produced monthly for archival purposes. The various agencies and bureaus maintain updated listings of their electronic public information products on their web sites.

The E-FOIA and GILS mandate the FOIA reading room by the PRA. The Assistant Secretary for Management/CFO and the Deputy Assistant Secretary for Information Systems/CIO established the Treasury web site; the head of the bureau and the CIO authorized bureau web sites.

Department of Veterans Affairs (VA). The Department has issued policies to implement the Freedom of Information Act and dissemination of government information, and is in the process of drafting an Internet/Intranet policy. Individual bureaus have not established separate policies.

 There is no updated, comprehensive and authoritative listing of VA electronic information; there is an index to information in its Electronic Reading Room and an AltaVista search of pages on the web updated in 1994. The Veteran's Benefit Administration (BA) maintains a Web-Automated Reference Materials System (WARMS) providing Internet access to VBA manuals, directives, circulars, letters, Title 38 CFR, and other materials to Veterans Service Organizations (VSO), educational institutions and the general public. The WARMS information is also available free on CD-ROM (ARMS-CD), using a different search engine. Links on the WARMS web page permits the user to download the free Microsoft viewer software to display the retrieved documents. Feedback to the ARMS mailbox is encouraged on the web site.

Environmental Protection Agency (EPA). The Environmental Protection Agency (EPA)'s Information Resources Management Policy Manual (Directive 2100) includes the "Policy on Public Access to EPA Information" in Chapter 21; the "Web Guide" includes policies and informal guidelines in the use of the web; and a memorandum has been issued on "cookies". The Agency is developing policies regarding Disabled Access, Limited English Proficiency (LEP), and the use of Non-EPA servers; as well as a strategy providing direction for the various components of public access.

EPA believes that its users need information in paper as well as electronic forms. A memorandum "Public Availability of EPA Information Via Internet" issued September 23, 1996 commits the Agency to using electronic formats, but doesn't preclude the issuance of information in paper.

EPA's "Web Guide" provides guidelines for adding, changing or deleting information from a web site. When the data owner asks to place information on the web, he or she must maintain and be responsible for the information. The Agency's "Online Rules of Publishing" addresses recordkeeping, permanent retention and availability, and archiving; recordkeeping requirements must be established for records created or received. These areas will be addressed further.

EPA's public information products on the Internet are on each Program Office's web site. In addition the Government Information Locator System (GILS) is being maintained through GPO and on EPA's web site. EPA, in cooperation with the Environmental Council of the States (ECOS) is working on an Information Products Bulletin (IPB) that will provide a comprehensive listing of both EPA and the states significant information products under development or modification. The IPB, seen as a means of improving the public's access to information about environmental conditions and trends, will be released in March 2001 and updated every six months.

Various Agency legislation, in most instances Program specific, mandates information dissemination to the public. "Protecting Personal Privacy on EPA's Public Access Web Site: Cookies Policy" was issued by the Office of Environmental Information. It provides guidance for EPA Programs on protecting the privacy of citizens using EPA web sites.

EPA's authorities stem from a number of different statutes; integrating the data and information from these programs is a major challenge. The Office of Environmental Information was created to

coordinate the Program Offices activities in collecting quality environmental information and making it available to the public.

Federal Communications Commission (FCC). The FCC has several written policies on access and dissemination of information to the public and several NPRMS and reports and orders on electronic filing initiatives. Without a written policy, notices, news releases, reports and Commission orders back to 1994 are included on the web site as a means of quickly disseminating information. Individual bureaus, including Wireless (on using the Universal Licensing Systems (ULS)), Mass Media, and Consumer Information Bureau (Electronic Comment Filing System (ECFS)) also have written policies.

The web site has never been purged, though individual documents have been replaced if incorrect or a substantially wrong document has been posted. FCC currently provides NARA the paper original for records retention purposes; plans call for submitting Computer Output Microfilm/Microfiche (COM) instead of paper (NARA cannot take CD/ROM).

GILS has not been kept up to date. There are two search applications using numbers and subjects to check the web site for relevant documents available over the Internet.

Congress requires the FCC Auctions activities; the Chairmen have been responsible for the push to use the Internet for electronic filing and dissemination.

Smithsonian Institution. The Smithsonian is a trust established by Congress, thus it has no policies on government information dissemination. However its mission to increase and diffuse knowledge results in publication of research results, scholarly and popular pubs, its exhibitions and public programs, issuances of the Office of Public Affairs and a web site (www.si.edu). It responds to requests from the public, though exempt from the FOIA. The web site contains a listing of the Smithsonian's electronic publications.

Administrative Office of the United States Courts (AOUSC). The AOUSC provides useful and timely information to the public through the AO's Internet site (www.uscourts.gov) , publications, news releases, phone and fax. Most of the frequently requested publications are available through the web site, which is also a gateway to federal court information nationwide as well as many other court-related sites and to the Public Access to Court Electronic Records (PACER) system. Proposed amendments to rules, information on meetings of the Judicial Conference Committees, requests for proposals are included on the web site.

The AO's Office of Public Affairs (OPAF) manages the Internet site and is the point of contact for the news media. It regularly updates the materials and publications on the web site; time-sensitive information like job announcements and request for comments on proposed rules of practice and procedure are removed automatically after their closing dates.

The AO's *Catalog of Administrative Office Publications* includes all items produced by, and currently available from, the AOUSC. Those in electronic format are noted. The Internet site's search capabilities provide for easy identification of public information products; the site also indicates which publications are required by law.

The Rules Enabling Act (28 USC, paragraphs 2071-2077) requires the wide public dissemination of proposed changes to the rules of practice and procedures used by lawyers practicing in federal court.

Proposed amendments were published on the web site for the first time in 1999; comments on the proposed amendments have been received by e-mail to the site.

Detailed Responses[94]

Department of Commerce (DOC), Bureau of the Census

The responses below report on activities at the U.S. Census Bureau and do not represent the entire Department of Commerce.

1. First and foremost, the Census Bureau is bound by its authorizing legislation, Title 13, United States Code (U.S.C.). Title 13, Chapters 3 and 5 specifically deal with the collection and publication of statistics. Chapter 1, Section 9 protects the confidentiality of Census Bureau information, prohibiting "any publication whereby the data furnished by any particular establishment or individual under this title can be identified." For data available for public release, Census Bureau dissemination policies follow OMB Circular A-130, which states that information is a public good and that "because the public disclosure of government information is essential to the operation of a democracy, the management of federal information resources should protect the public's right of access to government information." Most Census Bureau information is available for free through the Internet; often the same information is available in other formats.

2. In 1995 the Census Bureau determined that electronic media would be the principal means of dissemination. Specific written guidelines and/or statements have been released on dissemination, pricing, and roles and responsibilities regarding the Internet. The Department of Commerce Rehabilitation Act guidelines set forth in Departmental Administrative Order 215-10, "Reasonable Accommodation for Disabilities in Employment," implements the 1998 Amendments to the Rehabilitation Act of 1973, as detailed in the Workforce Investment Act of 1998. The Census Bureau's IT Standards establish a consistent look and feel for Census Bureau Internet site and set the standard for easy use and accessibility, consistent with the Americans with Disabilities Act. The Census Bureau is now in the process of developing additional guidelines for the Internet material; the work on these standards is just being initiated at this time.

3. No, [Census has not established its own policies and/or implementing programs].

4. Our general policy is to not remove any information from our Internet site. We are surveying our various divisions to determine if there are instances where information may be superceded and replaced. We are working with the Government Printing Office to move any such "old" information to a GPO website. Copies of data products on tape and CD-ROM are routinely sent to the National Archives and Records Administration.

5. Yes, a catalog of all current Census Bureau products (electronic and otherwise) is maintained on our website and updated daily. See: http://www.census.gov/mp/www/censtore.html. Our Monthly Product Announcement provides a regular listing of new products on a monthly basis. It is available in print, e-mail, and on the web, although the printed version will be discontinued in January 2001.

6. The Census Bureau is mandated by Title 13, U.S.C., to collect and publish information on a variety of topics, including the population and the economy, in accordance with the confidentiality restrictions spelled out in Section 9.

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[94] When providing the detailed responses from the agencies, the survey question number is identified, but the survey question is not repeated.

Other Comments:

One major concern is the need to ensure that all data remain accessible, regardless of deterioration of past and current media and development of new technological changes in the future.

Department of Defense (DOD)

1. There are several Department of Defense policies related to dissemination of government information to the public. The core policy establishing such guidance is:

    - "Principles of Information" which are codified as Enclosure (2) to DoD Directive 5122.5, "Assistant Secretary of Defense for Public Affairs" (http://web7.whs.osd.mil/pdf/d51225p.pdf)

    Additional Departmental guidance that establishes policy and procedures for providing information to the public include:

    - DoD Directive 5230.9, "Clearance of DoD Information for Public Release" (http://www.defenselink.mil/admin/dd5230_9.html)

    - Deputy Secretary of Defense memo, 17 February 1995, "Clearance Procedures for Making Electronic Information Available to the Public" (http://www.defenselink.mil/admin/memo.html)

    - DoD Instruction 5230.29, "Security and Policy Review of DoD Information for Public Release" (http://web7.whs.osd.mil/pdf/i523029p.pdf)

    - Armed Forces Information Service Policy Memorandum, "Electronic Newspaper Policy" (http://www.defenselink.mil/admin/5120_4.html)

    - The "DoD Web Site Administration Policies and Procedures" encourages use of the World Wide Web "to convey information quickly and efficiently on a broad range of topics relating to its activities, objectives, policies and program." It can be found at (http://www.defenselink.mil/admin/dod_web_policy_12071998.html)

    Finally, the Department requires that records be made available electronically in accordance with the requirements of the Freedom of Information Act (FOIA) (5 U.S.C. 522 (a)(2)(A), (B), (C), and (D)) through:

    - DoD Regulation 5400.7-R, "DoD Freedom of Information Act Program" (http://web7.whs.osd.mil/pdf2/54007r(9-98)/p54007r.pdf), paragraph C2.1.2,

    - With respect to DoD electronic business/electronic commerce (EB/EC) efforts, Joint Electronic Commerce Program Office (JECPO), was established under the Defense Reform Initiative to be the focal point for strategic implementation of EB/EC policy within DoD. The web pages for the Joint Electronic Commerce Program Office (JECPO) (http://www.acq.osd.mil/jecpo/) include links to the DoD EB/EC Strategic Plan, Departmental guidance related to EB/EC, and to ongoing EB/EC projects within DoD.

2. The policies identified above are DoD-wide. In addition to those, the Services and Agencies can and have issued policies or programs tailored to their own needs, yet consistent with DoD-wide guidance. Examples of Service and Agency EC/EB efforts can be found via the Department's JECPO webpage identified above under the "DoD EC Partners" link. Web guidance issued and implemented by individual Services and Agencies can be accessed at the following website: (http://www.defenselink.mil/admin/about.html - WebPolicies)

3. The Web Site Administration Policies and Procedures, identified in answer #1 above, focuses on providing guidance on posting information (see Parts II and V). It requires that the information on web sites be timely (see Part I, paragraph 5.5.7) and that outdated or superseded information is promptly removed or appropriately archived (see Part II, paragraph 4.2.3), but does not specify further criteria.

4. All Department of Defense organizations are required to register their official, publicly accessible web sites, web publications, electronic reading room documents, and library sources in the DoD Resource Locator (http://sites.defenselink.mil/). The DoD Resource Locator hosts the DoD implementation of the Government Information Locator Service (GILS), as required by OMB Circular A-130.

5. Mandated by Congress or Statute: FOIA/E-FOIA

   - Mandated by President/OMB: The Department's implementation of GILS, required by OMB circular A-130)

   - Mandated by Department of Defense Policy: Policies related to the use of the World Wide Web, information dissemination, public affairs-related guidance.

   In addition, the DOD's EB/EC efforts are guided by a combination of federal-level and department-level initiatives and guidance.

6. Although we do not have a specific proposal, we wish to note that there is a need to review existing requirements with the objective of strengthening the government's ability to address security and privacy concerns associated with the aggregation of unclassified information made possible and increasingly easy by electronic means such as the World Wide Web. Current statutes, policies and other rules and guidelines for public release of information were developed to serve a paper-based world. Electronic dissemination of information has created an entirely new environment of data mining and rapid aggregation of information that was unforeseen by those rules and requirements. The DOD increasingly is concerned about the risks posed by this aggregation of unclassified information in electronic formats, and while DOD has taken steps to address these issues within the Department by updating its guidance, the government as a whole must address this growing concern.

Department of Health and Human Services (HHS), National Institutes of Health (NIH)

To the very best of our knowledge, the answers to the questions below, as they pertain to the NIH, would be no--with the exception of question number 4. We do maintain an electronic listing of publications available online. They can be found at: http://www.nih.gov/health/consumer/index.htm.

Department of Health and Human Services (HHS), Indian Health Service (IHS)

1. The Indian Health Service (IHS) follows information dissemination policies, procedures, and preferences established by the Department of Health and Human Services (HHS) as well as those that are issued that affect all federal agencies. Unpublished interpretations of these policies are provided to IHS senior officials and staff by various program areas relevant to their particular communication and information dissemination focus: programs such as the Office of Management Support (Division of Information Resources [Information Technology Support Center], Division of Administrative Support [Forms and Records Management], Division of Regulatory and Legal Affairs [Freedom of Information Act and Privacy Act], Office of the Executive Secretariat, and the Office of Management Policy); and the Office of the Director (Public Affairs).

The IHS Records Management Program is governed by the following mandates: The Federal Records Act of 1950, P.L. 754, Chapter 849; The Paperwork Reduction Act, P.L. 96-511; The Paperwork Reduction Reauthorization Act, P.L. 99-500. Using these three statutory authorities as guidance, the IHS has developed policy, procedures, responsibilities, and other elements pertinent to the administration of the IHS Records Management Program. Indian Health Manual Part 5, Chapter 15 "Records Management Program", TN 97-04, is the current policy. This chapter is available at: http://www.ihs.gov/PublicInfo/Publications/IHSManual/Parts_index.html, part 5. Within the current IHM Part 5, Chapter 15, the policy on electronic records is: "Records created or received using electronic media must be printed out in paper form and filed in the official file system." (IHM 5-15.8E)

The IHS Information Technology Support Center Web Team has published best practices and guidelines on the agency web site, based on those of HHS, that define a general set of rules for publishing information on the IHS intranet and internet servers. The best practices and guidelines are available at:
http://home.webteam.ihs.gov/ProductsServices/index.cfm?module=prodserv&client_id=59.

Since the inception of the IHS Internet presence, the general rule has been not to publish any document electronically that has not been published in hard copy before. General web page content must be approved by an Office or Program Official who is, at least, a Division Director.

No, [there is no letter or other communication from a senior official that mandates the discontinuance of publishing an information product in paper form, in favor of utilizing electronic mediums and formats.] The IHS follows the guidance and regulations set forth in the Paperwork Reduction Act and Records Management and Disposition Regulations.

2. No. The IHS has not issued any requirement that forms or information products be exclusively available only electronically.

3. Yes. That guidance is contained in the IHS best practices and guidelines available electronically at: http://home.webteam.ihs.gov/ProductsServices/index.cfm?module=prodserv&client_id=59.

Yes. Guidance, on at least annual updates, is included in the best practices and guidelines for the intranet/Internet. Persons responsible for content are instructed to keep backup copies of all content and documents and to observe any records management guidelines. The ITSC Web Team does not maintain official record copies of electronic information, but archives of all information available on the web site is archived monthly in the event this data is required.

4. All information on the IHS web sites is indexed and contained in a database that is searchable online. The web site also has a site map that categorizes information available by topic. All of the IHS Directives, Circulars, and the IHS Operating Manual are available on-line. In addition, information products that are also of public interest, some of which were developed specifically for public dissemination, are available on-line. Items such as news releases, fact sheets, health data information publications and reports, program specific announcements and guidance, and other information about agency programs and leadership. The IHS web site searchable database represents a reasonably comprehensive and authoritative listing of what is electronically available on the web, but it does not represent what additional IHS information documents may be electronically available. It is reasonable to assume that since the issuance of the Electronic

Freedom of Information Act and the advances and reliance on computer technology, most every IHS document can be provided electronically.

5. Electronic Freedom of Information page (reading room), Kids site, privacy policy page, disclaimer page, frequently asked questions, points of contact.

    Most required information products were implemented before requirements were identified by executive or departmental directive.

6. None. Current laws, policies, programs, and practices are sufficient. Current requirements allow the agency to develop responsive practices to meet the public's interest in obtaining information documents about our agency. Current requirements allow for flexibility and agency discretion to design systems and programs with the goal of information dissemination. Additional requirements are not desired and if proposed they should be carefully evaluated as to the impact on workload and staff capacity to meet additional workloads or burdensome and unreasonable expectations or deadlines.

Department of the Interior, U.S. Geological Survey (USGS)

Overview

The U.S. Geological Survey is mandated through its Organic Act to examine the geological structure, mineral resources, and products of the national domain, and throughout its history the USGS has been committed to disseminating the results of its studies to those who need or can use the information. In general, USGS has delegated authority to the lowest level possible. Most bureau publication policies outlined in the USGS manual reflect the older technology of printing rather than electronic dissemination; newer policies related to electronic information dissemination are generally at the division rather than the bureau level.

Responses to Questions

1. Yes, we have published policies; a number of chapters in the DOI and USGS manuals provide policy guidance on disseminating information to the public. In addition, the USGS has developed internal guidelines for web publication and for use of our Visual Identity on information products.

    The USGS has a fax-on-demand capability (703/648/4888; also available through the toll-free number 1-888-ASK-USGS) through which the public can access a number of short publications.

2. Yes, there are internal memoranda from the Associate Directors of the four USGS divisions (Biological Resources, Geology, National Mapping, and Water Resources) that outline publication procedures. One Division has a policy that all new formal publications must be available on the Web, and some publications series are digital only. In addition, many groups are informally putting many of their previously published general-interest publications on the Web, both to increase the availability of these materials and to reduce printing and distribution costs. The websites listed under question 4 include links to many of these publications.

    Examples of division-level guidelines/policies follow:

    Geologic Division will create, maintain, and distribute a wide variety of earth-science products in order to convey the results of Program or reimbursable activities to diverse audiences. All products will be technically sound and scientifically credible, will

effectively convey the intended message to the target audience, will have required authorization and sufficient funding, and will be archived for long-term preservation.

6.1.3 All formal products of Geologic Division will be produced and distributed in electronic
 form at a minimum.
 6.1.3.1 Products such as printed books, pamphlets, and maps derived from the electronic material are optional, depending on the need and available funding.

BRD has several policies that touch on issues related to dissemination. These include policies on preparation and inclusion of metadata in the National Biological Information Infrastructure (#08 Metadata for Data Sets and Information Products), peer review (#11 Science Quality), and publishing in the internal BRD series (#14 Printing and Publishing). Our publishing program guidelines instruct publishers within BRD to provide copies of published reports to the National Technical Information Service and the Defense Technical Information Center to ensure broad availability. No formal or informal guidance has been issued advocating discontinuation of paper products, with the exception of a few informal, infrequently published products.

The National Mapping Division does much of the reproduction and dissemination of USGS products. Policies include: 99-1, Free Automatic Distribution of USGS Paper Maps and Map Indexes; 98-6, Implementation and Maintenance of the Spatial Data Transfer Standard, relating to the format of geospatial data that are available for free download from the Internet; 98-5, Product Delivery to Partners, relating to delivery of products, both digital and hard copy, to government partners that contribute to the costs of producing a geospatial product; and 98-1, Policy on Geospatial Metadata, relating to the product information that is distributed with each product.

The USGS Earth Science Information Centers (ESICs) offer a nationwide information and sales service for all USGS map products and earth science publications. A customer can call toll free 1-888-ASK-USGS (275-8747) for more information. At this number the customer can get technical and product ordering information. A list of the ESICs and other information about them can be found at http://mapping.usgs.gov/esic/esic_index.html.

3. We have a new Bureau-wide information product management policy that clearly states a disposition schedule should be created for all publications. We do not have a Bureau-level policy that indicates the specifics of how long a document should be on the web; that information is determined by the authors of the page.

Archiving is clearly an important issue; at this time adequate funding has not been provided to address the problem of electronically archiving the vast amount of information that USGS has produced.

4. There are a number of lists of electronic information products, generally maintained by divisions or smaller geographically based units. See examples at
http://geology/usgs.gov/products/html
http://water.usgs.gov/pubs/
http://mapping.usgs.gov/mac/isb/pubs/pubslists/index.html

Other ways to find USGS information on the web include
http://www.usgs.gov/library/
http://edc.usgs.gov/webglis/

http://edcsns17.cr.usgs.gov/EarthExplorer/

A group within USGS is currently working to develop a standard list that will include all publishing units.

5. Our formal series publications (professional papers, bulletins, various map series, etc.) are authorized by Congress. Like all federal agencies, we distribute our printed products to Federal Depository Libraries. Our information dissemination activities were designed to comply with the provisions of the American Technology Preeminence Act, OMB Circular A-130, and other government-wide statutes related to information availability.

   Inclusion of metadata in the NBII or NSDI is mandated by Executive Order 12906. The National Geologic Mapping Act requires the USGS to build a national geologic map database which provides, through its "map catalog", a link to all geoscience maps published by the USGS and its partner in the act, the Association of American State Geologists.

6. This is a critical area; the information paid for by taxpayer dollars must be accessible to the public to the maximum extent feasible. NARA has the authority, but perhaps inadequate resources, to establish policies and standards for archiving. A clearinghouse approach may be the most appropriate approach for the vast amount of diverse information available, as long as consistent, long-term funding is assured.

Department of Labor (DOL)

The *Attorney General's Manual on the Administrative Procedure Act*[95], section 3, Public Information (attached), is one of the primary authorities that governs how agencies distribute information to the public. On the issue of applicability, the *Manual* reads "(t)his section, unlike the other provisions of the Act, is applicable to all agencies of the United States, excluding Congress." It also notes two exceptions, namely a need for secrecy and any matter relating solely to the internal management of an agency. Section 3(a) directs each agency to "separately state and currently publish in the *Federal Register*" its organization, procedures and substantive rules. DOL's rules regarding Internet Services were published in August of the current year.[96] In reviewing the *Manual* further, it discusses the Department's publishing obligations, as they relate to substantive rules, procedures and any orders or decisions that are by nature adjudicatory, such as ARB or ECAB decisions. The public records requirement is also articulated, and is most often applied in a FOIA context. The *Manual* states in relevant part:

> Each agency should publish in the Federal Register, under 3 (a) (1), a rule listing the types of official records in its files, classifying them in terms of whether or not they are confidential in character, stating the manner in which information is available (as by inspection or sale of photostatic copies), the method of applying for information, and by what officials the application will be determined.

It is left to the agencies to determine if what is produced should be considered part of the official record. "Each agency must examine its functions and the substantive statutes under which it operates to determine which of its materials are to be treated as matters of

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[95] http://www.oalj.dol.gov/public/apa/refrnc/ag02.htm.
[96] http://www2.dol.gov/dol/_sec/public/regs/fedreg/notices/2000020763.htm.

official record for the purposes of the section." It should be noted that on the issue of report publication or publication in general, the Manual is silent.

> Another often cited reference is the OMB Circular A-130.[97] "Circular No. A-130 provides uniform government-wide information resources management policies as required by the Paperwork Reduction Act of 1980, as amended by the Paperwork Reduction Act of 1995, 44 U.S.C. Chapter 35." The *Circular* describes the management of information: "Agencies shall plan in an integrated manner for managing information throughout its life cycle" and then articulates steps A-F regarding information management planning. Of particular interest is the section on Electronic Information Dissemination. It reads in relevant part:

> Agencies shall use electronic media and formats, including public networks, as appropriate and within budgetary constraints, in order to make government information more easily accessible and useful to the public.

The *Circular* then goes on to discuss several points on when this type of format (electronic) is appropriate.

The regulations that govern the Department's disclosure of information policies are outlined in 29 CFR part 70 et seq. (attached). Note that the date of enactment, unless otherwise noted in the specific part, is May 30, 1989. The policy is articulated in part 70.3 (Subpart A General) which states:

> All agency records, except those specifically exempted by one or more provisions of 5 U.S.C. sect. 552(b) shall be made promptly available to any person submitting a written request in accordance with the procedures of this part.

According to part 70.4 of the same title, these materials include final opinions and orders [70.4(a)(1)], statement of policy and interpretation not published in the *Federal Register* [70.4(a)(2)], and administrative staff manuals not exempt under section (b) of FOIA [70.4(a)(3)]. Subsection (b) of the same part also calls for current indices providing identifying information regarding any material issues adopted or promulgated after July 4, 1967. This same subsection also adopts a provision that provides for the removal of identifying details from any record that is published or made available for inspection, so as to prevent an unwarranted invasion of personal privacy. Subpart B outlines the procedure for disclosure of records under the Freedom of Information Act, Subpart C discusses costs for production of documents and Subpart D discusses public records.

Internal Department of Labor public information dissemination guidelines are articulated in a number of Secretary's Orders and other internal memoranda, and the *Department of Labor Manual Series* (DLMS), all of which are discussed in more detail in the paragraphs below.

The Secretary's Order dated August 16, 2000 is an acknowledgement that the Department is beginning the process of upgrading their standards for web-based delivery of government information. These standards include a commitment to regularly update laws,

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[97] http://www.whitehouse.gov/omb/circulars/a130/a130.html#8.

regulations, programs and activities on each agency web page. In reference to the information delivery issues at hand, the Order reads:

> e. Ensure that all information placed on the main DOL or individual agency web sites receives appropriate review and clearance within the Department prior to issuance, including consideration of all appropriate factors such as: the need for coordination between relevant agencies; appropriate levels of clearance; timeliness and accuracy of information; and the implications of applicable statutory and administrative requirements or guidelines.

Continuing on, the Order says that:

> Departmental Public Web Site Content Clearance Process   refers to the procedures to be developed by the Assistant Secretary for Policy (ASP) for purposes of the Department's review and approval of documents and other substantive materials to be placed on the DOL public web site and which require Department-level clearance.

As this inquiry has shown, the ASP or OASP, is in the process of developing these guidelines in compliance with this Secretarial Order.

The "Internet Clearance and Operating Procedures" memo to DOL Executive Staff, dated October 29, 1996, provides interim guidance for policies and procedures to address the most pressing concerns regarding the Department's Internet policy. It sets out interim policy covering information involving the Secretary, the DOL Homepage, Internet-specific information, links to sites outside DOL and inaccurate, outdated or missing information. Of note, the policy regarding the Internet Homepage requires agencies to notify ASP in writing at least one week prior to the planned release date, and then ASP will coordinate these requests with OPA. The policy articulation regarding Internet-specific information requires each agency to identify an Internet Coordinator, and notify ASP of that person's identity. Further, and of greater importance to the issues being considered here, each agency will establish written clearance official(s) at the policy level for all information contained on their Internet sites.

Secretary's Order 6-83, dated April 21, 1983 (attached), deals with the consolidation and control of Department of Labor Audiovisual Activities. This Order delegates authority and assigns responsibility for the management, coordination and control of the Department's audiovisual program to the Office of Information and Public Affairs. As it relates to the DLMS Chapter 5, this Order defines the policy by which all materials are cleared through the Department's Control System (see DLMS 5-540). An exception is noted for production of research reports, statistical analysis, et al, when the primary intent behind such production is to provide limited distribution within the government, among the personnel of an agency for policy analysis and formulation, or when produced by an analyst for presentation of research before professional bodies.

Secretary's Order 37-65, dated December 8, 1965 (attached), delegates authority and assigns responsibility for public information, publications and reports for functions within the Department. It should be noted that this order is cited in the Department of Labor Manual Series, discussed below, and is still active policy for publications and reports. The Order states, in relevant part, that the heads of administrations, bureaus and offices are responsible for "... developing planning goals and program objectives for information, publications and reports activities covering substantive program areas." The Director, Office of Information, Publications and Reports is responsible for "prescribing policy,

guidelines and standards for the conduct of information, publications and reports programs and providing technical assistance and leader to information staff of Administrations, Bureaus and Offices."

The *Department of Labor Manual Series* (DLMS), which has been referenced above, also discusses public information disclosure and distribution. DLMS 5, Chapter 300[98] discusses disclosure of records under the Freedom of Information Act. Note that again, the internal operating guidance is silent on the issue of report publication or publication in general. DLMS 5, Chapter 500[99] discusses the Department's Office of Public Affairs (OPA or OIPA), including its role as the information dissemination policy maker for the Department. Section 523 deals with publications, and states in relevant part: "OIPA is required to review all DOL publications to be distributed to the public by the following orders..." and instructions as to format, attribution, and prior approval are articulated. I found this directive to be widely recognized by agencies, as articulated below. DLMS 5-1 constitutes the *Handbook on Public Affairs Policy* (attached).

At the sub-Departmental agency level, I have contacted individuals to find out their agencies' information dissemination policies. In response to my queries, I received two general answers, either that their agency follows OPA's guidelines, or that their agency had no distinct policy in place. Additionally, there are materials from the agency web sites within DOL that show the agency's policy or mission statement in an effort to flesh out the purpose and policy of various agencies. The URLs for these guidance documents are given in chart format. To give the end user a sense of structure, I have also included the DOL Organizational Chart.[100]

Agency	Response
ARB	The website[101] provides access to Board decisions, Executive Mission and Members.
ASP	Web policies are still in draft [102]. The DOL Policy Center Overview is cited below.[103]
BLS	Three policy documents are attached. Mission statement is cited below.[104]
BRB	The website[105] provides access to Board decisions and Executive Mission.
ECAB	No written policy, the website provides access to Board decisions and Board's function.[106]
ESA	Their website[107] provides access to laws and regulations, published reports and mission statement.

[98] http://www.labornet.dol.gov/OASAM/LIBRARYxDLMS/dlms5_300.htm.
[99] http://www.labornet.dol.gov/OASAM/LIBRARYxDLMS/dlms5_500.htm.
[100] http://www2.dol.gov/dol/public/aboutdol/org/orgchart.htm.
[101] http://www2.dol.gov/dol/arb/.
[102] http://www-test.dol.gov/dol/dolonly/internet/standards.htm.
[103] http://www2.dol.gov/dol/asp/public/aboutasp/mission/mission.htm.
[104] http://www.bls.gov/blsmissn.htm.
[105] http://www2.dol.gov/dol/brb/.
[106] http://www2.dol.gov/dol/ecab/.
[107] http://www2.dol.gov/dol/esa/.

Agency	Response
ETA	ETA has no set policy, said that divisions are supposed to follow policy set by Secy.'s office. Their website[108] provides access to published reports and mission statement. Agency web technical standards, attached, are posted on the Workforce Development Service Center website.[109]
ILAB	No policy of their own, they follow the Department's policy. Their website[110] provides access to published reports and mission statement.
MSHA	Their web policy is attached. DLMS 5-1 *Handbook on Public Affairs Policy*, p.14, states MSHA Public Information Policy. Their statutory functions are cited below.[111]
OALJ	Their mission statement is cited below.[112]
OASAM	The printing services brochure is attached.[113] Departmental Information Accessibility Plan is attached. IT Center is revising their current forms, testing for document routing, nothing even in draft yet. Current OASAM Mission and Function is cited below.[114]
OCFO	Their website[115] provides access to Publications List, Financial Library (which includes DOL and other information), and mission statement.
OCIO	Their mission statement is cited below.[116]
OIG	Have FOIA posted on their web page, follow E-FOIA, no other policy in place. Their mission statement, from Strategic Plan FY 1997-2002 is cited below.[117]
OSHA	DLMS 5-1, *Handbook on Public Affairs Policy*, p. 15, states OSHA Public Information Policy. Docket office has procedures manual which is being updated (started with OPA, got transferred to Docket office) Their mission statement is cited below.[118]
OSBP	Revisions to DLMS expected in mid-Oct 2000, until then, nothing. Their mission statement is cited below.[119]
PWBA	They follow the Department's policy. Currently doing new ERISA processing, receiving materials via electronic format re: pension plans. Their Customer Service Standards are cited below.[120]
SOL	Follow the Department's lead. About SOL is cited below.[121]

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[108] http://www.doleta.gov/.
[109] http://www.wdsc.org/techcouncil/tech-std.html.
[110] http://www2.dol.gov/dol/ilab/.
[111] http://www.msha.gov/mshainfo/mshainf1.htm.
[112] http://www.oalj.dol.gov/aljmissn.htm.
[113] http://www.labornet.dol.gov/oasam/services/printing.htm.
[114] http://www2.dol.gov/dol/oasam/public/info_about_oasam/mission/oasam1.htm.
[115] http://www2.dol.gov/dol/ocfo/.
[116] http://www2.dol.gov/dol/cio/public/about_cio/cmission.htm.
[117] http://www.oig.dol.gov/public/strplan.pdf.
[118] http://www.osha.gov/oshinfo/mission.html.
[119] http://www2.dol.gov/dol/osbp/public/aboutosbp/mission.htm.
[120] http://www2.dol.gov/dol/pwba/public/aboutpwba/main.htm.
[121] http://www2.dol.gov/dol/sol/public/info_about_sol/main.htm.

Agency	Response
VETS	ASVET memo 2-97 addresses this[122], along with their mission statement.[123] NB: we have experienced problems accessing this .pdf document, so a hard copy is attached.
WB	Follow department's policy, don't have their own Their mission statement is attached in two forms: one from their web[124] and one from their office.

Department of the Treasury

1. The Department of the Treasury uses government-wide regulations on information dissemination as they have been issued. For example, we have followed the requirements under the Paperwork Reduction Act (PRA) to implement the Government Information Locator Service (GILS).

   Effective, October 1, 2000, the Treasury Chief Information Office (CIO) recently reorganized and has created an information management program office that will be responsible for information dissemination policy. The CIO office plans to develop, with assistance from general counsel, the required information dissemination policies levied under the PRA/GILS, Electronic Freedom of Information Act (E-FOIA), and Treasury Internet policy site.

2. The Treasury bureaus have not established their own information dissemination policies and/or implementing programs; however, the Financial Management Service (FMS) developed a style guide located at: http://fms.treas.gov/style.html.

3. The Department, with involvement of the bureaus, established guidelines for managing information on websites. The bureaus follow the Treasury guidelines located at: http://www.treas.gov/internetpolicy/procedures.html.

   In addition, FMS has developed more specific guidelines to keep the FMS website current. New items must be approved at the Director level and include a signed Memorandum of Understanding (MOU) (attached). All content providers must review and certify the accuracy of their data on a quarterly schedule. A CD of the FMS website is made monthly for archival purposes. The attached MOU lists FMS employees who maintain their own web on fms.treas.gov.

4. The following sites provide Treasury public information products and are periodically updated:
   http://www.bep.treas.gov/
   http://www.publicdebt.treas.gov/
   http://www.usmint.gov/
   http://www.irs.treas.gov/
   http://www.treas.gov/fletc/foia/readroom.htm
   http://www.customs.treas.gov/
   http://www.fms.treas.gov/browse.html
   http://www.treas.gov/foia

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[122] http://www-nvti.cudenver.edu/new/resources/Key Links/ASVET_MEMOS/ASVET202-97.PDF.
[123] http://www2.dol.gov/dol/vets/public/aboutvets/mission/mission.htm.
[124] http://www2.dol.gov/dol/wb/public/info_about_wb/mission.htm.

http://www.access.gpo.gov/su_docs/gils/index.html
http://www.treas.gov/information.html

5. The FOIA reading room is mandated by the E-FOIA and GILS was mandated by the PRA. The Treasury website was established by the Assistant Secretary for Management/CFO and the Deputy Assistant Secretary for Information Systems/CIO. The bureau websites were authorized by the bureau's head and the CIO.

6. Treasury requests additional guidance from: (1) the Department of Justice to implement E-FOIA; (2) the Office of Management and Budget to implement the Privacy Act; and (3) government oversight agencies on web posting and content management. Further, bureaus recommend that aggressive program management be used to ensure the public receives effective and complete dissemination of, or access to, agency information.

Department of Veterans Affairs (VA)

1. The Department of Veterans Affairs (VA) has policy on the Freedom of Information Act and the dissemination of government information. The polices/procedures may be found at:

   a. http://www.va.gov/publ/direc/irm/6300dir.html — VA Directive 6300, Records and Information Management
   b. http://www.va.gov/publ/direc/irm/63003HB.html — VA Handbook 6300.3, Procedures for Implementing the Freedom of Information Act
   c. http://www.va.gov/publ/direc/irm/6360dir.html — VA Directive 6360, Dissemination of Government Held Information
   d. http://www.va.gov/publ/direc/irm/63601hb.pdf — Procedures for Implementation of the Government Information Locator System (GILS).

2. Individual bureau-level units have not established separate policies or programs. They follow the department-wide policy.

3. VA is in the process of drafting Internet/Intranet policy.

4. VA does not have a comprehensive and authoritative listing of VA electronic information that is periodically updated. VA does have an index of information in its Electronic Reading Room (http://www.va.gov/foia/err/standard/Default.htm). In addition, there is an AltaVista search of pages on the www.va.gov web server that was last updated in 1994: http://www.altavista.com/cgi-bin/query?q=host%3Awww.va.gov++&r=&kl=XX&d0=&d1=12%2F31%2F1994&stype=stext&pg=aq&Translate=on&search.x=0&search.y=0.

   VA's Veterans Benefits Administration (VBA) maintains a Web – Automated Reference Materials Systems (WARMS). WARMS provides internet access to VBA manuals, directives, circulars, letters, Title 38 Code of Federal Regulations and other reference materials to Veterans Service Organizations (VSO), Educational Institutions and the general public. WARMS is available to anyone with Internet access and is subject to timing bottlenecks depending on the number of current users accessing the site.

   VBA also has this information available on CD-ROM (ARMS CD). The Internet version uses a different search engine that does not offer a wide range of search options. Searches can only be performed on a single database or the entire collection of databases. A copy of the ARMS CD-ROM may be obtained by contacting Ms. Tammy Hurley at 202-273-7077.

The Internet address is provided to non-VA persons requesting VBA publications. The application is accessible using any standard Internet browser and an Internet Service Provider. Links are provided within the WARMS Web page to download the free Microsoft viewer software needed to display the retrieved documents on the user workstation. Viewer software should only be downloaded to those workstations that do not currently contain the Microsoft Office 97 suite of programs.

Users are provided with an option to provide feedback on the site. All personal Internet account users can forward comments to the ARMS Mailbox using their local mail software. All users accessing the system on a "borrowed" Internet account, such as a public library or other public use workstations can forward comments using an ARMS Contact Form.

The site is updated to reflect current VBA publications.

5. Major information products, etc., mandated by Congress, federal statute or put in place by the President, department/agency head, or senior program official:

    a. Applicable law regarding dissemination of information in general:
    (1) The Freedom of Information Act, 5 U.S.C. § 552
    (2) The Privacy Act, 5 U.S.C. § 552a

    b. Law applicable to VA in particular:
    (1) 38 U.S.C. § 5701—protects confidentiality of records related to veterans' claims, confidentiality of names and addresses of veterans and dependents.
    (2) 38 U.S.C. § 5705—protects confidentiality of medical quality assurance records
    (3) 38 U.S.C. § 7332—protects confidentiality of records related to the identity, diagnosis, prognosis, or treatment of any patient or subject which are maintained in connection with the performance of any program or activity related to drug abuse, alcoholism or alcohol abuse, infection with the human immunodeficiency virus, or sickle cell anemia.

    c. VA Regulations:
    (1) 38 CFR. Part 1, §§ 1.460-1.584 (http://www.va.gov/foia/regulations.htm)
    (2) 38 CFR. §§ 14.800-14.810 ("Touhy" regulations)
    (http://www.access.gpo.gov/nara/cfr-retrieve.html - page1)

    d. Policies put in place by the President: Executive Orders, including Executive Order 12, 600, regarding process to be followed when release of confidential commercial information under 5 U.S.C. § 552(b)(4) is at issue

    e. Other:
    (1) U.S. Department of Justice Memorandum to Principal FOIA Administrative and Legal Contacts at All Federal Agencies (October 4, 1993), regarding "FOIA Policy Memoranda Issued by President Clinton and Attorney General Janet Reno"
    (2) Office of Management and Budget Circular A-110

6. Maintain web site to include all current, publicly available information.

Environmental Protection Agency (EPA)

1. Regarding published policies:

    YES, EPA has in place Directive 2100—the Information Resources Management Policy Manual. Specifically, Chapter 21, entitled Policy on Public Access to EPA Information, establishes the principles governing public access to, and dissemination of, information gathered and maintained by EPA. The Agency also has published a set of policies and informal guidelines entitled the "WEB Guide" (http://www.epa.gov/webguide/topics.htm).

    The Agency is actively identifying the need for new policies, especially regarding Internet dissemination. We are in the process of developing policies regarding Disabled Access (Section 508 of the Rehabilitation Act), Limited English Proficiency (LEP), and the use of Non-EPA servers. A recent policy memorandum on "cookies" will be faxed to you. We also continue to review existing policies. We have a public access strategy in development that will provide direction and framework for the various components of public access.

    There is no EPA policy that mandates publishing public information only in electronic mediums and formats. In fact, EPA information may need to be made available in both paper and electronic formats to address the needs of public audiences. In many instances, printed "fact sheets" are still the most effective way to inform some communities of important events related to environmental protection (i.e., public meetings regarding cleanup at a hazardous waste site, advisories regarding potential contamination in fish, etc.). For databases and large documents, the Agency increasingly relies on electronic means. Large documents are typically available in both electronic and paper formats.

    While not advocating discontinuing the publication of information products in paper form, a September 23, 1996 memorandum entitled "Public Availability of EPA Information Via Internet" (http://www.epa.gov/webguide/get/hansmemo.htm) is a key EPA communication. In that memo, Deputy Administrator Hansen stated "the Agency has committed to make information from all EPA programs available through the Internet and other electronic means that Americans and local organizations can access in their homes, schools, and libraries."

    EPA is working to implement the Government Paperwork Elimination Act of 1998 where agencies must provide "for the option of electronic maintenance, submission, or disclosure of information, when practicable as a substitute for paper" within 5 years.

2. EPA programs generally follow the policies developed for Agency-wide application as per EPA Directive 2100 and the informal guidance in the WEB Guide mentioned in the second part of Question 1 above. EPA also has a central Office that directs product review. In addition, EPA's Office of Environmental Information is in the process of canvassing EPA Programs and Regional offices for current information products and to identify any additional policies that may exist.

3. Yes, as mentioned above in response to Question 1, EPA has a set of guidelines referred to as the WEB Guide (http://www.epa.gov/webguide/topics.htm). Please see the section entitled "Publishing on EPA Servers" for additional detail.

    Regarding "old" information, the WEB Guide contains the following:

    "Every Web site on EPA's public access server has the potential to become stale, out of date, obsolete, contain dead links or inaccurate information. Periodically Web sites must

be reviewed to ensure that only the highest quality information complying with the principles of the Web Guide, Product Review Guidance, and other Agency counsel is released to the public. In the words of the Chief Information Officer of the Agency, information must be 'timely, accurate, integrated, and useful to the public'."

By requesting to post information on an EPA server, the data owner agrees to be responsible for and maintain the information that he/she publishes. Please recognize that this informal guideline is not vigorously enforced.

The EPA Online Rules of Publishing (http://www.epa.gov/webguide/create/rules.htm) contain Rules (VII & VIII) that address permanent retention & availability, and archiving. Rule VIII contains information on Recordkeeping Requirements. It states "Program offices must establish recordkeeping requirements (RKR) for the records they create and receive in the course of their official duties. This guide will help program offices improve the quality of their documentation."

Records and archiving issues are complicated topics for web publication. This is a subject requiring clear policy, which EPA will address in the coming months.

4. At this time, the best way to find EPA public information products on the Internet is to go to the website of each Program or Office, or do a search. In most instances, each website has a prominent link for "publications" or "information products." While not perfect, these sites are much improved from earlier versions. In addition, the Agency is still active in maintaining its Government Information Locator System (GILS) for major data systems and public access points. The current GILS collection is maintained both through the Government Printing Office and on the EPA Web site at http://www.epa.gov/gils/.

EPA and the Environmental Council of the States (ECOS) are working together to develop an Information Products Bulletin (IPB). An interim version of the bulletin is available on EPA's website at (http://www.epa.gov/ipbpages). The IPB will provide a comprehensive list of EPA's significant information products under development or major modification. The bulletin will also list some of the States' significant information products, and in some cases, identify opportunities for stakeholder involvement. The IPB has been initiated as one of several efforts by EPA and the States to advance the creation and use of data to enhance public health and environmental protection, inform decision-making, and improve the public's access to information about environmental conditions and trends. The final version of the IPB will be released in March 2001 and it will be updated every six months.

In addition to the web, various EPA programs maintain "800#" hotlines that the public can call toll-free to learn about available publications for a particular topic (i.e. radon, Energy Star Program, Superfund, etc.) While not comprehensive for the Agency, they are useful in providing program-specific information.

5. EPA is mandated by law to disseminate information. Examples of the various citations where we have been directly required to provide its information can be found in a March 1996 Congressional Research Service Report (this can be provided, if necessary). For example, the 1986 Emergency Planning and Community Right-to-Know Act (EPCRA), provides an infrastructure at the state and local levels to plan for chemical emergencies. Facilities that store, use, or release certain chemicals, may be subject to various reporting requirements. Reported information is then

made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. EPCRA requirements include:

- Emergency planning notification (EPCRA §302)

- Emergency release notification (EPCRA §304)

- Hazardous chemical inventory reporting (EPCRA §§311/312)

- Toxics Release Inventory (TRI) reporting (EPCRA §313); see (http://www.epa.gov/tri/)

In addition, as a result of the Safe Drinking Water Act, reports of water quality are sent periodically by local water authorities to consumers with their monthly bills.

Examples of Agency led initiatives include the Sunwise Program and the Surf Your Watershed Program (http://www.epa.gov/sunwise and http://www.epa.gov/surf3/sitemap/graphic2.html).

An example of a recent policy memorandum recently developed by EPA's Office of Environmental Information is entitled "Protecting Personal Privacy on EPA's Public Access Web Site: Cookies Policy." This policy includes guidance for EPA programs on how to ensure that they are protecting the privacy of citizens using EPA web sites. In addition, we continue to develop polices as stated above in our response to Question 1, namely Section 508, Limited English Proficiency, and the use of Non-EPA servers.

6. EPA is an Agency comprised of several programs stemming from different statutory authorities (i.e., Clean Water Act—Office of Water, Comprehensive Environmental Response, Compensation & Liability Act—the Superfund Program, and several others). A very significant challenge for us is to integrate the data and information from our various programs. They generate hundreds of information products.

To better support and coordinate the work of these various programs, in 1998, EPA created the Office of Environmental Information (OEI). This office helps ensure that EPA collects high quality environmental information and makes it available to the American public. We provide guidance to assist the agency about the way we collect, manage, analyze and provide/allow access to environmental information.

EPA's Office of Environmental Information:

- sets goals, develop processes and establishes data standards to enhance environmental data and information collection,

- centrally manages EPA's information technology (IT) policy, infrastructure and oversight of federal and agency information technology (IT) statutes, regulations, and standards,

- develops and implements policies for improving public access to environmental information, and

- oversees EPA's quality-related procedures and policies for environmental programs.

Federal Communications Commission (FCC)

1. Yes we do have several written policies on FCC's access and dissemination to the public. FCC has had several NPRMs [Notices of Proposed Rulemaking] and Report and Orders on electronic filing initiatives. Most of these have been required to make e-filing mandatory. On the other hand, the use of the FCC web site, http://www.fcc.gov/, for dissemination of public notices, news releases, reports, and Commission orders has been an effort within the Commission to quickly disseminate information without written policy to do so, but simply to get information out ASAP. Our site has most of these documents dating back to 1994. Look at our site near the bottom for disclaimer information http://www.fcc.gov/disclaimers.html

2. The answer to this question is yes, there have been orders released by the Wireless Bureau on using the Universal Licensing System (ULS), Mass Media Bureau has done several as well, and so have the folks developing the Electronic Comment Filing System (ECFS), which I am responsible for, go to http://www.fcc.gov/e-file/ecfs.html search the database by putting in 97-113 for the proceeding name and the you can view the NPRM, the Comments filed, and the final Order. I cannot give you all of the cites for MMB and Wireless.

3. The FCC web site has never been purged. Individual documents have been replaced if the incorrect or substantially wrong document was posted with the correct one. The FCC is sending NARA the paper original for records retention purposes. We do plan to send Computer Output Microfilm/Microfiche (COM) in lieu of paper in the future, but haven't had the time or resources to do so. With NARA incapable of receiving CD/ROM, COM is the next best thing, until then FCC will continue to send paper.

4. FCC did the GILS thing several years ago, but has not really kept it up to date, however, we have 2 search applications using numbers or subjects to check our site for relevant documents available over the internet.

5. The Auctions activities are required by Congress. The rest have been a significant push by the present and previous Chairman to use the Internet for electronic filing and dissemination. Go to the following site for a list of our e-filing systems: http://www.fcc.gov/e-file/.

6. Force NARA to receive agency documents by CD/ROM, electronically transmitted from us to them, accept the PDF file format or mandate the file format to use, or leave us alone. Most of our initiatives have been for the public to file electronically so that we use less paper. Eventually, we will either generate COM to send to NARA, or the records will be incomplete because their present requirements for accepting data are so outdated, e.g., 6250 bpi tape, no extraneous characters, 7 digit block factor,....please get real.

Smithsonian Institution

1. The Smithsonian Institution is a trust established by Congress for the increase and diffusion of knowledge. It has no governmental function and was created by Congress to be separate from the three branches of government. As such, it has no published policies on government information dissemination.

   In the course of fulfilling its mission to increase and diffuse knowledge, however, the Institution continually disseminates information through its publication of research results, its scholarly and popular publications, its exhibitions, and its public programs, including the issuances of the Office of Public Affairs, in addition to the Smithsonian website (http://www.si.edu/). Although the Institution is not covered by the Freedom of Information Act, it does respond to requests for information from the public.

No, [there is no letter or other communication from a senior official that mandates the discontinuance of publishing an information product in paper form, in favor of utilizing electronic mediums and formats].

2. The response to Question 1 applies here as well.

3. There are no Smithsonian-wide guidelines.

4. Such a listing is available on the Smithsonian website at http://www.si.edu/info/pubs_media.htm.

5. Pursuant to its charter (specifically, 20 U.S.C.§ 57), the Institution submits to Congress an annual report of its operations, expenditures, and conditions.

6. No response.

Administrative Office of the United States Courts (AOUSC)

1. The AO is committed to providing information to the public in a useful and timely fashion. This is done through the AO's Internet site (http://www.uscourts.gov/), publications, news releases, phone, fax, and other vehicles and methods of communication. Many, if not all, of the most frequently requested publications are available through this web site. They include *The Third Branch, Understanding the Federal Courts, the Judicial Business of the United States Courts,* and numerous other matters of public interest. In addition, the AO's Internet site is a gateway to federal court information nationwide and to many other court-related sites. Not only does the AO's Internet site link to all federal court web sites, it also provides Internet access to the Public Access to Court Electronic Records (PACER) system. In addition, the AO and the entire federal judiciary constantly explore more efficient and effective ways to conduct business and to make more information electronically accessible to the public.

2. The AO's Office of Public Affairs (OPAF) is the point of contact for communications with the news media. OPAF also manages the AO's Internet site. While OPAF has much contact with the general public, certainly other AO offices also have a need to work with select public audiences.

3. The AO's Office of Public Affairs (OPAF) monitors the AO's Internet site and regularly updates materials and publications. Press releases, new publications, proposed changes to rules of procedure used by lawyers who practice in federal courts, and various new reports are routinely added to the web site. Some of the more time-sensitive information, such as job vacancy announcements and requests for comments on proposed revisions of rules of practice and procedure, are removed automatically after their closing date.

4. The AO produces a Publications Catalog which includes notations if the publication is available in electronic format. In addition, the Internet site's search capabilities provide for easy identification of public information products.

5. The Rules Enabling Act (28 U.S.C. 2071-2077) requires the wide public dissemination of proposed changes to the rules of practice and procedure used by lawyers who practice in federal court. While the AO has published and continues to publish proposed amendments to the rules in the Federal Register, last year the same material was, for the first time, published on the AO's web site. This has enabled a broader audience to have access to this information. Comments about the proposed amendments also have been received via e-mail to this web site. In addition, information is provided about past and future meetings of the Judicial Conference committees with responsibility for rules of practice and procedure in the federal courts. Also, potential contractors can read Requests for Proposals (RFPs) for competitive procurement matters over the AO's Internet site. Additionally, the enclosed Publications Catalog indicates which publications are required by statute.

6. The AO has a long-standing commitment to providing public information to interested parties, within the context of legal constrictions on the release of certain information. While the AO has no recommendations for strengthening existing laws and policies at this time, it wishes to have an opportunity to comment on any proposed changes, especially as they may be related to limits on existing resources.

APPENDIX 28. SURVEY OF THE PUBLIC INFORMATION NEEDS OF DISADVANTAGED AND SPECIAL POPULATIONS

In early September 2000, NCLIS conducted an informal survey of 9 organizations that represent, or advocate on behalf of, special populations including disabled or disadvantaged individuals to determine their policies, programs and practices relating to public information dissemination. The survey instrument and the survey results are provided below.

NCLIS SURVEY OF THE PUBLIC INFORMATION NEEDS OF DISADVANTAGED AND SPECIAL POPULATIONS[125]

Conducted by F. Woody Horton and Sarah T. Kadec, NCLIS Consultants

SURVEY INSTRUMENT[126]

Several committees of the U.S. Congress have asked the U.S. National Commission on Libraries and Information Science (NCLIS) to recommend reforms to the Nation's laws, policies, programs, and practices governing the dissemination of government information to the public. The study comes about essentially because of the advent of the World Wide Web, and the rapidly accelerating federal agency actions to migrate their government information products for the public from ink-on-paper formats and mediums to the new electronic formats and mediums, especially the Internet. The Government Paperwork Elimination Act (GPEA), recently enacted by the Congress and signed into law, also mandates the transferal of transactions between the government and the people from traditional paper-based to electronic modes.

The Commission is already deeply into this study, and is very pleased to be receiving the active participation and involvement of a great many information and policy experts, associations, library groups, public interest groups, and others; four panels and a Board of Experts have been at work since late June. A final report will be sent to the Congress and the President by December 15, 2000. Background on the study can be found at www.nclis.gov/govt/assess/assess.html.

One of the most important "stakeholder groups" that heavily depends on government information are what are sometimes called "special need clientele" organizations, or, in other cases, organizations that represent memberships that are "disadvantaged" or handicapped in one respect or another. For example, memberships comprised of individuals or groups which are, in some manner, physically, emotionally, financially handicapped, or by virtue of their remote residency (e.g. rural areas), or by virtue of their minority status (e.g. gender, age, race, religion, ethnicity, etc.) unable to identify, much less search online and retrieve the information once found, the government information resources they need to cope with their special information needs or their particular disadvantages or handicaps. In both cases, the associations or societies which represent such individuals and/or groups have special information needs that are not otherwise being fully and adequately served by normally available

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[125] Available at http://www.nclis.gov/govt/assess/assess.appen28.pdf.
[126] The survey instrument is also available at http://www.nclis.gov/govt/assess/special.html.

public information services. *Congress wants to know what changes are needed to strengthen its public information infrastructure to better serve them.*

We are contacting you to ask for your assistance in a survey which we are conducting of a cross-section sampling of just a few associations, societies, and similar groups whose memberships and/or constituencies fall within one of the above categories. Woody Horton and Sarah Kadec are co-coordinating this study. If neither of them, nor Judy Russell, the NCLIS Deputy Director, has already contacted you, they soon will. However, please feel free at any time to telephone Horton or Russell at 202-606-9200. Kadec can be reached at (757) 259-0358.

We are asking you to do two things.

First, we would like to know about any published information or literature that deals with this challenge. Perhaps, for example, an article has been recently written that is published in either book or journal article form by one of your own members, for which you can provide us a citation. Or perhaps your organization has a web site which has such information available and accessible through the Internet, in which case we would also appreciate learning the URL address.

Second, we would like you to respond to the following questions and, if you provide a "yes" answer to any of them, kindly furnish us with a hard copy of the material (or call our attention to the web site containing the information if it is in electronic form):

1. Does your organization have any published policies and/or programs for providing government information (federal, state, local, or tribal) to your membership (e.g. how to access such information, where to go, whom to see, and so forth)?

2. What information do you not now receive from government that your membership/clientele often need or want?

3. What kind of government information resources does your association, society, or other kind of organization, most heavily depend on to meet the needs of its membership/clientele?

4. What changes in the government's laws, policies, programs, or practices governing the dissemination of information to the public might you recommend, which NCLIS, in turn, might be able to recommend to the President and the Congress in its final report?

In addition to the above, perhaps you would be interested in writing a special 'white paper' for the Commission's study. We could then provide the paper to our Panel 3, which is dealing with the information needs of the various individuals and groups outside of government, such as yours. Perhaps you have a "success story" to tell us, where your group has established a creative or innovative information service, system, or network to help its members search for, find, and then obtain and use government information. We would like to know about such a valuable resource so that we might, through our final report, share the idea with others.

We would much appreciate receiving this information by October 1st, or even earlier if possible, because of our very tight study deadline. Electronic responses can be sent to whorton@nclis.gov. Faxed responses can be sent to (202) 606-9203. Mailed responses should be sent to the below address.

The Commission wishes to thank you in advance for your willingness to assist us in this important endeavor. We believe the final results could be very valuable to you and your memberships/clienteles.

US NCLIS
1110 Vermont Avenue, N

Suite 820
Washington, DC 20005-3552

SURVEY RESPONSES FROM ASSOCIATIONS AND OTHER ORGANIZATIONS

Introductory Note

As a part of its effort to examine government public information dissemination, NCLIS believed that it was absolutely necessary to be very concerned with those individuals and groups in the general population who may have physical, emotional, or other problems in searching for, retrieving, or using government information available to them electronically. Sometimes the problems were directly related to a disability condition. Sometimes the problems were related to geographic location, such as rural Americans. Sometimes the problems had to do with state-of-the-art of the technologies being employed that are as yet inadequate to fully and effectively deal with the problem.

Nine different groups were contacted. They represented two types of organizations:

- The organization, such as a professional association, either was a direct membership society which represented a certain disadvantaged group and its membership counted those individuals in its ranks as members.

- The organization was not a direct membership kind of group, but, rather, worked toward the resolution of the problems of a certain disadvantaged group through lobbying and other public interest activities, or through other means such as leveraging financial resources, through philanthropic activities, and so forth.

Responses were received from seven of the nine groups contacted. Several of the groups did not reply specifically to the four questions, but, instead, discussed various critical issues that they believed that their clienteles face in accessing government information in electronic form. Both the responses to the NCLIS questions, and their comments, are summarized below.

Summary of Responses

1. Does your organization have any published policies and/or programs for providing government information (federal, state, local, or tribal) to your membership (e.g. how to access such information, where to go, whom to see, and so forth)?

American Association on Mental Retardation (AAMR).[127] Currently collaborating on the development of RADAR (Focused Research and Reporting on Critical Development Disability Issues), with bi-weekly "Radar" reports in an online data warehouse. The system is similar to one at the Substance Abuse and Mental Health Services Administrations (SAMHSA).

Association for the Advancement of Retired Persons (AARP).[128] Maintains the Ageline database of articles and book summaries. This database is licensed to several search services, and it will be added to the AARP web site later this year. AARP seeks to inform citizens of government benefits through its Public Benefits Outreach.

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[127] Its website is at http://207.201.142.179/index.shtml.
[128] Its website is at http://www.aarp.org/.

Columbia Lighthouse for the Blind (CLB).[129] This organization is concerned with visually impaired people and particularly their ability to find employment. It has entered a strategic partnership with the Colorado-based audio bookstore ReelBooks Internet Inc., to develop an e-commerce business operated by employees who are blind and visually impaired. ReelBooks.com provides online training and employment opportunities. Its employees receive hands-on training in Internet technology, technical support, and customer service.

National Library Service (NLS) for the Blind and Physically Handicapped (within the Library of Congress).[130] Yes, the NLS Collection Building policy, including discussion of the NLS' responsibility for making library materials available for the blind and physically handicapped U.S. citizens living in the U.S. or abroad.

National Organization on Disabilities (NOD).[131] Discussions are underway to develop a program to reach business and volunteer groups needing information on how to most effectively serve people with disabilities.

Self Help for Hard of Hearing People Within the National Center on Assistive Technologies (SHHHP).[132] No input.

TDI.[133] No input.

2. What information do you not now receive from government that your membership/clientele often need or want?

AAMR. Information on key issues relating to developmental disabilities (abuse, housing, aging, employment, and transportation).

AARP. No input.

CLB. Information on e-commerce and acquiring valuable career skills that increase future job marketability.

NLS. Public popular consumer information documents that come from various federal agencies, and time-sensitive documents.

NOD. Information on the "how-to" part of disability work.

SHHHP. No input.

TDI. Anything and everything must have sound, text, or captions to meet the needs of those who are deaf, hard of hearing, late-deafened or deaf-blind. This includes streaming videos and web sites that "talk," etc.

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[129] Its website is at http://www.clb.org/.
[130] Its website is at http://lcweb.loc.gov/nls/nls.html.
[131] Its website is at http://www.nod.org/.
[132] Its website is at http://www.shhh.org/.
[133] TDI was formerly known as Telecommunications for the Deaf, Inc. Its website is at http://www.tdi-online.org/.

3. What kind of government information resources does your association, society, or other kind of organization most heavily depend on to meet the needs of its membership/clientele?

<u>AAMR</u>. Vital policy, financial, research, and service information on issues and trends in mental health and substance abuse services.

<u>AARP</u>. Social Security, Medicare, and Medicaid information is obtained through AARP web site links to government and other sites.

<u>CLB</u>. No input.

<u>NLS</u>. Public popular consumer information documents, and research and statistical information from various federal information referral centers.

<u>NOD</u>. Basics on the ADA and other legislation.

<u>SHHHP</u>. Section 508 of the Rehabilitation Act. – Electronic and Information Technology, and guidance on accessible web sites included in the WWW Consortium.

<u>TDI</u>. No input.

4. What changes in the government's laws, policies, programs, or practices governing the dissemination of government information to the public might you recommend, which NCLIS, in turn, might be able to recommend to the President and the Congress in its final report?

<u>AAMR</u>. No input.

<u>AARP</u>. Move from offering simple, passive access to government information to actively getting it into the hands of individual who need it. Resolution of the problem of degradability and technical vulnerability of information in electronic formats. An agency of government should implement solutions to the impermanence of digital information. Universal access is necessary before government can cease traditional publishing efforts, the situation will improve, but not necessarily for everyone in society.

<u>CLB</u>. Support for providing employment opportunities for the blind and visually impaired residents of the Washington, D.C. area.

<u>NLS</u>. Of the government information readily available to the public, how much of it is in accessible formats such as audiotape, Braille, and computer diskettes for special needs population. The federal government should have an office where any agency could get training on providing accessible formats, specialized software they need to adapt it to their needs, and the monthly charges imposed for access.

<u>NOD</u>. Web-based way to search through government materials that have to do with the "how-to" part of disability work.

<u>SHHHP</u>. No input.

<u>TDI</u>. No input.

Additional Notes important to these groups include:

The NLS provided the following comments based on a document entitled *Computer and Internet Use Among People with Disabilities*, published by the Disability Statistics Center, University of California, San Francisco.[134] People with disabilities perhaps stand to gain the most from the new technologies, which are important tools with which to gain greater independence and social integration, yet they have among the lowest rates of use. Many are poor and cannot afford a computer capable of navigating the Internet. There is a need for lower-cost computing and access, simpler user interfaces, and a concerted program of education along with training and support in the use of hardware and software.

SHHHP referred the Commission to the Target Center at the Department of Agriculture, where free workshops on accessibility and the Internet are provided. Specifically the Commission was reminded of a Section 508 workshop at the IDEAS Conference held at the Department.

Detailed Responses

American Association on Mental Retardation (AAMR).

We have just received a grant of national significance to establish "RADAR:"

Radar Project Summary/Abstract

AAMR, a credible, well-respected organization concerned about intellectual and other developmental disabilities, will collaborate with The Lewin Group, (TLG), an experienced, respected, international health care consulting firm with proven competence in database development and management, to develop RADAR: Focused Research and Reporting on Critical Developmental Disability Issues. The RADAR System will be modeled after a similar system that was developed by TLG for the Substance Abuse and Mental Health Services Administration (SAMHSA). The SAMHSA system has been operating for three years and provides the agency with vital policy, financial, research, and service information on issues and trends in mental health and substance abuse services.

AAMR and TLG firmly believe our entire network would benefit greatly, if similar information were available to all stakeholders in the mental
retardation/developmental disabilities network. Furthermore, implementation of the Roadmap to the Future demands the capacity to identify and track developmental disabilities issues, activities, and trends at the national, state, and local levels.

The AAMR/Lewin Team will work with all developmental disability stakeholders to develop the content of the RADAR "early alert" Internet database system. Representatives from the developmental disabilities network, including individuals with disabilities and family members, will form a RADAR Advisory Council to guide development of keywords and provide overall project monitoring.

RADAR activities in the first year will focus on designing, testing and building the online Data Warehouse. On a weekly basis RADAR personnel will monitor the general news media and specific trade press related to developmental disabilities to collect nationwide information on key issues. A few examples of potential issues to be tracked include abuse, housing, aging, employment, and transportation. The information, gathered from more than 150 sources, will be summarized into bi-

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[134] H. Stephen Kaye, *Disability and the Digital Divide*, Abstract 22, San Francisco: Disability Statistics Center, University of California, San Francisco, July 2000; http://www.dsc.ucsf.edu/UCSF/pdf/ABSTRACT22.pdf.

weekly "RADAR" reports, which will be stored in the online Data Warehouse. All stakeholders, even the general public, will be able to access the Data Warehouse via the Internet. They will be able review the current report or search past entries. At the end of the first year of the RADAR initiative, the database content, ease of access and system utilization will be evaluated. In the second year, the technological accessibility for individuals with disabilities and their families will be reviewed.

With Advisory Council input, necessary modifications will be made to the RADAR System. In the third year, database content should be substantive and RADAR personnel will be able to focus on data mapping and trend analyses while continuing data collection activities.

Prepared by:
Doreen Croser, AAMR

Association for the Advancement of Retired Persons (AARP).

I have asked some of my colleagues to respond to different parts of your memo, so you may be receiving some additional material by email related to your information request.

My own responses in this memo should be taken as my own opinions, not necessarily reflective of official AARP policy.

As a former government documents librarian (at the regional depository library at the University of Maryland, College Park) I strongly support your inquiry into ways of improving the dissemination of U.S. government information to the public. The depository library system, laudable for the intentions behind it and for the hard effort invested in it, really has not resulted in universal public use (as opposed to access) of federal information resources; nor has that system been effective at including all U.S. government publications within its scope. Many of those publications are in fact only available through commercial products that supplement depository library collections (such as the CIS Index\Abstracts microfiche collections). The searchability and home access that the Internet makes possible allows for the government to move from offering simple, passive access to government information to actively getting it into the hands of individuals who need it.

That said, the problem of the degradability and technical vulnerability of information in electronic formats has still not been resolved. Some depository libraries have government documents in paper copy that were produced in the early 1800s. In contrast, the digital formats of the 1960s and 1970s--including IBM punch cards--are unreadable by the common computing hardware in use today. The economic incentive for government agencies to move from print to electronic publishing formats is strong, as is the benefit of searchability and timeliness that comes with digital information. Archiving that information for future reference, however, is complicated by the fact that magnetic media decay and digital formats and hardware change unpredictably. Is there any agency of government prepared to find and implement solutions to the impermanence of digital information?

An additional problem is that access to digital information is by no means universal yet throughout the U.S. and the world. The savings occur if government can cease traditional publishing efforts in favor of digital ones, but that will inevitably mean closing off access to government information to large areas of the citizenry. Aside from the issue of the cost of computer ownership and communication, there is the issue of training in the use of computers as information machines. Most of us learn to read in school, and many of us can do so with no more complicated "hardware" than our eyes. Moving entirely to digital information means making information access and use dependent upon a high level of education, facility in using computer hardware that continues to change from year to year, and the

money and savvy to either have the equipment at home or know how to get at it conveniently. Granted, this situation will improve--but not necessarily for everyone in our society.

The organization for which I currently work, AARP, is deeply involved with advocacy and information programs around Social Security, Medicare and Medicaid issues, among others. Our own Web site links to government and other sites related to these issues. Interpreting the issues and details surrounding these programs is one of the things AARP seeks to do in its own publications and programs.

Public Benefits Outreach, in which the organization seeks to inform senior citizens of government benefits for which they may be eligible but of which they may be unaware, is another of AARP's concerns.

After today I will be out of the office until October 3rd, so, unfortunately, I will not be able to respond to any follow-up questions you may have about this response.

Prepared by Hugh O'Connor
Association for the Advancement of Retired Persons

Columbia Lighthouse for the Blind (CLB)

(From *Digital Voices* -- September 25, 2000)

Region's New Economy Can't Exclude the Blind and Visually Impaired

As the president and chief executive officer of an organization providing programs and services to 20,000 visually impaired people in the Washington, D.C. area, I find it staggering that, even in the face of the current labor shortage, 70 percent of blind, working age adults in the United States remain unemployed. Initiatives designed to improve this unacceptably high unemployment rate and bridge the "digital divide" are urgently needed ["Initiatives for Disabled Unveiled," *National News*, September 22].

Recent advances in adaptive and assistive technology, such as screen magnification software and software that converts text into speech, can help to bridge this divide. Assistive technology is revolutionizing professional opportunities for the blind and visually impaired community, specifically in the communications and information services industry. This technology enables individuals who are experiencing vision loss to acquire and retain the skills necessary to achieve economic independence and allows visually impaired persons attempting to re-enter the workforce to develop marketable career skills. People who are blind and visually impaired can turn to the Columbia Lighthouse for the Blind to receive training in this technology.

In order to demonstrate to other local employers how easily, effectively and efficiently this technology can be integrated into the workplace, the Columbia Lighthouse for the Blind recently entered into a strategic partnership with the Colorado-based audio bookstore Reel Books Internet, Inc., to develop an e-commerce business that is operated by employees who are blind and visually impaired.

The resulting website, ReelBooks.com, is an online audio bookstore designed to provide training and employment opportunities consistent with the region's "new economy." In addition to learning about e-commerce and acquiring valuable career skills that increase their future job marketability, the blind

and visually impaired employees working for ReelBooks.com receive hands-on training in internet-driven technology, technical support and customer service.

The ultimate goal of this venture is to provide savvy, well-trained employees to other tech companies in the Washington, DC area, as well as to offer valuable retail service in the rapidly expanding market of audio books.

The official launch of ReelBooks.com will be held on Capitol Hill Thursday, September 28 from 5:00 - 7:00 p.m. in room B-369 of the Rayburn House Office Building. I invite Members of Congress, local business and community leaders and the residents of the Washington, DC area to attend the launch and show their support for providing employment opportunities for the blind and visually impaired residents of the metropolitan Washington, DC area.

Prepared by:
Dale Otto
President & CEO
Columbia Lighthouse for the Blind

National Library Service for the Blind and Physically Handicapped (NLS)

1. Does your organization have any published policies and/or programs for providing government information (federal, state, local, or tribal) to your membership (e.g. how to access such information, where to go, whom to see, and so forth)?

Yes, we have enclosed a copy of the NLS Collection Building policy and other related documents. We also included Sources of Braille Reading Material and NBA Suggestions for Producing Large Print Materials, 2000.

2. What information do you not now receive from government that your membership/clientele often need or want?

Public popular consumer information documents that come from various federal agencies and time-sensitive documents.

3. What kind of government information resources does your association, society, or other kind of organization, most heavily depend on to meet the needs of its membership/clientele?

Public popular consumer information documents that come from various federal agencies, and research and statistical information from various federal information/referral centers.

4. What changes in the government's laws, policies, programs, or practices governing the dissemination of information to the public might you recommend, which NCLIS, in turn, might be able to recommend to the President and the Congress in its final report?

The questions that we would ask you to pose "If it's readily available to the public, how are you providing it in special format? Who is the person to contact who will help provide the special format material for the various agencies? We would ask you to consider recommending:

- that a contact always be trained to help each agency;

- that the reforms include flexibility to allow for the dissemination of government information in accessible formats such as audiotape, braille and computer diskettes on an as needed basis for special needs population; and

- that the federal government always have an office where any agency can get training on providing accessible formats. For example, the U.S. Senate and U.S. House of Representatives have a special information needs office that helps each senator and representative respond to clients. Somewhere there should be an office to liaison with all executive department agencies to assure training and to help the agencies respond to special needs populations.

Finally, the passage of Section 508 of the Rehabilitation Act will make accessing government information via the Internet easier and more feasible for special needs populations, especially those with visual impairments. However, we encourage your committee to take note of a statement from the document *Computer and Internet Use Among People with Disabilities* published by Disability Statistics Center University of California, San Francisco:

> People with disabilities are perhaps the single segment of society with the most to gain from the new technologies of the electronic age. Yet they have among the lowest rates of use of these technologies. As a result, the potential benefits of computers and the Internet to the disability community are a long way from being realized.
>
> The problem is largely one of access. Many people with disabilities are poor and can little afford a computer capable of navigating the Internet, the specialized software they might need in order to adapt it to their needs, and the monthly charges imposed for access to the Internet. Many people with disabilities, whether elderly or not, lack an awareness of the potential benefits of this technology, an understanding that, for themselves especially, a computer and an Internet connection could become not a toy, but an important tool with which to gain greater independence and social integration.
>
> The advent of lower-cost computing--including the free computers that come with an extended subscription to an Internet service provider--may help to make this technology more available. Simpler user interfaces,
> which would encourage use by people who are less comfortable with the technology, might also help people with disabilities to overcome any resistance they might have to exploring the Internet. But it seems clear that, in order to clarify the benefits that this technology can offer to the population with disabilities, a concerted program of education will be needed, along with training and support in the use of the hardware and software, before significant progress is made in closing the enormous gaps in technology access that have been identified in this report.

The full report is available from Disability Statistics Center, University of California, San Francisco, Box 0646, Laurel Heights 3333 California Street, San Francisco, CA 94143-0646 or from their website: <http://www.dsc.ucsf.edu/>.

Prepared by (Mrs.) Freddie L. Peaco,
Government Information/Volunteer Specialist

National Organization on Disabilities (NOD)

I've asked a couple of people in the office now, and the general consensus is that we don't have the appropriate experience attempting to locate government publications for any specific constituency to

answer your survey. we are not of grass-roots organization -- and thus have relatively little contact with people from "disadvantaged communities". We are in the process of attempting to become more Web focused ourselves, however, and there is some discussion about trying to access materials that certain constituencies might have a need for, and link to them from a central location. If we did so, the constituencies that we would primarily be trying to reach are business and volunteer groups, looking for information on how they can work most effectively to serve people with disabilities, as well as get the basics on the ADA and other legislation. That said, we would love to have an easy, Web-based, way to search through government materials -- especially materials that have to do more with the "how-to" part of disability work.

Sorry that we cannot help you further. Other groups you might consider contacting are The American Association of People with Disabilities, the American Association of Retarded Citizens (the Arc) -- they have a governmental affairs office here in D.C.

Prepared by Taylor Hines
National Organization on Disabilities

SHHH National Center on Assistive Technologies

Thank you for contacting the "stakeholder" group of people with disabilities. I represent people with hearing loss via SHHH (Self Help for Hard of Hearing People). I will give you a quick answer now and perhaps we can respond in depth later.

I recommend that you go to the Access Board website and read as much as you can about rules for Section 508 of the Rehab Act—Electronic and Information Technology, which includes federal government obligations regarding your WWW questions. I also recommend that you specifically visit the website of the World Wide Web Consortium regarding guidance for accessible web sites. Please let me know if you can't find these websites.

Prepared by David Baquis, Director
SHHH National Center on Assistive Technology

APPENDIX 29. PUBLIC INFORMATION RESOURCES MAPS

Compiled by the Federal Library and Information Center Committee (FLICC) and the Government Documents Roundtable (GODORT) of the American Library Association (ALA).[135]

The public information resources maps are listed on the Commission website at http://www.nclis.gov/govt/assess/assess.html, under 4. Panel and Board of Experts Communications.

Public information resources maps are intended to portray in graphic, tabular style most of the key elements or attributes that are associated with each government information product, such as its official name, the parent/owning agency, statutory authority for the product, beneficiaries of the product, and so forth. The essential idea is to use a "bird's eye view" approach to underscore the richness and diversity of information that could be captured and recorded in a database if such a format were regularly and systematically prepared when products are first created. The format might then be updated if and when there are significant changes in any of the attributes, such as terms and conditions governing its availability and cost (if not free). While the Commission stopped short of recommending such a "standard graphic format" be prepared for all products, it will keep the possibility of utilizing such a format in front of it as it proceeds with additional studies and investigations.

In particular, a review of the entries under Distributors, Financing and Fee/Free indicates the variety of mechanisms employed even in such a small sample of public information resources. For example, of the 23 responses, 14 identify appropriations as the sole source of funding; 7 cite a combination of appropriations and user fees from sales by the agency, GPO, NTIS, a contractor or a commercial publisher, and 2 are entirely self-funding through user fees.

- Those funded solely by appropriations. All that respond to the Free/Fee category have some free access. The *Statistical Abstract* from the Department of Commerce does not include all of the tables from the paper and CD-ROM editions that are sold by NTIS, GPO and the Bureau of the Census.

- Those with a combination of user fees and appropriations. All have free public access at least through the Federal Depository Library Program (FDLP), and several through an agency website as well. The products sold directly by the publishing agencies (Census, USGS) are available for free public access through the FDLP, as are those sold by contractors or commercial publishers (National Cancer Institute, National Institute of Environmental Health).

- Those that are self-funding. STAT-USA from the Department of Commerce is required by statute to be self-funding, but still provides two passwords to each federal depository library to ensure free public access. Only the General Wage Determination Guidelines, which is published by NTIS on behalf of the Department of Labor, has no free public access, even through the FDLP. Like STAT-USA, NTIS is required by statute to be self-funding.

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[135] Available at http://www.nclis.gov/govt/assess/assess.appen29.pdf.

Department of Commerce

Agency *Owner vs. Custodian*	Department of Commerce, Bureau of the Census	Department of Commerce, Bureau of the Census
Resource Name *Type(s), Format(s), Mediums*	Decennial Census (Paper, CD-ROM, Online)	Statistical Abstract of the United States Paper (since 1878), CD-ROM (since 1993), Internet access at http://www.census.gov/statab/www/
Authority *Laws, Agency Regulations, OMB Policies*	U.S. Constitution	
Beneficiaries (Users), Internal vs. External, Public vs. Private, Foreign	Internal, External: Local, State, Tribal Government: Citizens, Foreign	All users – internal and external- public, private, foreign
Sources of Data Content	Survey	80+ federal agencies plus 126 non-government organizations
Value-Added Contributions Analysts, Brokers, Librarians, Statisticians, Other Specialists	All	CIS Statistical Universe
Distributors In-house vs. Contract, Other Agencies	Printed through GPO, CD distributed to FDLP through GPO, sold through Census	GPO, NTIS, Resellers (Bernan), CIS Statistical Universe
Financing Appropriations, Revolving Fund, User Fee	Appropriations	Appropriations
Fee/Free Terms and Conditions, Amount	Paper and CD free through Federal Depository Libraries; Paper for sale via GPO SuDocs, CD for sale by Census; online access free from Census website	Internet (free) does not include all tables in print due to copyright; paper $34 (NTIS) to $49 (GPO); CD-ROM $50 (GPO, NTIS, Census)

Agency *Owner vs. Custodian*	**Department of Commerce, Economics and Statistics Administration, Stat-USA**
Resource Name *Type(s), Format(s), Mediums*	USA Trade/NTDB (National Trade Data Bank)
Authority *Laws, Agency Regulations, OMB Policies*	1988 Omnibus Trade & Competitiveness Act
Beneficiaries (Users), Internal vs. External, Public vs. Private, Foreign	Internal/External; Public/Private/ Foreign
Sources of Data Content	Census Bureau and other federal agencies
Value-Added Contributions Analysts, Brokers, Librarians, Statisticians, Other Specialists	Stat-USA
Distributors In-house vs. Contract, Other Agencies	Agency direct access or through license agreements
Financing Appropriations, Revolving Fund, User Fee	Self-supporting per 15 USC 1527a
Fee/Free Terms and Conditions, Amount	Depository Libraries receive two passwords; subscription based on IP range $400 minimum (class C) to $2750 (class B) some consortial discounts; http://www.statusa.gov/

Department of Defense

Agency *Owner vs. Custodian*	Dept of the Army, Chief, Public Affairs
Resource Name *Type(s), Format(s), Mediums*	*Soldiers Magazine*: the Official U.S. Army Magazine, Published monthly in paper and at <www.dtic.mil/soldiers>
Authority *Laws, Agency Regulations, OMB Policies*	AR 25-30**:** "use of funds for printing the publication was approved by the Secretary of the Army on Sept 2,1986 in accordance with provisions of AR 25-30"
Beneficiaries (Users) Internal vs. External, Public vs. Private, Foreign	Internal users… (focus on enlisted soldiers and non-commissioned officers). Also has a public affairs mission.
Sources of Data Content	Unless otherwise indicated and except for 'by permission' and copyrighted items, materials may be reprinted provided credit is given to *Soldiers Magazine* and the author. All photographs by U.S. Army except as otherwise noted.
Value-Added Contributions Analysts, Brokers, Librarians, Statisticians, Other Specialists	Public Affairs Specialists, Journalists, Photojournalists
Distributors In-house vs. Contract, Other Agencies	In-house distribution of print from U.S. Army Distribution Operations Facility St Louis, MO; Website maintained for U.S. Army by DTIC; (DoD Agency); Defense Technical Information Center, Ft. Belvoir, VA
Financing Appropriations, Revolving Fund, User Fee	Appropriated funds
Fee/Free Terms and Conditions, Amount	Free access to web site; free distribution of print copies within DoD; individual subscriptions available via GPO SuDocs; free through Federal Depository Libraries

Agency *Owner vs. Custodian*	**Department of the Air Force, Office of Public Affairs, Air Force News Agency (AFNEWS)**	**Department of the Air Force**
Resource Name *Type(s), Format(s), Mediums*	*Airman Magazine*: magazine of America's Air Force; published monthly in hard copy and on the web at <www.af.mil/news/airman>	*Airpower Journal*; published quarterly in hard copy and on the web at: Aerospace Power Journal <http://www.airpower.maxwell.af.mil >
Authority *Laws, Agency Regulations, OMB Policies*	Secretary of the Air Force.	Secretary of the Air Force
Beneficiaries (Users), Internal vs. External, Public vs. Private, Foreign	Internal users… (focus on enlisted airmen and non-commissioned officers). Also has a public affairs mission.	"Designed to serve as an open forum for the presentation and stimulation of innovative thinking on military doctrine, strategy…"
Sources of Data Content	"All pictures are USAF photos unless otherwise identified"	"articles may be reproduced with permission" Aerospace Power Journal International, Book & Video Reviews, Air University Review, Contrails, etc.
Value-Added Contributions Analysts, Brokers, Librarians, Statisticians, Other Specialists	Public Affairs Specialists, Journalists, Photojournalists	Editors, Historians, Public Affairs Specialists
Distributors In-house vs. Contract, Other Agencies	Air force maintained website.	Air Force maintained website; "...provided as a public service. Government personnel and the general public may use this system to review and retrieve publicly available government information…selected elements are subject to access restrictions that are identified in parentheses next to the data link".
Financing Appropriations, Revolving Fund, User Fee	Appropriated funds	Appropriated funds.
Fee/Free Terms and Conditions, Amount	Free access to web site; free distribution of print copies within DoD; individual subscriptions available via GPO SuDocs; free through Federal Depository Libraries	Free access to web site; free distribution of print copies within DoD; individual subscriptions available via GPO SuDocs; free through Federal Depository Libraries

Department of Energy

Agency *Owner vs. Custodian*	Department of Energy	Department of Energy
Resource Name *Type(s), Format(s), Mediums*	EDBWeb (Bibliographic Electronic Internet)	PUBScience (Bibliographic Electronic Internet)
Authority *Laws, Agency Regulations, OMB Policies*	DOE Organic Act, *GPRA* DOE G 241.1-1 DOE O 241.1	DOE Organic Act, *GPRA* DOE G 241.1-1 DOE O 241.1
Beneficiaries (Users), Internal vs. External, Public vs. Private, Foreign	All	All
Sources of Data Content	DOE, DOE contractors, other government agencies, professional societies, IEA, ETDE	Peer-reviewed journal literature
Value-Added Contributions Analysts, Brokers, Librarians, Statisticians, Other Specialists		
Distributors In-house vs. Contract, Other Agencies	OSTI (in-house); Commercially available via DIALOG	OSTI (in-house); GPO
Financing Appropriations, Revolving Fund, User Fee	Appropriation, User fee	Appropriation
Fee/Free Terms and Conditions, Amount	Free; Subscriber fee	Free

Agency *Owner vs. Custodian*	Department of Energy	Department of Energy Office of Management and Administration (M&A)
Resource Name *Type(s), Format(s),* *Mediums*	PrePrint Network; Full Text Electronic Internet	DOE Directives; Electronic Database, Graphical Internet Site (WWW)
Authority *Laws, Agency* *Regulations, OMB* *Policies*		
Beneficiaries (Users) Internal vs. External, Public vs. Private, Foreign	All	DOE Employees
Sources of Data Content	Government, academic institutions, professional societies, private research organizations, individual researchers	Dept. of Energy, Office of Management and Administration (M&A)
Value-Added Contributions Analysts, Brokers, Librarians, Statisticians, Other Specialists		Most Documents Available Full-Text in PDF and Other Formats
Distributors In-house vs. Contract, Other Agencies	DOE/OSTI (in-house)	DOE/M&A (in-house)
Financing Appropriations, Revolving Fund, User Fee	Appropriation	Appropriation
Fee/Free Terms and Conditions, Amount	Free	Free

Agency *Owner vs. Custodian*	**Department of Energy (OSTI)**	**Department of Energy (OSTI)**
Resource Name *Type(s), Format(s), Mediums*	DOE Information Bridge; Electronic Database, Graphical Internet Site (WWW)	DOE Reports Bibliographic Database; Electronic Database, Graphical Internet Site (WWW)
Authority *Laws, Agency Regulations, OMB Policies*		
Beneficiaries (Users) Internal vs. External, Public vs. Private, Foreign	DOE Employees, DOE Contractors, General Public	DOE Employees, DOE Contractors, General Public
Sources of Data Content	Laboratories and Administrative Offices of the Dept. of Energy	Dept of Energy Office of Scientific and Technical Information (OSTI)
Value-Added Contributions Analysts, Brokers, Librarians, Statisticians, Other Specialists	Most Documents Available Full-Text in PDF and Other Formats	Good search engine
Distributors In-house vs. Contract, Other Agencies	DOE/OSTI (in-house)	DOE/OSTI (in-house)
Financing Appropriations, Revolving Fund, User Fee	Appropriation	Appropriation
Fee/Free Terms and Conditions, Amount	Free	Free

Department of Health and Human Services

Agency *Owner vs. Custodian*	**Department of Health and Human Services, Food and Drug Administration**	**Department of Health and Human Services, National Cancer Institute/Oxford University Press**
Resource Name *Type(s), Format(s), Mediums*	FDA Consumer (Paper, Online)	Journal of the National Cancer Institute
Authority *Laws, Agency Regulations, OMB Policies*		
Beneficiaries (Users), Internal vs. External, Public vs. Private, Foreign	External, Citizens Information	Internal and external – public, private, and foreign
Sources of Data Content	Food and Drug Administration	Articles written by and/or submitted to agency sponsored publication
Value-Added Contributions Analysts, Brokers, Librarians, Statisticians, Other Specialists	Libraries, full text online providers	Oxford University Press
Distributors In-house vs. Contract, Other Agencies	Paper: GPO Superintendent of Documents, Online: agency website	Oxford University Press
Financing Appropriations, Revolving Fund, User Fee	Appropriations	Appropriations, proceeds from vendor production
Fee/Free Terms and Conditions, Amount	Paper: subscription for sale by GPO SuDocs, free through Federal Depository Libraries; Online free at http://www.fda.gov/fdac/	Federal Depository Libraries one free copy; individuals $155/yr; institutions $235/yr.

Agency *Owner vs. Custodian*	**Department of Health and Human Services, National Institute of Environmental Health**
Resource Name *Type(s), Format(s), Mediums*	Environmental Health Perspectives (Paper, Online)
Authority *Laws, Agency Regulations, OMB Policies*	
Beneficiaries (Users), Internal vs. External, Public vs. Private, Foreign	Internal and External; public and private
Sources of Data Content	
Value-Added Contributions Analysts, Brokers, Librarians, Statisticians, Other Specialists	
Distributors In-house vs. Contract, Other Agencies	Paper: GPO Superintendent of Documents, Online: OCR Services, Inc on behalf of NIEH
Financing Appropriations, Revolving Fund, User Fee	Appropriations, sales
Fee/Free Terms and Conditions, Amount	Paper: subscription for sale by GPO SuDocs, online service free through Federal Depository Libraries (1 password); subscription: individual $65-$400 or institution $571-$1,369 (EHP articles are only available for subscribers; abstracts of articles are free on the agency website: http://ehis.niehs.nih.gov/)

Department of the Interior

Agency *Owner vs. Custodian*	**Department of the Interior, Geological Survey**
Resource Name *Type(s), Format(s), Mediums*	U.S. 7.5" Topographical Quadrangle Maps (Paper)
Authority *Laws, Agency Regulations, OMB Policies*	Title 43 U.S. Code
Beneficiaries (Users), Internal vs. External, Public vs. Private, Foreign	Internal, External: Governments: Citizens
Sources of Data Content	Geological Survey
Value-Added Contributions Analysts, Brokers, Librarians, Statisticians, Other Specialists	Librarians, Specialists
Distributors In-house vs. Contract, Other Agencies	USGS
Financing Appropriations, Revolving Fund, User Fee	Appropriations, Sales
Fee/Free Terms and Conditions, Amount	Free through Federal Depository Libraries; sale by USGS

Department of Labor

Agency *Owner vs. Custodian*	**Department of Labor, Bureau of Labor Statistics**	**Department of Labor, Bureau of Labor Statistics**
Resource Name *Type(s), Format(s), Mediums*	Monthly Labor Review	Occupational Outlook Handbook
Authority *Laws, Agency Regulations, OMB Policies*	29 USC 2 et seq.	29 USC 2 et seq.
Beneficiaries (Users), Internal vs. External, Public vs. Private, Foreign	Wide distribution to parties with an interest in labor subject area	Wide distribution to parties with an interest in labor subject area
Sources of Data Content	Articles received from solicitation in front cover and BLS editorial staff	Survey results form a variety of professional societies, unions, industrial organizations and government agencies
Value-Added Contributions Analysts, Brokers, Librarians, Statisticians, Other Specialists	Statistical and economic analysis provided by contributors including BLS staff	Research and analysis of reported date by BLS staff including occupational analysts
Distributors In-house vs. Contract, Other Agencies	BLS in cooperation with Superintendent of Documents, GPO	BLS in cooperation with Superintendent of Documents, GPO
Financing Appropriations, Revolving Fund, User Fee	User fee for production & distribution; research costs covered by DOL appropriations	User fee for production & distribution; research costs covered by DOL appropriations
Fee/Free Terms and Conditions, Amount	Annual subscription from GPO SuDocs: $31.00 domestic; $38.75 foreign; free through Federal Depository Libraries	BLS Bulletin # 2520 for sale by GPO SuDocs: softbound $49.00; hardbound $51.00; free through Federal Depository Libraries

Agency *Owner vs. Custodian*	Department of Labor, Employment and Training Administration	Department of Labor, Employment Standards Administration
Resource Name *Type(s), Format(s),* *Mediums*	Dictionary of Occupational Titles; (O*NET is the electronic version)	General Wage Determination Guidelines
Authority *Laws, Agency* *Regulations, OMB* *Policies*	29 USC; 20 CFR 601 et seq. (general ETA provisions)	40 USC 276; 29 CFR Parts 1,4 and 5
Beneficiaries (Users), Internal vs. External, Public vs. Private, Foreign	Wide distribution to parties with an interest in labor subject area	Government agencies & government contractors
Sources of Data Content	Research and verification by 40 analysts	Survey results from statutory mandate: all Federal government construction contracts and most contracts for federally assisted construction over $2000.
Value-Added Contributions Analysts, Brokers, Librarians, Statisticians, Other Specialists	Research and verification by many analysts as in the Forward	Follows Davis Bacon Construction Wage Determinations Manual of Operations for collection of data; regional offices analyzes and tabulates wage and fringe benefit data, and determines the adequacy of data provided, and formalizes the survey results.
Distributors In-house vs. Contract, Other Agencies	DOL/ETA	NTIS via web or CD subscription
Financing Appropriations, Revolving Fund, User Fee	User fee for production of 1991 edition; research costs covered by DOL appropriations	User fee
Fee/Free Terms and Conditions, Amount	Available without charge on the Internet: http://online.onetcenter.org/	For sale by NTIS. CD-ROM: $2,000 annual subscription inside the US; $3,000 outside the US; Internet access: $600 annually to search from a single station

Department of State

Agency *Owner vs. Custodian*	**Department of State**
Resource Name *Type(s), Format(s), Mediums*	U.S. Treaties and Other International Agreements (Paper)
Authority *Laws, Agency Regulations, OMB Policies*	1 USC 112a
Beneficiaries (Users), Internal vs. External, Public vs. Private, Foreign	Internal, External: Local, State, Tribal Government, Citizens, Foreign
Sources of Data Content	U.S. Dept of State
Value-Added Contributions Analysts, Brokers, Librarians, Statisticians, Other Specialists	Libraries, full text online providers
Distributors In-house vs. Contract, Other Agencies	Official copy through GPO, online vendors
Financing Appropriations, Revolving Fund, User Fee	Appropriations
Fee/Free Terms and Conditions, Amount	Paper: for sale by GPO SuDocs, free through Federal Depository Libraries; Other: depends on vendor

U.S. Congress

Agency *Owner vs. Custodian*	United States Congress	House of Representatives, Office of the Law Revision Counsel,
Resource Name *Type(s), Format(s), Mediums*	Congressional Record (Paper since 1873, Online since 1994)	U.S. Code (Official copy paper, Online)
Authority *Laws, Agency Regulations, OMB Policies*	U.S. Constitution	U.S. Constitution
Beneficiaries (Users), Internal vs. External, Public vs. Private, Foreign	All users – internal and external-public, private, foreign	Internal, External: Local, State, Tribal Government: Citizens, Foreign
Sources of Data Content	Debates of the United States House of Representatives and Senate	U.S. Congress
Value-Added Contributions Analysts, Brokers, Librarians, Statisticians, Other Specialists	Government Printing Office, various commercial information providers	All
Distributors In-house vs. Contract, Other Agencies	GPO (paper and Internet – GPO Access); Library of Congress (THOMAS); CIS (Academic and Congressional Universe), Other commercial providers	Official copy printed through GPO, online version via GPO Access; Available through commercial vendors
Financing Appropriations, Revolving Fund, User Fee	Appropriations	Appropriations
Fee/Free Terms and Conditions, Amount	Paper for sale by GPO SuDocs, free online via GPO Access and LC Thomas; Other: depends on vendor and mode of access.	Paper for sale by GPO SuDocs, free online via GPO Access, Other: depends on vendor and mode of access.

APPENDIX 30. EUROPEAN COMMISSION GREEN PAPER ON PUBLIC SECTOR INFORMATION IN THE INFORMATION SOCIETY

PUBLIC SECTOR INFORMATION: A KEY RESOURCE FOR EUROPE[136]

TABLE OF CONTENTS[137]

THE ISSUE

1. Public sector information[138] plays a fundamental role in the proper functioning of the internal market and the free circulation of goods, services and people. Without user-friendly and readily available administrative, legislative, financial or other public information, economic actors cannot make fully informed decisions.

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[136] This excerpt is available at http://www.nclis.gov/govt/assess/assess.appen30.pdf.

[137] Only the introduction and Chapter 1 are reproduced in this report. European Commission, *Public Sector Information: A Key Resource For Europe*; *Green Paper On Public Sector Information In The Information Society* (Com(98)585final, Adopted on 20 January 1999); http://europa.eu.int/ispo/docs/policy/docs/com(98)585/gp-intro.html..

[138] The definition of the public sector is an issue for discussion and is further analysed in Chapter III. However, state-owned companies operating under market conditions and subject to private and commercial considerations are clearly not meant to be covered by this Green Paper.

2. Public information in Europe is often fragmented and dispersed and so in many instances it is less clear than intended. This situation is mainly due to differing national legislation[139] on the ways information can be accessed and exploited, and to various practices which hamper the availability of data. The issue at stake is not that Member States should produce more information, but that the information which is already available to the public should be clearer and more accessible to potential users.

3. The ready availability of public information is an absolute prerequisite for the competitiveness of European industry. In this respect, EU companies are at a serious competitive disadvantage compared to their American counterparts, which benefit from a highly developed, efficient public information system at all levels of the administration.140 The timely availability of public sector information is also increasingly important to further the networked economy and valorise its economic potential.

4. In Europe the issue is particularly crucial to SMEs, which have fewer resources to devote to an often difficult search for fragmented information. Ultimately, this has a negative bearing on job creation. The same goes for the difficulties European content firms encounter in comparison to their American counterparts as far as the exploitation of public sector information is concerned.

5. Moreover, in today's economy and society in which the Euro fosters the integration process, the fact that EU citizens and consumers cannot make better use of public information available in other EU Member States is something of an anachronism. In effect, this situation constitutes a challenge to the rights of citizens under the EC Treaties.

6. Whereas the increasing use of electronic media to store and to disseminate public sector information can serve to improve this situation, this has also tended to magnify still further the differences that already exist between Member States. Certain Member States have begun to examine the effects of new technologies on the public service and in particular on access to and exploitation of public sector information.[141] This topic is also important for the enlargement of the EU, where candidate Member States will have to adapt their legal systems and public services to comply with the requirements of the EU membership. Better access to public sector information will contribute to this process.

7. The need for launching a concerted debate at the European level is now more clear and urgent than ever. The objective of this Green Paper is to undertake a broad public consultation involving all the actors concerned with a view to examining the main issues at stake and also to triggering a political discussion at European level. The Green Paper draws on the results of an extensive preliminary consultation process that started in June 1996 and has involved representatives from the Member States, from citizens' and users' groups and from the private sector and more specifically the information industry. All those consulted considered it appropriate to launch a debate on this issue.

8. The subjects addressed in the Green Paper were drawn from the results of this extensive consultation. The reactions to this Green Paper and to the questions it poses will guide future action on this issue. It is clear that further discussion and an exchange of best practice will be necessary with the Member States and the other key actors.

9. Some issues may require technical solutions; some may be dealt with by improving administrative procedures; others will require political solutions. Depending on the results of the public

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[139] See summary of legislation in Annexe 1.

[140] Since the Freedom of Information Act was enacted in 1966, the US government has pursued a very active policy of both access to and commercial exploitation of public sector information. This has greatly stimulated the development of the US information industry. Annexe 3 gives a picture of the current legal framework in the US.

[141] e.g. The UK's Freedom of Information White Paper, the Dutch memorandum `Towards the Accessibility of Government Information' and the French Action Programme "Preparing France's entry into the Information Society".

consultation process, proposals for action could be formulated by the Commission to improve the situation at European level in specific fields. Such proposals will, of course, only be considered where consistent with the subsidiarity and proportionality principles. The type and intensity of any response must be limited to what is necessary to achieve the objectives of the Treaties.

10. Nothing in this Green Paper, nor in any future action which it might lead to, should be seen as an attempt to prejudice national rules governing the system of property ownership, nor the role of any public body in the Member States.

All interested parties, both from the public and private sectors, are strongly encouraged to provide their views on the issues raised in this document. The Commission would be pleased to provide additional background information on existing Commission or national access to public information policies upon request. Answers, comments and requests should be sent to the following address before 1st June 1999.

> European Commission
> Attn. Mr. Huber
> Head of Unit DG XIII/E-1
> Bâtiment EUROFORUM
> Office 1174
> Rue Alcide de Gasperi
> L-2920 Luxembourg
> E-mail address: *pubinfo@cec.be*

Hard copies of all submissions will be made available at the conclusion of the consultation, unless a request for confidentiality is received. A Web site has been opened for the posting of both the Green Paper and submissions received at the address: http://www.echo.lu/legal/en/access.html.

CHAPTER I: WHY IS PUBLIC SECTOR INFORMATION A KEY RESOURCE FOR EUROPE?

I.1 Importance of access for European citizens

Taking advantage of EC rights

1. The EC Treaty has conferred a number of fundamental freedoms on EU citizens. There are, however, **considerable practical difficulties** that can prevent people from exercising those rights. These difficulties result primarily from a **lack of transparency for citizens, employers and administrations at all levels**.[142]

2. In many cases, the information may be spread over different databases or information points of local administrations. A better transparency of public sector information can therefore strengthen the rights conferred by the EC Treaty by improving the practical conditions for their application.

3. The existence of different languages in Europe will continue to hamper to some extent EU-wide access to public sector information. However, the provision of a multilingual information could be facilitated in particular through the use of ICT-technologies.[143]

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[142] See for example the Single Market Scoreboard of May 1998, p. 14ff.

[143] The language engineering activities in Framework Programme IV and V for R&D address the technological aspects of this issue. The R&D-actions are complemented by the market oriented MLIS programme: multiannual programme to promote the linguistic diversity of the Community in the Information Society, O.J. N° L306, 28.11.1996, p. 40.

4. Access to public sector information is **essential for the mobility** of both workers and categories like students and retired people within the EU. A better knowledge of opportunities, circumstances and procedures in countries throughout Europe can help them to make more informed choices about mobility and to take full advantage of the right to move to another EU country.

5. The following example shows that efforts are being made at European level to improve information flows, thus enhancing mobility perspectives for individual **workers** within the European Union.

> *The European Commission has created, together with the Member States the **EURES** Network, with the support of the EU's Interchange of Data between Administrations (IDA) programme. This network aims to interconnect job vacancy databases in every European country to a common European network. This system not only provides job-seekers with job offers, but also with other relevant information that they will need to work in another EU country. At the same time it gives employers the chance to seek the skills they need Europe-wide.* http://europa.eu.int/jobs/eures/.

6. Access to public sector information goes beyond mobility issues. It also has an impact on the way citizens can take advantage of the **internal market**. Lack of information on administrative procedures or on prices, quality and safety conditions of products is one of the barriers that prevent consumers from buying goods and enjoying services from other Member States. It is, for example very difficult to obtain information on importing right-hand drive vehicles (or left-hand, as appropriate) from the British Isles to the Continent or vice-versa.[144] Another example is the field of taxation, where taxpayers find it enormously difficult to obtain full information on international tax arrangements.[145]

7. At the Cardiff European Council, a programme was launched called 'Dialogue with Citizens and Business'. This Community programme is a follow-on to the Citizens First initiative. It addresses citizens and business alike in an effort to encourage greater awareness of the opportunities offered by the Single Market. A better access to public sector information is extremely important in this respect.

Participation in the European integration process

1. A **Citizens' Europe** will only come about if citizens are to participate effectively in the building of the European Union. Such participation implies that they are well informed on issues related to the functioning of the EU and its activities. Access to information at both European and national level can greatly facilitate this.

> *In the last elections of the European Parliament the lack of information on new election rights of European citizens had a negative influence: participation of non-national voters in their Member State of residence was relatively low and only one non-national candidate was elected in her Member State of residence.*[146]

2. Indeed, an adequate access to information of and on the European Union can largely benefit the European integration process. The conclusions of the Cardiff European Council have therefore once more stressed the importance of the need to bring the European Union closer to the citizens by **making it more transparent and closer to everyday life** through the EU's commitment to

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[144] `Listening to Citizens; The difficulties that people face in exercising their rights within the Single European Market'.

[145] ` Ibidem. This report contains more example where lack of information makes life difficult for European citizens that exercise their internal market rights.

[146] See the Second report of the European Commission on Citizenship of the Union, COM/97/230 final.

allowing the greatest possible access to information on its activities.[147] This is a concern for the EU and the Member States together since a significant part of the information related to the European Union activities is actually held at national level. It seems thus important that European citizens have a right of access not only to documents held by the Institutions, but also to EU-related information, in the broadest sense, available in the Member States.

3. To enhance the transparency of EU-action for European citizens, the Treaty of Amsterdam has firmly anchored their right to access documents of the European Parliament, Council and Commission in the EC Treaty.[148] The provisions are particularly important in supporting the democratic process and in increasing the understanding of the European integration. They are an important step, given that a considerable number of the complaints lodged to the European Ombudsman deal with transparency and the access to information

4. The EU institutions pursue an **active policy in the field of dissemination of information** on its functioning and the issues within its responsibility. Annexe 2 gives an overview of the initiatives in this field. The EUR-Lex website is one example.

   EUR-Lex displays, for example, free of charge the Official Journal for a period of forty-five days following publication, the Treaties, the legislation in force and the case-law. It is updated daily in 11 languages with the latest editions of the Official Journal. These are available on the Internet a few hours after the paper version is published. http://europa.eu.int/eur-lex.

5. In spite of these efforts many European citizens would like to have more information on the EU. There is obviously a growing interest for EU-issues that have an impact on citizens' lives.

   68% of the surveyed persons need or would like more information on the European Union. Europeans want to know in particular more on their rights as citizens of the Union (49%), on the Single currency (45%) and on employment (42%), issues that are all absolute priorities for the European Union. Source: Euro barometer n°49, September 1998.

6. Another aspect of a Citizens' Europe is a better access to information on other Member States. It will contribute to citizens' knowledge of other European countries, which in its turn can arouse a **greater interest in the European integration process**. To this end public sector bodies in the different Member States could make information with an interest for non-nationals more accessible to them.

I.2 Public sector information: Opportunities for economic growth and employment

Why is access to public sector information important for businesses ?

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[147] Conclusions of Cardiff Council, 15/16 June 1998.
[148] New article 191a of the EC Treaty provides that:
> 1. "Any citizen of the Union, and any natural or legal person residing or having its registered office in a Member State, shall have a right of access to European Parliament, Council and Commission documents, subject to the principles and the conditions to be defined in accordance with paragraphs 2 and 3.
> 2. General principles and limits on grounds of public or private interest governing this right of access to documents shall be determined by the Council, acting in accordance with the procedure referred to in Article 189b within two years of the entry into force of the Treaty of Amsterdam.
> 3. Each institution referred to above shall elaborate in its own Rules of Procedure specific provisions regarding access to its documents."
> Declaration no. 17 attached to the Maastricht Treaty had already prepared the field for this development.

1. Access to public sector information in the different Member States is a necessity to **take advantage of the existing possibilities for all types of businesses** operating in more than one Member State.

2. The information relevant to business is in the first place of an **administrative** nature. At the moment it is still hard to get hold of a full picture of the rights, duties and procedures that allow a company to operate without difficulties in other European countries.

   58% of companies think that it is likely that access to information would enable them to expand their activities within the European Union. For instance, 66% of firms identified their need for precise information about administrative procedures. 25% of companies think that the persistence of obstacles to trade and business activities could be attributed to a lack of information about EU rules. Source: Single Market Scoreboard, October 1998

3. The lack of administrative information particularly harms the SMEs that do not have the means to find pieces of information that are often dispersed.

4. But also information of a **non-administrative nature** can be extremely important for the decisions of firms. Statistical, financial and geographic information are some examples. This information plays a **key role for businesses** in all sectors of activity in particular when defining business strategies**,** marketing decisions, export or investment plans. Quick and easy access to such information helps businesses to make informed choices. A lack of information may considerably delay decisions on transborder operations.

5. The relevant business information throughout Europe as collected by the Chambers of Commerce is for example not readily available. An initiative at European level has been taken to improve the situation in this field (see the box below).

   ***EBR II Project**. The European Business Register project has been established because the absence of a fully integrated information service on European Companies is a **potential threat to the effective operation of the Single European Market**. Aim of the project is to ensure that basic information on all companies in Europe is available throughout Europe without barriers due to differing technologies, languages, registration systems, networks etc. The EBR that is funded under the EU's Telematics Applications Programme (TAP) has become fully operational in December 1998 and now allows electronic access to business data of 10 EU Member States plus Norway.* http://www.ebr.org/.

6. Also statistical information on European markets and economic trends is in many cases not timely available. This problem is however rather linked to the collection of national statistics (differing national methodologies, deadlines for submission to Eurostat, quality of indicators, decrease burden for SMEs, …) than to the issue of access per se.

7. The absence of accessible public sector information may **create a competitive disadvantage** for the foreign firms compared with local firms that can draw upon their own experience on the local situation. This is, for example true for insurance services that largely depend on specific local information on risks etc.

8. It also has a negative effect on companies that, by their nature, have a transnational vocation. International transport companies offering their services throughout Europe are an example of this. Accurate local information -geographic information, traffic information and information on the weather amongst others- , is important for their daily operations.

9. Both administrative and non-administrative information are also relevant for **public procurement.**[149] Transparency of Government action in this field is a prerequisite to the achievement of a real internal market. Access to information on the local situation is necessary to make the rules work efficiently and to optimise fair chances for all firms involved. Since the information at stake is not always transparent, public procurement is often in practice still a national affair notwithstanding EU legislation.

10. Another example where the absence of transparency of the information leads to negative results at European level, is patent information. The European Patent Office estimates that every year more than 18 billion Euro is spent on research that has been done before. Better accessibility of information on the state of the art of research, could decrease this amount.

    Esp@cenet. Together with the Member States of the European Patent Organisation and the European Commission, the European Patent Office has launched a new service called esp@cenet, which is accessible via the Internet. The main aim of this new service is to provide users with a readily accessible source of free patent information (over 30 million patent documents). It also aims to improve awareness at national and international level, in particular among small and medium-sized enterprises, of the kind of information that is publicly accessible. http://www.european-patent-office.org/.

11. The conclusion that **access to public sector data is highly relevant for businesses throughout Europe** is backed by the recent Report 'Managing Change' of the High level Group on economic and social implications of industrial change.[150] It indicates as an immediate priority to 'enhance competitiveness by fully opening the European market in telecommunications and data services, and to increase freedom of access to government and other state owned data'.

Public sector information: A potential to further explore and exploit

1. The public sector, by nature of its size and scope of activities, represents the **biggest single information content resource** for the creation of value-added information content and services. Studies have shown that the bulk of commercial information services in the EU information market consists of services in areas where the public sector holds very important resources.

2. Figure 2 clearly shows that public sector information is a **key resource for a very large part of information services** being either the core subject (government/political information, legal information) or an essential raw material (company profile, patent information, scientific, technical and medical –STM- information, etc.).

3. Public sector information is therefore a **prime information content**, essential to the information industry and a key enabler for electronic commerce applications.[151]

4. The information content industry is growing at an impressive rate and some four million people are employed in the content sector in Europe.[152] Much of this growth will be within SMEs trying

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[149] The Special sectorial report on public procurement, November 1997, illustrates the importance of access to information for this issue. See the report on European Commission, DG XV web site at the address http://europa.eu.int/comm/dg15/en/publproc/.

[150] `Managing change', High level group on economic and social implications of industrial change, Final Report, November 1998. The Special European Council of Luxembourg (21-22 November 1997) invited this Group to analyse industrial changes in the EU and to look at ways of anticipating and dealing with change and its economic and social effects.

[151] For a further analysis on recent trends and critical roles of content and the content industry within the network economy, see CONDRINET Study (CONtent and Commerce DRIven Strategies in Global NETworks), October 1998, commissioned by the European Commission and conducted by Gemini Consulting.

to exploit the potential to manage and add-value to information. The emergence and development of these highly dynamic companies need to be fostered in particular, as they are **essential for the creation of new jobs in the 21st century**.

5. The European information industry is competing in a global market. During the preparatory process that has led to this Green Paper, European information industry representatives have strongly and repeatedly expressed their concerns about the **competitive disadvantage of European** publishers vis-à-vis their counterparts**.**

6. Better **possibilities for the exploitation of public sector information could partly redress this situation** and would lead to new opportunities for job creation. In the US the favourable conditions for this type of exploitation has already boosted the information industries.

7. There are **hardly any rules in Europe on conditions for exploitation of public sector information by the private sector**. Guidelines for the synergy of Public and Private Sectors in the Information Market were published by the Commission in 1989. Similar guidelines were produced by the UK Department of Trade and Industry in 1985. In 1994, a French Prime Minister's circular was published and a Memorandum of Understanding was adopted by the Dutch government in 1997.

8. Although these are good initiatives, there is no clear and consistent set of principles throughout Europe. This **lack of clear and consistent principles** means that European industry finds itself in a competitive disadvantage vis a vis its US competitors. In some cases this has lead to leading European companies investing in products based on US public sector information.

   The British/Dutch Reed Elsevier plc group, has acquired the US based LEXIS-NEXIS company, a leading provider of online information services and management tools for a variety of professionals (1.4 billion documents in more than 8,692 databases, 1.5 million subscribers, 1200 employees world wide). They are amongst others specialised in legal information.

9. Pilot projects within the European INFO2000 programme[153] have shown that private partners **are interested in cross-border collaboration with public sector bodies** to exploit public sector information and that there **is a real potential to be further explored and exploited at European level.**

   The EU potential as shown by INFO 2000 call for proposals
   In 1998, in the framework of the INFO2000 programme, the European Commission invited proposals for shared-cost pilot, or exploratory projects. The objective of the Call was to make the information resources held by the public sector more readily available for exploitation in European multimedia content services
   A total of 141 proposals was received by the closing date. The total cost of work proposed amounted to 109.7 MECU, and the total EU contribution requested came to 50.6 MECU. The over subscription of the Call was, therefore, in the order of 7, given the indicative budget resource of 7 MECU.

10. In some cases, the commercial reuse of public sector information may however raise questions as to the **boundaries and limitations on the roles of the different actors**. Once private sector interests enter the market for public information the safeguarding of **access for all** citizens may become more difficult. At the same time, if the public sector adds value to its own information,

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[152] European Information Technology Observatory, 1998, Content data include media, publishing, marketing and advertising sectors.
[153] INFO2000 programme (Council decision of 20 May 1996, O.J. N° L 129, 30.5.1996, p. 24).

launching commercial information products onto a hitherto private information market, the issue of **fair competition** may be raised.

11. These issues and possible obstacles at European level to the exploitation of public sector information will be addressed in chapter III.[154]

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[154] Chapter III is not included in this report, but is available from the European Commission website at http://europa.eu.int/ISPO/docs/policy/docs/COM(98)585/iii1.

APPENDIX 31. A BIBLIOGRAPHY OF GOVERNMENT INFORMATION DISSEMINATION RESOURCES

Compiled by Sarah T. Kadec and Barbara Whiteleather, NCLIS Consultants[155]

Compilation of this bibliography was undertaken by NCLIS in support of its efforts to examine ways to improve government information dissemination to the public. For the most part, the items listed cover the years 1995 to date, except for older items considered classics or deemed as heavily impacting government policies and programs. Interagency efforts to address the same issues, such as the Solomon Island conferences on public access from 1990-1994, are included. It also includes a variety of items provided to NCLIS during the course of this study by organizations surveyed, members of Commission Panels, Commission experts, or interested individuals.

The bibliography makes no effort to duplicate statutes referred to either in the 1996 Congressional Research Service "Compilation"[156] or the NCLIS update of that document included in Appendix 35.[157] Furthermore, it was developed independently of the Bibliography of National Information Policies,[158] compiled by Toni Carbo, Dean of the School of Information Sciences, University of Pittsburgh, and her associates, so there may be some overlap between the two bibliographies.

NCLIS recognizes that this listing is far from complete and may have missed many important documents that would have provided the panels and the staff more valuable information for analysis. However, we believe that those listed here add considerably to the body of knowledge on this all important topic.

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[155] Available at http://www.nclis.gov/govt/assess/assess.appen31.pdf.

[156] Jane Bortnick Griffith, Harold C. Relyea, and Frances A. Buffalo, *Compilation of Statutes Authorizing Dissemination of Government Information to the Public*, Washington, DC: Library of Congress, Congressional Research Service (March 29, 1996).

[157] Recent laws on dissemination of public information are identified in Appendix 33 in Volume 3 of this report: Index to a Compilation of Recent Federal Statutes Pertaining to Public Information Dissemination, and in Appendix 35 in Volume 4: A Compilation of Recent Federal Statutes Pertaining to Public Information Dissemination, which includes excerpts of relevant provisions. Appendices 33 and 35 are also available at http://www.nclis.gov/govt/assess/assess.appen33.pdf and http://www.nclis.gov/govt/assess/assess.appen35.pdf, respectively.

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APPENDIX 32. A BIBLIOGRAPHY OF NATIONAL INFORMATION POLICIES

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APPENDIX 33. INDEX TO A COMPILATION OF RECENT FEDERAL STATUTES PERTAINING TO PUBLIC INFORMATION DISSEMINATION

Compiled by Sarah T. Kadec, NCLIS Consultant[161]

Based on Research Performed by Margaret Hansen and Blane Dessy
Library U.S. Department of Justice

As part of its Comprehensive Assessment of Public Information Dissemination, the National Commission on Libraries and Information Science (NCLIS) was charged with identifying reforms necessary for improvement in the dissemination of government information in the electronic era. In addition, Senator Lieberman specifically requested that the Commission review the Paperwork Reduction Act and make recommendations relative to its anticipated reauthorization in FY 2001.

The Commission understood that a major task in the assessment would be the identification of current laws and regulations that impact this important area of government responsibility. To do this, it was necessary to examine laws and regulations that govern dissemination, both government-wide and by specific agencies. Extensive use was made of the earlier "Compilation of Statutes Authorizing Dissemination of Government Information to the Public" prepared by the Congressional Research Service that was issued March 29, 1996.[162]

The Commission feels strongly that improvements in the dissemination of government information to the public cannot be made without changes in existing, often contradictory, laws under which the individual agencies and the government as a whole now operate.

Due to the time constraints in the present study, it was impossible for the Commission to complete a comprehensive review and update of the 1996 CRS compilation. However, the Library Staff of the Department of Justice, particularly Margaret Hansen and Blane Dessy, undertook a search of WESTLAW to identify major pieces of legislation from 1995 through mid-2000 that pertained to information dissemination. This search identified 52 Public Laws that placed requirements on agencies and specific programs for the collection and dissemination of information to specialized audiences or to the public in general.

The Commission considers this statutory examination to be extremely important. It also recognized that it was not possible to effectively conclude such an examination during the course of this study. Therefore it chose to provide in this appendix an index by category of the relevant sections of the public laws passed during the 104th through the 106th Congress and to defer the preparation of a more comprehensive compilation. The further identification of these statutes, along with extracts of the relevant text, will be issued as a separate volume in late February or early March 2001.[163]

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[161] Available at http://www.nclis.gov/govt/assess/assess.appen33.pdf.

[162] Jane Bortnick Griffith, Harold C. Relyea and Frances A. Buffalo, *Compilation of Statutes Authorizing Dissemination of Government Information to the Public,* Washington, DC: Library of Congress, Congressional Research Service (March 29, 1996). This compilation was prepared for the *Study to Identify Measures Necessary for a Successful Transition to a More Electronic Federal Depository Library Program; Report to the Congress* (GPO Publication 500.11), Washington, DC: Government Printing Office, 1996.

[163] Appendix 35 is in Volume 4 of this study; it is available at http://www.nclis.gov/govt/assess/assess.vol4.pdf.

The classification scheme developed by the Commission is subdivided into two major categories. The first category (I) deals with the end result or objective that Congress endeavored to accomplish by passing the law, and the second category (II) deals with the means (the information vehicle) prescribed by Congress for accomplishing the end result.

The two general categories and seven specific categories used in this study are as follows:

I. Classification based on the end result congress intended

I.A. Publicizing the entitlement to and procedures for applying for a tangible government public benefit or service.

I.B. Publicizing opportunities for the private sector to do business with or for the federal government, with itself domestically, or abroad.

I.C. Publicizing and disseminating the results of government's performance and operations.

I.D. Publicizing federal level actions, decisions, and opportunities through inter and intra-governmental information interchanges.

II. Classification based on the means congress prescribed in the statute

II.A. Enacting a law to (1) broadly facilitate public information access to government information and/or (2) encourage agency dissemination of government information to the public.

II.B. Establishing and maintaining a general government information facility, source, network, or other resource, both pre-electronic and electronic, to assist, inform, enlighten, or educate the public.

II.C. Establishing, making available and accessible, and periodically updating the data or information content of a specific information service, system, or other resource impacting the public.

It is apparent from the Agency surveys received as a part of this study that not all agencies recognize their responsibilities under general government-wide requirements for information dissemination. This may be due to their overriding concern to meet their obligations under specific authorizing and program legislation. Thus it is essential that Congress make clear its intent that government information to the public is a responsibility of every agency through specific language in the authorizing legislation for each agency.[164] Congress could then eliminate language to this effect in many of its other statutes—those covering specific issues of general concern (such as health and consumer safety) and agency programs (such as soil conservation and water pollution). A central office responsible for information dissemination could eliminate the need for many of these individual pieces of legislation.[165]

It is obvious from what has been identified below, that much more needs to be done. A large body of laws and regulations need to be examined and brought into line with the most efficient and effective ways of disseminating government information to the public through the numerous technologies available today. This review and analysis should begin as soon as possible before additional statutes

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[164] This is addressed in Recommendation 3 in Volume 1, http://www.nclis.gov/govt/assess/assess.vol1.pdf.
[165] This is addressed in Recommendation 2 in Volume 1, http://www.nclis.gov/govt/assess/assess.vol1.pdf.

further fragment information programs meant to assist the public in participating in governmental processes and in improving the quality of life for all Americans.

This cursory examination of existing laws shows clearly that the frequency with which Congress feels the need to impose requirements for information dissemination on agency after agency is a large part of the problem the public has in finding and accessing government information. That a re-examination of the existing statutes is not only needed, but necessary, is clear. The Commission believes that further identification and analysis is necessary to adequately address overlap, duplication, contradictions and fragmentation in the existing laws.[166]

INDEX OF STATUTES BY CATEGORY

As an integral part of the its Comprehensive Assessment of Public Information Dissemination, the Commission attempted to identify pertinent laws related to information dissemination passed since the Congressional Research Service completed its *Compilation of Statutes Authorizing Dissemination of Government Information to the Public*.[167] That compilation included laws in effect at the end of 1995.

The entries in this index are arranged under the category assigned to each pertinent section of a law. The entries include the public law number, its title and date of enactment. Under each law, the section pertaining to information dissemination is identified, followed by the appropriate Statutes-at-Large citation. The information provided should permit a user to locate the pertinent portion of any of the laws identified.

I. Classification based on the end result congress intended

I.A. Publicizing the entitlement to and procedures for applying for a tangible government public benefit or service:

Public Law 104-182 – Safe Drinking Water Act Amendments of 1996, August 6, 1996.

> Sec. 119(f)(4)(D). 110 STAT. 1649

Public Law 105-114 – Veterans' Benefits Act of 1997, November 21, 1997.

> Sec. 202(b)(2)(D). 111 STAT. 2283

Public Law 105-135 – Small Business Reauthorization Act of 1997, December 2, 1997.

> Sec. 709. 111 STAT. 2638

Public Law 105-244 – Higher Education Amendments of 1998, October 7, 1998.

> Sec. 486(a). 112 STAT. 1741
> Sec. 486(c)(2) and (c)(3). 112 STAT. 1742
> Sec. 490(C)(j)(2). 112 STAT. 1755
> Sec. 810(b). 112 STAT. 1808

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[166] This is addressed in Recommendation 3 in Volume 1, http://www.nclis.gov/govt/assess/assess.vol1.pdf.
[167] Griffith, op. cit.

Public Law 106-170 – Ticket to Work and Work Incentives Improvement Act of 1999, December 17, 1999.

  Sec. 1149(a)(2)(B)(i). 113 STAT. 1887

I.B. Publicizing opportunities for the private sector to do business with or for the federal government, with itself domestically, or abroad

Public Law 104-127 – Federal Agriculture Improvement and Reform Act of 1996, April 4, 1996.

  Sec. 747(e)(4)(C)(ii). 110 STAT. 1126

Public Law 105-17 – Individuals with Disabilities Education Act Amendments of 1997, June 4, 1997.

  Sec. 682(a). 111 STAT. 149

Public Law 105-20 – Drug-Free Communities Act of 1997, June 27, 1997.

  Sec. 1033. 111 STAT. 230

Public Law 105-135 – Small Business Reauthorization Act of 1997, December 2, 1997.

  Sec. 501(b)(4)(C). 111 STAT. 2622

Public Law 105-178 – Transportation Equity Act for the 21st Century, June 9, 1998.

  Sec. 5505(c)(2)(F). 112 STAT. 441

Public Law 105-185 – Agricultural Research, Extension, and Education Reform Act of 1998, June 23, 1998.

  Sec. 403(c). 112 STAT. 568
  Sec. 403(c)(4). 112 STAT. 569
  Sec. 403(d), (d)(2) and (d)(4). 112 STAT. 569
  Sec. 403(f). 112 STAT. 569
  Sec. 408(c). 112 STAT. 575

Public Law 105-220 – Workforce Investment Act of 1998, August 7, 1998.

  Sec. 16. 112 STAT. 1114

Public Law 105-244 – Higher Education Amendments of 1998, October 7, 1998.

  Sec. 120(e)(1). 112 STAT. 1598
  Sec. 120(f)(3)(A)(ii). 112 STAT. 1599

Public Law 105-278 – Charter School Expansion Act of 1998, October 22, 1998.

>   Sec. 3(d)(2)(7). 112 STAT. 2685
>   Sec. 3(d)(6)(A). 112 STAT. 2685
>   Sec. 10305(a)(5). 112 STAT. 2687

Public Law 106-50 – Veterans Entrepreneurship and Small Business Development Act of 1999, August 17, 1999.

>   Sec. 604(a)(2) and (3). 113 STAT. 249

I.C. Publicizing and disseminating the results of government's performance and operations.

Public Law 104-50 – Department of Transportation and Related Agencies Appropriations Act, 1996, November 15, 1995.

>   Sec. 345. 109 STAT. 459

Public Law 104-127 – Federal Agriculture Improvement and Reform Act of 1996,
April 4, 1996.

>   Sec. 261(a)(5)(C). 110 STAT. 972

Public Law 104-134 –Omnibus Consolidated Rescissions and Appropriations Act of 1996, April 26, 1996

>   Sec. 520(b)(3). 110 STAT. 1321-250

Public Law 104-193 – Personal Responsibility and Work Opportunity Reconciliation Act of 1996, August 22, 1996.

>   Sec. 413(c). 110 STAT. 2153
>   Sec. 731(a)(1). 110 STAT. 2305

Public Law 104-262 – Veterans' Health Care Eligibility Reform Act of 1996, October 9, 1996.

>   Sec. 334(h). ref. 7320. 110 STAT. 3203
>   Sec. 334(b)(3). ref. 7320. 110 STAT. 3204

Public Law 104-297 – Sustainable Fisheries Act, October 11, 1996.

>   Sec. 404(b)(4). 110 STAT. 3610
>   Sec. 404(d). 110 STAT. 3610
>   Sec. 401(a). 110 STAT. 3617

Public Law 104-324 – Coast Guard Authorization Act of 1996, October 19, 1996.

>   Sec. 203. 110 STAT. 3907

Public Law 105-17 – Individuals with Disabilities Education Act Amendments of 1997, June 4, 1997.

>   Sec. 607(d)(1). 111 STAT. 48
>   Sec. 611(i)(5)(D). 111 STAT. 60
>   Sec. 635(a)(6). 111 STAT. 109
>   Sec. 651(a)(6)(G). 111 STAT. 124
>   Sec. 672(c)(2)(D). 111 STAT. 138
>   Sec. 672(d)(2)(E). 111 STAT. 138
>   Sec. 673(d)(2)(E). 111 STAT. 141
>   Sec. 673(d)(2)(G). 111 STAT. 141
>   Sec.673(d)(2)(J). 111 STAT. 141
>   Sec. 681(a)(1). 111 STAT. 146
>   Sec. 681(a)(3). 111 STAT. 146
>   Sec. 687(b)(2)(F) and (G). 111 STAT. 155
>   Sec. 687(c)(3) and (4). 111 STAT. 155

Public Law 105-78 – Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Act, 1998, November 13, 1997.

>   Sec. 49B(c)(2)(B)(ii). 111 STAT. 1520

Public Law 105-115 – Food and Drug Administration Modernization Act of 1997, November 21, 1997.

>   Sec. 506(b)(2)(B). 111 STAT. 2309
>   Sec. 506(b)(3)(D). 111 STAT. 2310
>   Sec. 506(d)(1). 111 STAT. 2310
>   Sec. 551(a). 111 STAT. 2356
>   Sec. 551(b)(3) and (b)(4). 111 STAT. 2357
>   Sec. 551(b)(6) and (b)(6)(A)(ii). 111 STAT. 2357
>   Sec. 551(b)(6)(A)(v) and (A)(vi). 111 STAT. 2357
>   Sec. 552(a), (a)(1)(A) and (a)(1)(B). 111 STAT. 2358
>   Sec. 552(b)(4). 111 STAT. 2358
>   Sec. 553(a) and (a)(1). 111 STAT. 2359
>   Sec. 553(b). 111 STAT. 2359
>   Sec. 554(a) and (b). 111 STAT. 2359
>   Sec. 554(c)(1). 111 STAT. 2359
>   Sec. 554(c)(1)(A)(ii). 111 STAT. 2360
>   Sec. 554(d)(1). 111 STAT. 2360
>   Sec. 554(d)(3)(B). 111 STAT. 2361
>   Sec. 555(a)(1) and (a)(2). 111 STAT. 2361
>   Sec. 555(b)(1). 111 STAT. 2361
>   Sec. 555(b)(2), (b)(3), (c)(1) and (c)(2). 111 STAT. 2362
>   Sec. 557(a) and (b). 111 STAT. 2363
>   Sec. 557(d). 111 STAT. 2363
>   Sec. 557(b)(z). 111 STAT. 2364

Public Law 105-160 – National Sea Grant College Program Act, March 6, 1998.

>   Sec. 204(c)(4)(C). 112 STAT. 23

Public Law 105-178 – Transportation Equity Act for the 21st Century, June 9, 1998.

> Sec. 502(c)(1). 112 STAT. 424
> Sec. 503(a)(4). 112 STAT. 427
> Sec. 5109(g)(1)(A). 112 STAT. 439
> Sec. 5505(g)(1). 112 STAT. 442

Public Law 105-185 – Agricultural Research, Extension, and Education Reform Act of 1998, June 23, 1998.

> Sec. 101(d)(1). 112 STAT. 527
> Sec. 1672A(e)(1)(C). 112 STAT. 555
> Sec. 403(b)(1). 112 STAT. 568
> Sec. 618(b)(4). 112 STAT. 607

Public Law 105-220 – Workforce Investment Act of 1998, August 7, 1998.

> Sec. 242(c)(1)(D). 112 STAT. 1075
> Sec. 243(1)(B). 112 STAT. 1078
> Sec. 243(2)(D)(iii). 112 STAT. 1078
> Sec. 15(a)(1)(C). 112 STAT. 1083
> Sec. 15(a)(1)(E) and (1)(F), 112 STAT. 1083
> Sec. 15(a)(1)(H)(i). 112 STAT. 1083
> Sec. 10(a)(4). 112 STAT. 1111
> Sec. 200(4) and (4)(A) and (4)(B). 112 STAT. 1168
> Sec. 202(b)(2). 112 STAT. 1169
> Sec. 202(b)(4). 112 STAT. 1169
> Sec. 202(b)(5)(B). 112 STAT. 1169
> Sec. 202(b)(7). 112 STAT. 1170
> Sec. 202(c)(1), (c)(2) and (2)(A), (2)(B), and (2)(C). 112 STAT. 1170
> Sec. 202(c)(2)(D). 112 STAT. 1171
> Sec. 202(h)(2)(E) and (2)(F). 112 STAT. 1172
> Sec. 204(b)(3)(B)(i). 112 STAT. 1176
> Sec. 204(b)(3)(B)(ii) and (iii). 112 STAT. 1177
> Sec. 204(b)(4)(A)(i). 112 STAT. 1178
> Sec. 204(b)(5)(A). 112 STAT. 1179
> Sec. 204(b)(17)(B)(i) and (iii). 112 STAT. 1181
> Sec. 303(b)(4)(F). 112 STAT. 1192
> Sec. 401(a)(1). 112 STAT. 1199

Public Law 105-225 – Patriotic and National Observances, Ceremonies, and Organizations, August 12, 1998.

> Sec. 220302(2). 112 STAT. 1463
> Sec. 220503(11). 112 STAT. 1467
> Sec. 220524(8). 112 STAT. 1474

Public Law 105-244 – Higher Education Amendments of 1998, October 7, 1998.

Sec. 131(b). 112 STAT. 1603
Sec. 141(f)(2). 112 STAT. 1609
Sec. 206(d). 112 STAT. 1631
Sec. 402H(b)(1). 112 STAT. 1656
Sec. 402H(c). 112 STAT. 1656
Sec. 404G(c). 112 STAT. 1663
Sec. 603(b)(1), and (b)(2)(A), (B), (C) and (E). 112 STAT. 1777
Sec. 603(b)(2)(F). 112 STAT. 1778
Sec. 605(a)(8). 112 STAT. 1781
Sec. 606(a). 112 STAT. 1781
Sec. 606(b)(5). 112 STAT. 1781
Sec.742(c)(1). 112 STAT. 1797
Sec. 744(c)(3) and (4). 112 STAT. 1798
Sec. 762(b)(3). 112 STAT. 1802
Sec. 826(b)(5). 112 STAT. 1816
Sec. 210(a). 112 STAT. 1832

Public Law 105-277 – Omnibus Consolidated and Emergency Supplemental Appropriation Act, 1999, October 21, 1998

Sec. 416(b)(1). 112 STAT. 2681-47.
Sec. 120(c)(1). 112 STAT. 2681-70
Sec. 124(h). 112 STAT. 2681-74
Sec. 590. 112 STAT. 2681-210
Sec. 606(5). 112 STAT. 2681-223
Sec. 343(a). 112 STAT. 2681-297
Sec. 485D(a). 112 STAT. 2681-387
Sec. 2258(a) and (b)(2). 112 STAT. 2681-405
Sec. 1211(b). 112 STAT 2681-410
Sec. 301(b). 112 STAT 2681-410
Sec 220512(o)(4). 112 STAT. 2681-609
Sec. 1303(b)(2)(E). 112 STAT. 2681-732
Sec. 2812(b)(1). 112 STAT. 2681-853

Public Law 105-278 – Charter School Expansion Act of 1998, October 22, 1998.

Sec. 3(d)(6)(B)(1). 112 STAT. 2686
Sec. 10305(a)(4)(E). 112 STAT. 2687

Public Law 105-309 – Technology Administration Act of 1998, October 30, 1998.

Sec. 8(c)(1). 112 STAT. 2937

Public Law 105-310 –Money Laundering and Financial Crimes Strategy Act of 1998, October 30, 1998.

Sec. 5351(b)(2). 112 STAT. 2946

Public Law 105-332 – Carl D. Perkins Vocational and Applied Technology Education Amendments of 1998, October 31, 1998

      Sec. 2(4). 112 STAT. 3077
      Sec. 114(c)(1)(A). 112 STAT. 3090
      Sec. 114(c)(5)(iii)(II). 112 STAT. 3093
      Sec. 114(c)(5)(C). 112 STAT. 3093
      Sec. 114(c)(6)(A). 112 STAT. 3093
      Sec. 118(a)(1)(B) and (C). 112 STAT. 3100

Public Law105-392 – Health Professions Education Partnerships Act of 1998, November 13, 1998.

      Sec. 751(1)(A)(vii). 112 STAT. 3542
      Sec. 753(a)(2)(B). 112 STAT. 3544
      Sec. 797(a). 112 STAT. 3557
      Sec. 803(a). 112 STAT. 3564
      Sec. 201(e)(3). 112 STAT. 3584
      Sec. 399G(c). 112 STAT. 3593

Public Law 105-394 – Assistive Technology Act of 1998, November 13, 1998.

      Sec. 104(c)(2)(B). 112 STAT. 3650
      Sec. 211(c) and (c)(1) and (c)(2). 112 STAT. 3654
      Sec. 215(b)(3). 112 STAT. 3656
      Sec. 216(b)(1)(A). 112 STAT. 3656

Public Law 106-40 – Chemical Safety Information, Site Security and Fuels Regulatory Relief Act, August 5, 1999.

      Sec. 3(a)(H)(vi). 113 STAT. 211
      Sec. 3(a)(H)(vii)(II). 113 STAT. 211
      Sec. 3(a)(H)(xi)(III). 113 STAT. 213
      Sec. 3(a)(H)(xii)(II). 113 STAT. 213

Public Law 106-65 – National Defense Authorization Act for Fiscal Year 2000, October 5, 1999

      Sec. 723(c)(2). 11e STAT. 696
      Sec. 723(d)(3)(D). 113 STAT. 697
      Sec. 914(c). 113 STAT. 721

Public Law 106-113 – An Act – Making Consolidated Appropriations for the Fiscal Year Ending September 30, 2000, and for other purposes, November 29, 1999.

      Sec. 526. 113 STAT. 1501A-90
      Sec. 332(a). 113 STAT. 1501A-197
      Sec. 211(A)(2)(E). 113 STAT. 1501A-347
      Sec. 108(b)(3). 113 STAT. 1501A-417

Public Law 106-129 – Healthcare Research and Quality Act of 1999, December 6, 1999.

       Sec. 902(a). 113 STAT. 1654
       Sec. 911(a) and (b)(1). 113 STAT. 1656
       Sec. 912(a)(2)(B). 113 STAT. 1656
       Sec. 912(a)(2)(C) and (2)(F). 113 STAT. 1657
       Sec. 912(c)(3). 113 STAT. 1658
       Sec. 915(a)(2). 113 STAT. 1659
       Sec. 916(a)(2). 113 STAT. 1660
       Sec. 916(d)(1). 113 STAT. 1661
       Sec. 921(b)(2)(B). 113 STAT. 1663
       Sec. 923(b)(2). 113 STAT. 1666
       Sec. 924(a)(1) through (a)(2). 113 STAT. 1667
       Sec. 924(b). 113 STAT. 1667
       Sec. 330D(a). 113 STAT. 1671

Public Law 106-148 – National Geologic Mapping Reauthorization Act of 1999, December 9, 1999.

       Sec. 4(d)(C)(ii)(II) and (III). 113 STAT. 1721

Public Law 106-170 – Ticket to Work and Work Incentives Improvement Act of 1999, December 17, 1999.

       Sec. 1149(a)(1). 113 STAT. 1887
       Sec. 1149(a)(2)(C). 113 STAT. 1887

Public Law 106-177 – Child Abuse Prevention and Enforcement Act, March 10, 2000.

       Sec. 103(28). 114 STAT. 35

Public Law 106-181 – Wendell H. Ford Aviation Investment and Reform Act for the 21st Century, April 5, 2000.

       Sec. 508(b)(4)(B). 114 STAT. 140
       Sec, 508(b)(15). 114 STAT. 140

Public Law 106-193 – Methane Hydrate Research and Development Act of 2000, May 2, 2000.

       Sec. 3(e)(3). 114 STAT. 236

Public Law 106-200 – Trade and Development Act of 2000, May 18, 2000.

       Sec. 506(d)(2). 114 STAT. 304

Public Law 106-224 – Agriculture Risk Protection Act of 2000, June 20, 2000

       Sec. 307(e)(1). 114 STAT. 436

1.D. Publicizing federal level actions, decisions, and opportunities through inter and intra-governmental information interchanges.

Public Law 104-50 – Department of Transportation and Related Agencies Appropriations Act, 1996, November 15, 1995.

> Sec. 315. 109 STAT. 455

Public Law 104-127 – Federal Agriculture Improvement and Reform Act of 1996, April 4, 1996.

> Sec. 1658(g)(3). 110 STAT. 1115

Public Law 104-193 – Personal Responsibility and Work Opportunity Reconciliation Act of 1996, August 22, 1996.

> Sec. 345(a)(j)(1). 110 STAT. 2237
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II. Classification based on the means congress prescribed in the statute

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Public Law 105-244 – Higher Education Amendments of 1998, October 7, 1998.

       Sec. 131(d)(E). 112 STAT. 1604
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Public Law 105-332 – Carl D. Perkins Vocational and Applied Technology Education Amendments of 1998, October 31, 1998

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Public Law 105-392 – Health Professions Education Partnerships Act of 1998, November 13, 1998.

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Public Law 106-40 – Chemical Safety Information, Site Security and Fuels Regulatory Relief Act, August 5, 1999.

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Public Law 106-129 – Healthcare Research and Quality Act of 1999, December 6, 1999.

    Sec. 901(b)(2). 113 STAT. 1654
    Sec. 924(a)(3) and (a)(4). 113 STAT. 1667

Public Law 106-181 – Wendell H. Ford Aviation Investment and Reform Act for the 21st Century, April 5, 2000.

    Sec. 44721(d) and (d)(1). 114 STAT. 150
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Public Law 106-200 – Trade and Development Act of 2000, May 18, 2000.

    Sec. 105(d). 114 STAT. 255

Public Law 106-224 – Agriculture Risk Protection Act of 2000, June 20, 2000

    Sec. 144(3)(B)(i). 114 STAT. 391

Public Law 106-245 – Radiation exposure Compensation Act Amendments of 2000, July 10, 2000

>   Sec. 417C(b)(3). 114 STAT. 509

II.B. Establishing and maintaining a general government information facility, source, network, or other resource, both pre-electronic and electronic, to assist, inform, enlighten, or educate the public.

Public Law 104-59 – National Highway System Designation Act of 1995, November 28, 1995.

>   Sec. 358(b)(2). 109 STAT. 625.

Public Law 104-182– Safe Drinking Water Act Amendments of 1996, August 6, 1996.

>   Sec. 119(g)(2). 110 STAT. 1650

Public Law 105-78 – Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Act, 1998.

>   Sec.409B(c)(2)(B)(iv). 111 STAT. 1520

Public Law 105-115 – Food and Drug Administration Modernization Act of 1997, November 21, 1997.

>   Sec. 113(j)(1)(A) and (j)(2). 111 STAT. 2311

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>   Sec. 29(g)(2)(B)(ii)(VII). 111 STAT. 2614

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Public Law 105-394 – Assistive Technology Act of 1998, November 13, 1998.

>   Sec. 104(c)(1)(A). 112 STAT. 3648
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Public Law 106-65 – National Defense Authorization Act for Fiscal Year 2000, October 5, 1999

>   Sec. 723(b)(3). 113 STAT. 696

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>   Sec. 913(b)(2). 113 STAT. 1205

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>   Sec. 4(d)(C)(ii)(I). 113 STAT. 1721
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II.C. Establishing, making available and accessible, and periodically updating the data or information content of a specific information service, system, or other resource impacting the public.

Public Law 105-92 – Savings Are Vital to Everyone's Retirement Act of 1997, November 19, 1997.

>   Sec. 517(a)(4). 111 STAT. 2141

Public Law 105-185 – Agricultural Research, Extension, and Education Reform Act of 1998, June 23, 1998.

>   Sec. 258(e)(2)(C). 112 STAT. 560
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>   Sec. 120(f)(2)(C). 112 STAT. 1599
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Sec. 152502(2). 112 STAT. 1415. II.A
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Sec. 402H(c). 112 STAT. 1656. I.C
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Sec. 486(c)(2) and (c)(3). 112 STAT. 1742. I.A
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Sec. 601(b)(2). 112 STAT. 1775. I.D
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Sec. 210(a). 112 STAT. 1832. I.C
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Sec. 485(D)(a). 112 STAT. 2681-387. I.C
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Sec. 704(b)(15)(C). 112 STAT. 2681-675. II.B
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Sec. 10305(a)(5). 112 STAT/ 2687. I.B

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Sec. 8(c)(1). 112 STAT. 2937. I.C

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Sec. 5353(b)(3)(B). 112 STAT. 2948. II.A

Public Law 105-332 – Carl D. Perkins Vocational and Applied Technology Education Amendments of 1998, October 31, 1998

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Sec. 113(c)(3)(A). 112 STAT. 3089. II.A
Sec. 113(c)(3)(B). 112 STAT. 3089. I.D
Sec. 114(c)(1)(A). 112 STAT. 3090. I.C
Sec. 114(c)(4). 112 STAT. 3092. I.D
Sec. 114(c)(5)(iii)(II). 112 STAT. 3093. I.C
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Sec. 753(a)(2)(B). 112 STAT. 3544. I.C
Sec. 797(a). 112 STAT. 3557. I.C
Sec. 803(a). 112 STAT. 3564. I.C
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Sec. 201(e)(3). 112 STAT. 3584. I.C
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106th Congress

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Sec. 3(a)(H)(vii)(II). 113 STAT. 211. I.C
Sec. 3(a)(H)(xi)(III). 113 STAT. 213. I.C
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Sec. 723(b)(3). 113 STAT. 696. II.B
Sec. 723(c)(2). 113 STAT. 696. I.C
Sec. 723(d)(3)(D). 113 STAT. 697. I.C
Sec. 914(c). 113 STAT. 721. I.C

Public Law 106-68 – Centennial of Flight Commemoration Act Amendment, October 6, 1999.

Sec. 1(d)(1)(C)and (d)(2). 113 STAT. 982. II.A
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Public Law 106-71 – Missing, Exploited, and Runaway Children Protection Act, October 12, 1999.

Sec. 2(a)(14)(C). 113 STAT. 1033. II.A
Sec. 2(b)(1)(E). 113 STAT.1034. II.A

Public Law 106-78 – Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2000.

Sec. 913(b)(2). 113 STAT. 1205. II.B

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       Sec. 332(a). 113 STAT. 1501A-197. I.C
       Sec. 211(A)(2)(E). 113 STAT. 1501A-347. I.C
       Sec. 211(A)(2)(C). 113 STAT. 1501A-347. II.C
       Sec. 108(b)(3). 113 STAT. 1501A-417. I.C
       Sec. 4712(a)(2). 113 STAT. 1501A-573. II.A

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       Sec. 911(a) and (b)(1). 113 STAT. 1656. I.C
       Sec. 912(a)(2)(B). 113 STAT. 1656. I.C
       Sec. 912(a)(2)(C) and (2)(F). 113 STAT.1657. I.C
       Sec. 912(c)(3). 113 STAT. 1658. I.C
       Sec. 915(a)(2). 113 STAT. 1659. I.C
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       Sec. 923(b)(2). 113 STAT. 1666. I.C
       Sec. 924(a)(1) through (a)(2). 113 STAT. 1667. I.C
       Sec. 924(a)(3) and (a)(4). 113 STAT. 1667. II.A
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       Sec. 924(b). 113 STAT. 1667. I.C
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       Sec. 4(d)(C)(ii)(II) and (III). 113 STAT. 1721. I.C.
       Sec. 7(a)(1). 113 STAT. 1723. II.B

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       Sec. 1149(a)(2)(B)(i). 113 STAT. 1887. I.A
       Sec. 1149(a)(2)(C). 113 STAT. 1887. I.C

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       Sec. 508(b)(4)(B). 114 STAT. 140. I.C
       Sec. 508(b)(15). 114 STAT. 140. I.C

Sec. 44721(d) and (d)(1). 114 STAT. 150. II.A
Sec. 44721(d)(2) through (d)(4). 114 STAT.151. II.A
Sec. 44721(g)(A). 114 STAT. 151. II.A
Sec. 44721(g)(4). 114 STAT. 152. II.A

Public Law 106-193 – Methane Hydrate Research and Development Act of 2000, May 2, 2000.

Sec. 3(e)(3). 114 STAT. 236. I.C

Public Law 106-200 – Trade and Development Act of 2000, May 18, 2000.

Sec. 105(d). 114 STAT. 255. II.A
Sec. 506(d)(2). 114 STAT. 304. I.C

Public Law 106-224 – Agriculture Risk Protection Act of 2000, June 20, 2000

Sec. 144(3)(B)(i). 114 STAT. 391. II.A
Sec. 243(d)(4). 114 STAT. 417. I.D
Sec. 307(e)(1). 114 STAT. 436. I.C

Public Law 106-245 – Radiation exposure Compensation Act Amendments of 2000, July 10, 2000

Sec. 417C(b)(3). 114 STAT. 509. II.A

APPENDIX 34. NCLIS COMPREHENSIVE ASSESSMENT WEB PAGE TABLE OF CONTENTS AS OF JANUARY 26, 2001

COMPREHENSIVE ASSESSMENT OF PUBLIC INFORMATION DISSEMINATION[168]
June 2000 - March 2001

Information on the NCLIS study of the planned closure of NTIS undertaken in the October 1999 - March 2000 timeframe is available at "Preliminary Assessment of NTIS Closure." The Comprehensive Assessment of Public Information Dissemination that NCLIS is presently undertaking incorporates the next stage of the NTIS study.

1. FINAL REPORT AND APPENDICES

o   **A Comprehensive Assessment of Public Information Dissemination, Final Report, Volume 1 (January 26, 2001) (Executive Summary, Report, and Appendices 1 through 10)**

o   **A Comprehensive Assessment of Public Information Dissemination, Final Report, Volume 2: Legislative and Regulatory Proposals (Not Yet Available) (Appendices 11 through 12)**

> **[Volume 2 contains the Commission's legislative proposal: The Public Information Resources Reform Act of 2001 (Appendix 11) and suggested revisions to the Paperwork Reduction Act and OMB Circular A-130 (Appendix 12). This volume will be issued by March 1, 2001.]**

o   **A Comprehensive Assessment of Public Information Dissemination, Final Report, Volume 3: Supplementary Reference Materials (Not Yet Available) (Appendices 13 through 34)**

> **[Volume 3 contains supplementary reference materials, including White Papers, Panel Reports, survey results and bibliographies.]**

o   **A Comprehensive Assessment of Public Information Dissemination, Final Report, Volume 4: Compilation of Recent Federal Statutes Pertaining to Public Information Dissemination (Not Yet Available) (Appendix 35)**

> **[Volume 4 contains A Compilation of Recent Federal Statutes Pertaining to Public Information Dissemination. The Index to the Compilation is available in Appendix 32. This volume will be issued in March 2001.]**

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[168] Available at http://www.nclis.gov/govt/assess/assess.appen34.pdf. The Assessment web page is http://www.nclis.gov/govt/assess/assess.html.

o **Executive Summary**

o **Appendices**

  ▪ **Volume 1 (Appendices 1-10)**

    ▪ **Appendix 1. Letter from Senator John McCain to NCLIS Chairperson Martha B. Gould — June 12, 2000**

    ▪ **Appendix 2. Letter from NCLIS Chairperson Martha B. Gould to Senator John McCain — June 27, 2000, replying to letter of June 12, 2000**

    ▪ **Appendix 3. Letter from Senator Joseph I. Lieberman to NCLIS Chairperson Martha B. Gould — July 17, 2000**

    ▪ **Appendix 4. Letter from NCLIS Chairperson Martha B. Gould to Senator Joseph I. Lieberman — August 7, 2000, replying to letter of July 17, 2000**

    ▪ **Appendix 5. Letter from NCLIS Chairperson Martha B. Gould to Secretary of Commerce Norman Y. Mineta — August 1, 2000**

    ▪ **Appendix 6. Letter from Secretary of Commerce Norman Y. Mineta to NCLIS Chairperson Martha B. Gould — September 1, 2000, replying to letter of August 1, 2000**

    ▪ **Appendix 7. Letter from NCLIS Chairperson Martha B. Gould to Secretary of Commerce Norman Y. Mineta — October 10, 2000**

    ▪ **Appendix 8. Letter from Secretary of Commerce Norman Y. Mineta to NCLIS Chairperson Martha B. Gould — November 21, 2000, replying to letter of October 10, 2000**

    ▪ **Appendix 9. NCLIS Press Release Announcing the Comprehensive Assessment of Public Information Dissemination — June 26, 2000**

    ▪ **Appendix 10. NCLIS Principles of Public Information — June 29, 1990**

  ▪ **Volume 2 - The Legislative and Regulatory Proposals (Appendices 11-12)**

    ▪ **Appendix 11. The Public Information Resources Reform Act of 2001**

    ▪ **Appendix 12. Suggested Revisions to The Paperwork Reduction Act and OMB Circular A-130**

  ▪ **Volume 3 - Supplementary Reference Materials (Appendices 13-34) (Not Yet Available)**

    ▪ **Appendix 13. NCLIS Study Plan Outline — July 25, 2000**

    ▪ **Appendix 14. Some Issues/Concerns to Address — July 25, 2000**

    ▪ **Appendix 15. Some Important Information Age Paradigms shifts and Their Associated Myths, and Realities — written by F. Woody Horton, NCLIS Consultant**

- **Appendix 31.** A Bibliography of Government Information Dissemination Resources — compiled by Sarah Kadec and Barbara Whiteleather, NCLIS Consultants

- **Appendix 32.** A Bibliography of National Information Policies — compiled by Dean Toni Carbo and associates, Graduate School of Information Sciences, University of Pittsburgh

- **Appendix 33.** Index to a Compilation of Recent Federal Statutes Pertaining to Public Information Dissemination

- **Appendix 34.** NCLIS Comprehensive Assessment Web Page Table of Contents as of January 26, 2001

- **Volume 4 - Compilation of Recent Federal Statutes Pertaining to Public Information Dissemination**

  - **Appendix 35. A Compilation of Recent Federal Statutes Pertaining to Public Information Dissemination**

2. CONGRESSIONAL AND EXECUTIVE BRANCH COMMUNICATIONS NOT IN THE APPENDICES

- **NCLIS letter to Senate and House Majority and Minority Staff Directors** - July 7, 2000

- **Letter from Representatives Constance Morella and Tom Davis to GAO re: NTIS** - August 1, 2000 (in PDF format)

- **Federal Information Policy Act of 2000**
  introduced 7/27/00 by Congressman Davis, referred to Committee Government Reform. Access thru Thomas, Bill & Summary Status for 106th Congress 2d Session, type in H.R. 5024

- **House Appropriations Committee directed GAO study of SuDocs Functions and Programs** - July 27, 2000

- **FirstGov.gov Hearings: FirstGov.gov: Is it a Good Idea?;** House Committee on Government Reform - October 2, 2000

3. STUDY GOALS, ORGANIZATION, PLANS, MEETINGS, & SCHEDULES NOT IN THE APPENDICES

- **NCLIS Public Meeting Scheduled** - 342 Dirksen Bldg., Monday Dec. 4, 2000, 1-5PM

- **Study Status Report** - as of August 12, 2000

- **Study Status Report** - as of September 5, 2000

- **Study Status Report** - as of September 20, 2000

- **Study Status Report** - as of October 5, 2000

- o **Study Status Report - as of October 19, 2000**

- o **Panel Meetings Announced for September 2000**

- o **Comprehensive Assessment of Public Information Dissemination Reforms - September 2000 (PowerPoint® Presentation; best viewed in Microsoft® Internet Explorer)**

- o **NCLIS Commission Meeting Announced for November 15, 2000**

4. STAKEHOLDER COMMUNICATIONS

- o **Comments from NCLIS Public Meeting - December 4, 2000**

  - ▪ **National Association of the Deaf (NAD) - Nancy J. Bloch**

  - ▪ **Federal Library and Information Center Committee (FLICC) - Susan M. Tarr**

  - ▪ **American Library Association (ALA) - Nancy Kranich**

  - ▪ **Government Documents Roundtable (ALA/GODORT) - Ann Miller**

  - ▪ **American Association of Law Libraries (AALL) - Mary Alice Baish**

  - ▪ **Printing Industries of America (PIA) - Ben Cooper**

  - ▪ **Dan Duncan, Consultant**

  - ▪ **OMB Watch - Patrice McDermott**

- o **Other Stakeholder Comments to NCLIS**

  - ▪ **American Library Association to NCLIS re draft Executive Summary and draft Proposed Legislation Excerpts documents; November 27, 2000**

  - ▪ **Ken Wasch, President SIIA; December 8, 2000**

  - ▪ **Daniel S. Jones, President, NewsBank, Inc.; December 8, 2000**

  - ▪ **The American Council of the Blind submitted by Krista Dubroff, Policy Analyst ; December 8, 2000**

  - ▪ **The Archivist of the United States John W. Carlin; December 8, 2000**

  - ▪ **Morton Bahr, President, Communications Workers of America (AFL-CIO, CLC); December 14, 2000**

  - ▪ **GladysAnn Wells, Director, Arizona State Library, Archives and Public Records; December 15, 2000**

  - ▪ **Paul A. De Guisti, Director, Washington Affairs, The McGraw-Hill Companies; January 2, 2001**

  - ▪ **Edward J. Black, President and CEO, Computer and Communications Industry Association (CCIA); January 3, 2001**

- ▪ **Keith M. Fiels, President, Chief Officers of State Library Agencies (COSLA)**; **January 3, 2001**

- ▪ **Prudence S. Adler, Associate Executive Director, ARL; Mary Alice Baish, Acting Washington Affairs Representative, AALL; Lynne Bradley, Director, Office of Government Relations, ALA; Ann E. Miller, Chair, GODORT, ALA**; **January 3, 2001**

- ▪ **Nancy M. Bolt, Assistant Commissioner for Libraries, Colorado Department of Education; January 4, 2001**

- ▪ **Public Printer Michael F. DiMario; January 4, 2001**

- ▪ **Clara P. McLeod, Chair, Cartographic Users Advisory Council (CUAC)**

5. PANEL AND GROUP OF EXPERTS COMMUNICATIONS

- o **PowerPoint Presentation, Peter Urbach, NCLIS Mtg. - November 15, 2000**

- o **PowerPoint Presentation, Kurt Molholm, NCLIS Mtg. - November 15, 2000**

6. STUDY-RELEVANT ARTICLES, REPORTS AND DIRECTIVES, PUBLICATIONS, STUDIES, AND CONFERENCES
Additional references are included in bibliographies in Appendices 31 and 32 in Section 1 above

A. Articles

- o **The Electronic Envelope,** by William H. Price, *Information Management Review*, Vol. 2, No. 2, Fall 1986

- o **The Issue of Access to Federal Information**, Kurt N. Molholm, October 1990

- o **Premises for Developing World Wide Web Strategies,** by Kurt Molholm, *ICSTI Forum: Quarterly Newsletter of the International Council for Scientific and Technical Information*, No 27, March 1998

- o **Information Overload**, by Eric Yoder, *Government Executive*, August 6, 2000

- o **Out Front on Access**, Editorial, *Federal Computer Week*, August 7, 2000

- o **First Gov: All Bark, No Bite** by Patrice McDermott, *Federal Computer Week*, August 14, 2000

- o **NTIS' Continuing Punishment**, by J. Timothy Sprehe, *Federal Computer Week*, August 28, 2000

- o **The Business Impact of Government-wide Portals,** by Patricia B. Wood, *Access America*, September 7, 2000

- o **Print No More:** *U.S. Code, Code of Federal Regulations* **and the** *Federal Register*, by Timothy L. Coggins, *Virginia Lawyer*, Vol. 49, No. 3, October 2000 (in PDF format)

o **Your Tax Dollars at Work: The Internet Should Serve as the U.S. Government's Primary Archive**, Barbara Quint, *Information Today*, Vol. 17, No. 9, October 2000

o **Industry Frets Over FirstGov**, William Matthews, *Federal Computer Week*, October 3, 2000

o **Filegate.gov**, by David Corn, *Wired Magazine*, Vol. 8, No. 11, November 15, 2000

B. Reports and Directives

o **Public Sector/Private Sector Interaction in Providing Information Services**
A reprint with editorial changes and supplementary material of an NCLIS report originally published in February 1982.

o Prepared Statements of Daniel P. O'Mahony, Brown University, on Public Access to Government Information in the 21st Century

  ▪ **Testimony before the Senate Committee on Rules and Administration** - Tuesday, June 18, 1996, 9:00 a.m.; 301 Russell Senate Office Building

  ▪ **Prepared Statement before the Senate Committee on Rules and Administration** - Tuesday, June 18, 1996; 301 Russell Senate Office Building

  ▪ **Responses to Questions Submitted for the Record**

o **Goals for Revising U.S.C. Title 44 to Enhance Public Access to Federal Government Information** - Developed by the Inter-Association Work Group on Government Information Policy - May 1997

o **Concepts for Reform of Title 44;** Eric Peterson, Joint Committee on Printing, U.S. Congress - September 12, 1997

o **Government Information Dissemination Programs: Proposals For Change And Related Initiatives;** Association of Research Libraries (ARL) - May 1998

o **IRM and the Freedom of Information Act,** Key Excerpts from Presidential and Attorney General Directives - 1999

o **IRM & the Freedom of Information Act, Dept. of Justice,** by Own Ambur - November 20, 2000

C. Studies

o **Information Technology and the Conduct of Research: The User's View,** National Academy of Sciences, National Academy of Engineering, Institute of Medicine Panel chaired by Donald N. Langenberg - 1989

o **Scientific and Technical Information Policy Implementation Under OMB Circular A-130: Report of Agency Findings and Recommendations,** A-130 Implementation Guidelines Group for Scientific and Technical Information - May 1995 (in PDF format)

o **Permanent Public Access to Electronic Federal Government Information**, NAS/CSTB Draft Concept Paper; Computer Science and Telecommunications Board, National Academy of Sciences - Revised May 12, 1999

o **The Facts of the Matter: Finding, Understanding, and Using Information About Our Physical World**, Workshop Report on a Future Information Infrastructure for the Physical Sciences - May 30-31, 2000

o **Value of Information and Information Services: How Decision Makers Value Information**, Department of Transportation Federal Highway Administration - August 1999

o **Public Library Internet Services: Impacts on the Digital Divide**, Stage I Final Report, by Charles R. McClure, and John Carlo Bertot - August 20, 2000

o **International Union of Pure and Applied Physics Working Group on Electronic Communication: Final Report**, Martin Blume, Chair - September 2000 (in PDF format)

o **Who's Not Online**, Pew Internet and American Life Project - September 25, 2000

o **The Impacts of the Internet on Public Library Use: An Analysis of the Current Consumer Market for Library and Internet Services,** by Eleanor Jo Rodger and George D'Elia, Urban Libraries Council - October 2000

o **Performance Measures for Agency Websites** by C. McClure, J. T. Sprehe, and K. Eschenfelder, study commissioned by GPO, DTIC, and EIA - October 2000

o **The Role of Government in a Digital Age**, by J. Stiglitz, P. Orszag, and J. Orszag, study commissioned by Computer and Communications Industry Association - October 12, 2000

o **HANDLES and PURLS—A Comparison**, Internet Engineering Task Force (IETF) – October 20, 2000

o **How Much Information?** School of Information Management and Science, University of California at Berkeley - November 22, 2000

D. Conferences

o **Fifth Solomons Interagency Conference On Public Access Proceedings;** U.S. Department of Health and Human Resources - January 27-28, 1994

o **Framework for a New Federal Information Dissemination and Access Program** - Chicago Conference 1993 Association of Research Libraries (ARL)

o **Group of Eight Okinawa Charter on Global Information Society and Global Service Trust Fund Project** - July 22, 2000

o **Workshop Report on a Future Information Infrastructure for the Physical Sciences** - May 31-31, 2000 (in PDF format)

o   **21st Annual National Online Meeting & IOLS 2000 (PowerPoint® Internet Explorer) Grey Literature in Government: Mixing Up Black & White** by Bonnie Carroll (IIA) and Bonnie Klein (Defense Technical Information Center; May 16-18, 2000 (New York, NY)

o   **The Myth and Reality of Electronic Publishing Teleconference**, Wednesday, November 15, 2000; 1:30 p.m. to 3:00 p.m. Eastern Time

o   NARA is holding a conference on "Digital Strategies - 2000", November 16 - 17, 2000, at the National Archives at College Park, Maryland. The program is available at **http://www.nara.gov/program.html**

o   **The Santa Fe Convention for the Open Archives Initiative**

E Correspondence

o   **Letter from the Department of Commerce to the American Library Association Washington Office** - August 11, 1988

o   **Letter from Software and Information Industry Association (SIIA) to GSA re FirstGov Activity** - July 20, 2000

o   **Letter from the Superintendent of Documents to Directors of Federal Depository Libraries** - August 25, 2000

7. WEB SITE LINKS

Listed below are links to web sites that organize and facilitate public access to a wide range of federal government information, provide public information locator tools, provide online databases, offer special insights for how to efficiently and effectively access government information, or illuminate policy, legal, security, privacy, or similar kinds of issues and concerns related to information access and dissemination. These links are cited here for research and study purposes. Listing them here does not necessarily imply NCLIS endorsement.

A. Sites Under Development

o   **FirstGov;** A U.S. Government website that will provide free rapid access to government information and services to the public.

o   **FirstGov: Information for Webmasters** - September 20, 2000

o   **Consumer.gov;** U.S. Government website that will provide consumer information to the public, covering such areas as health, safety, security protections, availability, and so forth.

o   **FirstGov.gov Hearings: FirstGov.gov: Is it a Good Idea?;** House Committee on Government Reform - October 2, 2000

o   **Audio-Video URL for House FirstGov.gov** (You will need a media player in order to access this clip.)

o   **FirstGov: Not Yet Prime-Time;** About.com Web Search Guide - Sept. 25, 2000

o   **Impartiality Of E-Government Portal Questioned;** NewsBytes - Oct. 2, 2000

o **FirstGov Comments** - Government Information. Technology Committee, GODORT, and Government Information Subcommittee of the American Library Association (ALA) - Oct. 18, 2000

B. Sites Operational

(1) Government Sites (including government web-based search utilities, e.g. search engines, data miners, etc.)

o **Access America links**

o **The Access Board - Standards for Electronic & Info. Tech. re RAA of 1998 S508**

o **American Memory**

o **Archival Information Locator (NAIL)**

o **CENDI**

o **Council for Excellent in Government Report on e-Gov by Hart-Teeter**

o **Depository Library Materials Not Found On the Web - Current Research Results**

  ▪ **http://www.lib.berkeley.edu/GODORT/2k0508missing.html**

o **DOTbot**

o **e-Government; An Experiment in Interactive Legislation**

o **EPA Library Web Link Initiatives**

o **Falling through the Net: Defining the Digital Divide, NTIA, 1999**

o **Federal IT Accessibility Initiative - Section 508 of Rehabilitation Act**

o **Federal R&D Project Summaries**

o **Federal Webmasters Forum**

  ▪ **EGov & CIO Links**

  ▪ **Home Page**

  ▪ **Meeting Schedule**

o **FedWorld**

o **Government Information Locator Service (GILS)**

o **GPO Access**

o **GrayLIT Network**

o **Legislative Process - The House**

- o **Legislative Process - The Senate**

- o **Library of Congress - Thomas**

- o **A List of Reports Pursuant to Clause 2, Rule III of the Rules of the House of Representatives House Document 106-37;** January 6, 1999 - Referred to the Committee on House Administration and ordered to be printed.

- o **Map Stats**

- o **National Academy Web Site,** key recent STI reports:

  - ▪ **1. A Question of Balance: Private Rights and Public Interests in Scientific and Technical Databases (1999);**

  - ▪ **2. Preserving Scientific Data in our Physical Universe: A New Strategy for Archiving our Nation's Scientific Information Resources (1995); and**

  - ▪ **3. Bits of Power: Issues of Global Access to Scientific Data (1997).**

- o **Rules for The House**

- o **U.S. Courts**

  - ▪ **U.S. Courts - Directory of Electronic Public Access Services (PACER)**

- o **U.S. Environmental Protection Agency Web Metadata Inventory;** Improving Access to EPA's Public Information

- o **U.S. Supreme Court**

- o **Web-Based Federal Agency Consumer Complaint Handling** (in PDF format)

- o **World Wide Web Home Page Guidelines and Best Practices, WWW Federal Consortium, 1996**

(2) General Search Engines

- o **AltaVista**

- o **Excite**

- o **Go Network**

- o **Go-to.com**

- o **Google**

- o **GovernmentConnection.com;** Government Web Site Directory Product

- o **GovernmentGuide.com - America Online (AOL)**

- o **GovSpot**

- o **Home.mining.com**

- o **HotBot**

- o **LookSmart**

- o **Lycos**

- o **Netscape**

- o **Netscape's News Search**

- o **Northern Light**

- o **Snap.com**

- o **Webcrawler**

- o **Yahoo!**

(3) Academic, Public Interest, Association, and Other Sites

- o **American Society of Access Professionals**

- o **Association of Knowledgework Home Page**

- o **Association of Public Data Users (APDU) Home Page**

- o **Federal Web Locator, Villanova University**

- o **The GODORT (Government Documents Round Table of the American Library Association) Fed Docs Task Force's Frequently Used Sites Related to U.S. Federal Government Information**

- o **GovBot, University of Massachusetts**

- o **Inter-Association Working Group on Government Information Policy (IAWG) - UC Berkeley Library host site, containing 'Federal Information Access Act of 1998' proposed legislation and other material**

- o **Librarea - Active Worlds, Virtual (3-D) Libraries Experimental Program - Nov. 6, 2000**

- o **Meta-Subject Index to Government Information, GEM State November 15, 2000**

- o **Northeast Document Conservation Center, Handbook for Digital Projects: A Management Tool for Preservation and Access - Dec. 13, 2000**

- o **OMB Watch - Easy Access to Federal Information Policy - Sept. 19, 2000**

- o **U.S. Federal Government Agencies Directory Search Engine, Louisiana State University**

- o **Washburn University School of Law**

A Comprehensive Assessment of Public Information Dissemination is published in 4 volumes.

Volume 1 is available in electronic form at http://www.nclis.gov/govt/assess/assess.vol1.pdf and in print. It contains the executive summary, the report and Appendices 1 through 10.

Volume 2 is available in electronic form at http://www.nclis.gov/govt/assess/assess.vol2.pdf and in print. It contains Appendices 11 and 12, the Legislative and Regulatory Proposals.

Volume 3 is available only in electronic form at http://www.nclis.gov/govt/assess/assess.vol3.pdf. It contains Appendices 13 through 34, the Supplementary Reference Materials.

Volume 4 is available only in electronic form at http://www.nclis.gov/govt/assess/assess.vol4.pdf. It contains Appendix 35, Compilation of Recent Statutes Relating to Public Information Dissemination.

The Commission web page containing other documents related to *A Comprehensive Assessment of Public Information Dissemination* is at http://www.nclis.gov/govt/assess/assess.html.